

Transformational Leadership, Team Goal Fulfillment, and Follower Work Satisfaction

The Moderating Effects of Deep-Level Similarity in Leadership Dyads

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The impact of deep-level similarity between managers ($N_1 = 117$) and followers ($N_2 = 403$) on the interrelations between transformational leadership and outcomes was analyzed. The authors accounted for similarity in subjective meaning of work, occupational self-efficacy, and emotional irritation. Unexpectedly, the authors found a negative interrelation between transformational leadership and team goal fulfillment when followers scored higher than their managers on subjective meaning of work and when followers were more emotionally irritated than their managers. Thus, to increase transformational leadership's positive effects, managers should show appreciation of work values, and their followers' level of exhaustion should be kept to a minimum.

Keywords: *deep-level similarity; transformational leadership; goal fulfillment; work satisfaction*

In leadership research, similarity between leaders and followers has predominantly been analyzed as a predictor of leader-member exchange (e.g., Deluga, 1998; Dose, 1999). Similarity has also been examined in terms of value congruence as a mediator of transformational leadership (e.g., Jung & Avolio, 2000). Over the past few decades, transformational leadership has increasingly been seen as an effective leadership style. However, Yukl (1999) has criticized researchers for not paying sufficient attention to mediating and moderating variables of transformational leadership. Identifying facilitating and limiting conditions for transformational leadership's effectiveness is of practical importance (e.g., for leadership training). This is particularly relevant as there might be conditions under which transformational leadership is even detrimental (Yukl, 1999, p. 291).

This field study aimed at identifying facilitating conditions that are related to deep-level similarity between managers and followers. We investigated whether the interrelation between transformational leadership and outcomes is moderated by deep-level similarity between managers and followers. Evidence

exists that both attitudinal variables, such as follower work satisfaction (Podsakoff, MacKenzie, & Bommer, 1996), and group performance (Lowe, Kroeck, & Sivasubramaniam, 1996) are positively related to transformational leadership (Vandenberghe, Stordeur, & D'hoore, 2002). In their meta-analysis, Judge and Piccolo (2004) reported substantial correlations between transformational leadership and follower work satisfaction ($r = .58$) as well as between transformational leadership and group performance ($r = .23$). In our study, we chose these common variables: We assessed work satisfaction rated by the followers themselves and managers' ratings of their respective working group's performance. Our choice of outcomes also meets Yukl's (2002, p. 8) proposition that multiple criteria from different sources should be considered in leadership research.

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We focused on different fields of deep-level similarity to attain a comprehensive picture of similarity's effects. We chose three work-relevant personal attributes: subjective meaning of work, occupational self-efficacy, and emotional irritation. Empirical studies showed that these variables were of relevance for transformational leadership. Similarity in work values between leaders and followers has been found to mediate between leadership and leadership effectiveness (Jung & Avolio, 2000), whereas there is evidence that high occupational self-efficacy on the followers' side positively influences the interrelation between leadership and leadership effectiveness (Walumbwa, Lawler, Avolio, Wang, & Shi, 2005). Finally, another study found that leadership positively affects followers' emotional state (Seltzer, Numerof, & Bass, 1989).

Transformational Leadership and Outcomes

Transformational leadership (Bass, 1985) involves leadership behaviors that can elicit extraordinary performance on the part of followers (Felfe & Schyns, 2004). According to Jung and Avolio (2000), transformational leaders "engage the emotional involvement of their followers to build higher levels of trust in the leader and his or her mission" (p. 950). Obviously, this definition of transformational leadership merges behaviors and the effects of these behaviors (Yukl, 1999). This lack of differentiation between behaviors and effects continues when we take a look at other behavioral dimensions that constitute transformational leadership: Among others, transformational leaders are said to inspire and intellectually stimulate their followers (Multifactor Leadership Questionnaire; Bass & Avolio, 1995).

In spite of this often criticized lack of clarity in its definition and its underlying processes (Felfe, 2006a; Goodwin, Wofford, & Whittington, 2001; Judge, Woolf, Hurst, & Livingston, 2006), transformational leadership has been shown to impact on different outcome measures (Felfe, 2006a; Fuller, Patterson, Hester, & Stringer, 1996; Judge & Piccolo, 2004; Judge et al., 2006; Lowe et al., 1996). In general, transformational leadership appears to have stronger effects on follower attitudes than on performance measures (Judge & Piccolo, 2004).

Whereas the main effects of transformational leadership are well documented, other research findings suggest that these effects are often moderated and mediated by a variety of factors. On one hand, the positive effects of transformational leadership on performance and follower attitudes can be fostered by

contextual factors, such as unstable surroundings (Podsakoff et al., 1996) and comparatively high levels of organizational hierarchy (Lowe et al., 1996), as well as follower characteristics such as empowerment (Fuller, Morrison, Jones, Bridger, & Brown, 1999). On the other hand, the interrelation between transformational leadership and outcomes is mediated by follower characteristics such as organizational citizenship behavior (Boerner, Eisenbeiss, & Griesser, 2007), empowerment (Avolio, Zhu, Koh, & Bhatia, 2004), collective self-efficacy (Walumbwa, Peng, Lawler, & Kan, 2004), and group cohesiveness (Jung & Sosik, 2002). Felfe (2006a) summarized that changes in follower characteristics, such as increased identification and purpose, seem to explain the effects of transformational leadership, whereas contextual factors, such as complexity and uncertainty, increase the interrelation between transformational leadership and outcomes (p. 168).

The aforementioned studies meet Yukl's (1999) suggestion that moderating and mediating variables should be investigated for a clearer picture of how transformational leadership leads to positive outcomes. In this context, similarity between leaders and followers may be another moderating variable.

Kinds of Similarity

When discussing similarity, the following distinctions have to be made. First, one should distinguish between *surface-level* and *deep-level similarity* (Hiller & Day, 2003). Surface-level similarity refers to demographic characteristics such as gender, age, and ethnic background (social category diversity; Jehn, Northcraft, & Neale, 1999). Deep-level similarity is based on more psychological characteristics such as values, personality, and attitudes (Harrison, Price, & Bell, 1998). Whereas indicators of surface-level similarity are salient and, consequently, likely to be perceived very quickly, indicators of deep-level similarity have to be derived from observed behaviors and/or interaction and communication.

A second differentiation concerns *perceived* and *actual similarity*. Perceived similarity refers to subjective ratings of similarity with respect to another person: For example, followers rate themselves and their leaders with regard to certain characteristics, and differences between these two ratings are computed (Felfe & Schyns, 2004). Another way of assessing perceived similarity is to directly ask participants how similar they feel to another person: For example, followers can indicate how far they see things in the

same way as their leaders (Murphy & Ensher, 1999). It is not surprising that research often focuses on perceived similarity, because a given similarity must be perceived before it can show effects. When assessing actual similarities, researchers usually focus on surface-level similarities (e.g., belonging to the same gender group). It is nevertheless possible to assess actual deep-level similarities by using ratings from independent data sources (e.g., followers and leaders rate themselves with regard to certain deep-level characteristics). Consequently, deep-level similarity scores can be calculated by taking the absolute values of the differences between these ratings (Ashkanasy & O'Connor, 1997).

Using difference values as indicators of deep-level similarity allows a third distinction: *degree of similarity* versus *nature of dissimilarity*. Degree of similarity refers to the aforementioned absolute value of difference between two persons' ratings, whereas nature of dissimilarity refers to the direction of the difference between these ratings. Both degree of similarity (regardless of a difference's direction) and nature of dissimilarity (regardless of a difference's absolute value) may be important. It may be interesting to know whether the difference between followers and leaders is rather low (i.e., similarity) or rather high (i.e., dissimilarity). With regard to the nature of difference, it could be relevant whether followers or leaders score higher on a certain variable.

We used difference scores for this study to capture actual deep-level similarity. The advantage is that both degree of similarity as well as nature of dissimilarity are reflected in one measure simultaneously. Follow-up analyses with degree and nature separately allow examining which aspect of similarity and dissimilarity, respectively, is more relevant. Effects of similarity between leaders and followers have been examined in prior research. The variables under consideration were surface-level similarity (e.g., belonging to the same gender group) and perceived deep-level similarity (e.g., supposed similarity in work values). We only report research about deep-level similarity in the following, because this is the focus of our study.

Deep-Level Similarity and Leadership: Direct and Mediating Effects

Effects of deep-level similarity have been discussed in different psychological fields. In social psychology, the impact of attitudinal similarity on attraction was examined (similarity attraction; Byrne,

Clare, & Smeaton, 1986). Perceived similarity fostered "positive affective reactions" that were reflected in positive judgments about a target person (Ah Yun, 1997, p. 20; 1999).

Deep-level similarity between leaders and followers has also been a topic in leadership research (e.g., effects on leader-member exchange; Graen & Uhl-Bien, 1995). Empirical studies provided evidence that similarity in different fields may lead to a higher relationship quality between leaders and followers: Deluga (1998) reported that similarity in conscientiousness had positive effects on productivity and led to high-quality leader-member exchange. In another study, Dose (1999) found that similarity in work values was positively related to leader-member exchange. With regard to transformational leadership, similarity in work values has been studied as a mediating variable. Among other characteristics, transformational leaders show inspirational motivation (Bass & Avolio, 1995). These leaders have visions that they communicate to their followers. Followers may internalize these visions or not. Jung and Avolio (2000) showed that congruence in work values (i.e., followers' internalization of their leader's visions) was a mediator between transformational leadership and follower performance. In sum, deep-level similarity between leaders and followers has predominantly been analyzed as a predictor of leader-member exchange and as a mediating variable of transformational leadership.

Deep-Level Similarity and Leadership: Moderating Effects

In a previous study, Gründling (2004) analyzed moderating effects of deep-level similarity on the interrelation between leadership and outcomes. Unexpectedly, she found that dissimilarity between leaders and followers can have a more positive impact than similarity. This surprising finding raised the question whether the nature of dissimilarity between leaders and followers (i.e., direction of difference) was relevant.

To our knowledge, there are no studies in which moderating effects of deep-level similarity on transformational leadership's effectiveness were analyzed. We decided to focus on the interrelations between transformational leadership and follower work satisfaction as well as between transformational leadership and team goal fulfillment. Deep-level similarities in subjective meaning of work, occupational self-efficacy,

and emotional irritation were considered as potential moderating variables. Our hypotheses focus on possible effects of the nature of similarity.

Subjective meaning of work is a personal value that is defined as the status of work in one's personal life (Schaarschmidt & Fischer, 1997). Similarity in work values has been shown to be a mediator between transformational leadership and follower performance (Jung & Avolio, 2000). Besides this, work values have also been considered as particularly promising moderators of leadership effects (e.g., Villa, Howell, Dorfman, & Daniel, 2003). Employees with high work values may have little need for supervision. Reviewing literature about substitutes for leadership, Podsakoff and MacKenzie (1997) concluded that when employees share their organization's values, this could even replace the need for formal leaders. We assume that similarity between leaders and followers in work values might be a moderator of the interrelation between transformational leadership and outcomes. When followers appreciate work as a personal value more than their leaders, the interrelation between transformational leadership and outcomes is less likely to be affected. For these followers, the meaning of work is *independent* of their leaders' values (Böckmann, 1980). This may make followers less attentive to their leaders' behavior. Moreover, leaders with comparatively high subjective meaning of work may increase their *attempts* to show transformational behaviors (e.g., stimulation and consideration). These leaders may also be able to communicate their ideas and visions in an authentic manner (relational authenticity; Eagly, 2005). In doing so, these leaders can be positive role models. Consequently, the interrelation between transformational leadership and outcomes will be stronger than in dyads where leaders have a comparatively low subjective meaning of work. Thus, regarding the nature of similarity in subjective meaning of work, we expect the following:

Hypothesis 1: The interrelation between transformational leadership and outcomes (i.e., team goal fulfillment and follower work satisfaction) is stronger when leaders score higher than their followers on subjective meaning of work.

Occupational self-efficacy is a cognitive state that is defined as "people's beliefs about their capabilities to exercise control over their level of functioning and over events that affect their lives" (Bandura, 1991, p. 257). Self-efficacy is substantially interrelated with work outcomes (Stajkovic & Luthans, 1998).

Moreover, prior studies have shown that follower self-efficacy moderates the interrelation between transformational leadership and follower attitudes (Walumbwa et al., 2005). When follower self-efficacy was high, the positive interrelation between transformational leadership and follower commitment as well as between transformational leadership and follower work satisfaction was particularly strong. Walumbwa et al. (2005) argued that followers scoring high on self-efficacy "are more susceptible to the impact of a transformational leader because such [a] cognitive state is congruent with transformational leadership behavior" (p. 3).

Occupational self-efficacy is task- and situation-specific (Stajkovic & Luthans, 1998) and refers to employees' conviction that they can successfully behave as required in their respective profession (Schyns & Collani, 2002). We assume that when followers score higher than their leaders on occupational self-efficacy, the interrelation between transformational leadership and outcomes is stronger. On the other hand, leaders scoring higher than their followers on occupational self-efficacy may give them the feeling of being pushed too hard by high performance expectations. This may have a negative effect on the interrelation between transformational leadership and outcomes. Regarding the nature of similarity in occupational self-efficacy, we expect the following:

Hypothesis 2: The interrelation between transformational leadership and outcomes (i.e., team goal fulfillment and follower work satisfaction) is stronger when followers score higher than their leaders on occupational self-efficacy.

Emotional irritation is an emotional state that refers to consequences of psychological stress. Emotional irritation describes a state of mental exhaustion (Mohr, Müller, Rigotti, Aycan, & Tschan, 2006). The homonymous scale was developed in the context of occupational stress research (Mohr, 1986). Stress effects, such as mental exhaustion and burnout, were discussed as potential negative outcomes of transformational leadership (e.g., Harrison, 1987). However, Seltzer et al. (1989) found that transformational leadership had positive effects on followers' emotional state. Moreover, unstable surroundings, a potential source of stress, fostered the effectiveness of transformational leadership (Podsakoff et al., 1996). As far as we know, there are no studies analyzing whether stress effects are relevant for the interrelation between leadership and outcomes. We assume that

followers who are more emotionally irritated than their leaders are immune to the communication of visions and aversive of further stimulation. Thus, the interrelation between transformational leadership and outcomes will be weak. When transformational leaders are more emotionally irritated than their followers, they may be perceived as particularly authentic and committed to their work task. Thus, the interrelation between transformational leadership and outcomes will be strong. Regarding the nature of similarity in emotional irritation, we expect the following:

Hypothesis 3: The interrelation between transformational leadership and outcomes (i.e., team goal fulfillment and follower work satisfaction) is weaker when followers score higher than their leaders on emotional irritation.

Method

Sample and Procedure

Our sample comprised $N_1 = 403$ followers and their $N_2 = 117$ direct managers from 45 German organizations. Several followers per team took part. On average, the teams comprised 12.5 followers ($SD = 10.4$). All of the teams were regular working groups as opposed to short-term project teams. Followers were accountable to their respective manager, who in turn was accountable to her or his direct supervisor, usually heads of departments. The teams were at no particular stage in the work progress when the study was conducted as they were open-ended working groups. Twenty-five percent of the managers indicated that they had selected their followers themselves.

Managers' average age was 41.5 ($SD = 8.6$). They had been managers for an average of 9.2 years ($SD = 7.2$). All managers were situated at low levels of the organizational hierarchy. Fifty-four managers were female (46.2%). The followers' average age was 38.0 ($SD = 10.3$). They had been working with their respective manager for an average of 3.4 years ($SD = 3.5$). Two-hundred sixty-eight followers were female (66.5%). Most of our respondents worked in banks and insurance companies (53.6% = 216 followers). The remaining participants were predominantly employed in engineering firms (18.9% = 76 followers), in housing corporations (14.1% = 57 followers), and in the electrical industry (8.2% = 33 followers).

Followers were surveyed during working time in small groups with up to 10 participants. Managers were given questionnaires with prepaid envelopes and were asked to send the questionnaires back to the

researchers (response rate: 79.7%). To find a sufficient number of participants, we had to shorten the questionnaire during the course of the project. For this reason, data concerning occupational self-efficacy refer to a subsample only (292 followers and 81 managers).

Instruments

For assessing *transformational leadership* (follower ratings), we used 20 items from the Multifactor Leadership Questionnaire (Bass & Avolio, 1995; German translation and modification: Felfe, 2006b; Felfe, Tartler, & Liepmann, 2004). These items refer to leadership behaviors such as intellectual stimulation, individualized consideration, and inspirational motivation. Answer categories range from 1 = *never* to 5 = *frequently, if not always*.

Team goal fulfillment (manager ratings) was assessed with five items referring to the fulfillment of goals set in advance. A sample item is "We reach the goals set by the top management." The scale ranges from 1 = *definitely false* to 5 = *definitely true*. Data for goal fulfillment had to be z -transformed for technical reasons (change of scale's range during the study).

Follower work satisfaction (follower ratings) was assessed with an instrument used by Baillod and Semmer (1994; Elfering, Semmer, & Kälin, 2000), based on Oegerli (1985). The instrument comprises eight items. An example of one of these items is "In recent weeks, how often do you think: 'After days-off, I'm really happy to return to work?'" The scale ranges from 1 = *virtually never* to 7 = *virtually always*.

We assessed *subjective meaning of work* with the homonymous subscale of the AVEM inventory (Arbeitsbezogene Verhaltens- und Erlebensmuster [Types of Work-Related Behavior and Experience]; Schaarschmidt & Fischer, 1997). This subscale comprises four items, and its answer categories range from 1 = *strongly disagree* to 5 = *strongly agree*. A sample item is "Work is my main purpose in life."

For assessing *occupational self-efficacy*, we used a short form of the Occupational Self-Efficacy Scale (OCCSEFF) by Schyns and Collani (2002). Respondents indicated to which extent they feel competent to fulfill the requirements of their job on eight items. A sample item is "No matter what comes my way in my job, I am usually able to handle it." The answer categories range from 1 = *does not apply at all* to 6 = *applies completely*.

Emotional irritation describes consequences of psychological stress (Mohr et al., 2006). Longitudinal data gathered by Grebner (2001) indicate that systolic blood pressure—an indicator of stress—is a predictor

Table 1
Intercorrelations Between All Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. TL (f)	3.56	0.6	0.93								
2. WS (f)	5.4	0.84	.41**	0.77							
3. GF (m)	—	—	0.04	0.04	0.78						
4. MW (f)	2.88	0.91	.25**	.22**	0.05	0.81					
5. MW (m)	3.11	0.84	0.05	.17**	.22**	.16**	0.82				
6. SE (f)	4.51	0.71	.19**	.18**	-.03	.24**	0.01	0.88			
7. SE (m)	4.7	0.59	.31**	0.03	.34**	0.04	.15*	0.1	0.84		
8. EI (f)	2.06	0.84	0.09	.22**	-.02	0.04	0.06	-.30**	0.01	0.78	
9. EI (m)	2.24	0.87	0.07	0.05	.24**	0	.20**	0.1	-.32**	0.01	0.8

Notes: * $p < .05$, ** $p < .01$ (two-tailed alpha of 0.05). TL = transformational leadership, WS = work satisfaction, GF = goal fulfillment, MW = subjective meaning of work, SE = occupational self-efficacy, EI = emotional irritation. f = follower ratings, m = manager ratings. For SE, the sample size is $N = 292$. For all other variables, the sample size is $N = 403$. For GF, mean value and standard deviation are not available, because the scores had to be z-transformed (change of scale's range during the study). Reliabilities are shown in the principal diagonal.

of emotional irritation. Moreover, emotional irritation is related to psychosomatic complaints (Garst, Frese, & Molenaar, 2000). The scale measures a status of exhaustion in which short daily breaks are no longer sufficient for recovery, but recovery is still possible, for example by taking longer breaks, changing task assignments, or changing deadlines. Dormann and Zapf (2002) showed that irritation is an indicator of strain and an early precursor of depressive reactions. The emotional irritation scale comprises five items, and its answer categories range from 1 = *strongly disagree* to 7 = *strongly agree*. A sample item is “I get grumpy when others approach me.”

Control variables. Indicators of surface-level similarity were not in the focus of our investigation. Nevertheless, we controlled for the most common indicators of surface-level similarity (Hiller & Day, 2003) in all analyses. As our sample was ethnically homogeneous, these indicators were gender (dummy-coded: 0 = same gender, 1 = different gender) and age (difference score: followers' age minus leaders' age).

Analysis

To test our hypotheses, similarity scores for each leadership dyad were calculated first. As we subtracted managers' scores from followers' scores, positive differences indicate that followers scored higher on the respective similarity indicator, whereas negative scores indicate that managers scored higher. These similarity scores reflect both the degree of difference and the direction of difference. We then used these difference scores in moderated regression analyses (i.e., regression analyses

contained the interaction term Transformational Leadership \times Similarity Score as an independent variable). The interaction term must show a significant relation with the dependent variable to qualify as a moderating variable (Baron & Kenny, 1986). Variables involved were centered to the mean (Aiken & West, 1991). Following a recommendation by Villa et al. (2003), a single moderating variable was tested in each moderated regression analysis. All in all, six regression analyses were conducted (three similarity scores, each with two dependent variables). In all analyses, similarity in gender and age was entered into regression equations in a first step. For all analyses, a two-tailed alpha of .05 was considered significant.

Results

Preliminary Analyses

Correlations between follower and manager ratings were computed first. Followers' and managers' occupational self-efficacy ($r = .10$, $p > .10$) and emotional irritation ($r = .01$, $p > .10$) showed no significant interrelation. Nevertheless, there was a positive correlation between followers' and managers' subjective meaning of work ($r = .16$, $p < .01$). Table 1 summarizes the means, standard deviations, coefficient alphas, and correlations for the variables assessed in this study.

Given that within-source correlations were higher than between-source correlations, we tested the scales' discriminative validity and analyzed whether our data were affected by same source bias. These analyses were conducted separately for managers (subjective meaning of work, occupational self-efficacy,

Table 2
Moderated Regressions: Similarity in Meaning of Work as Moderating Variable

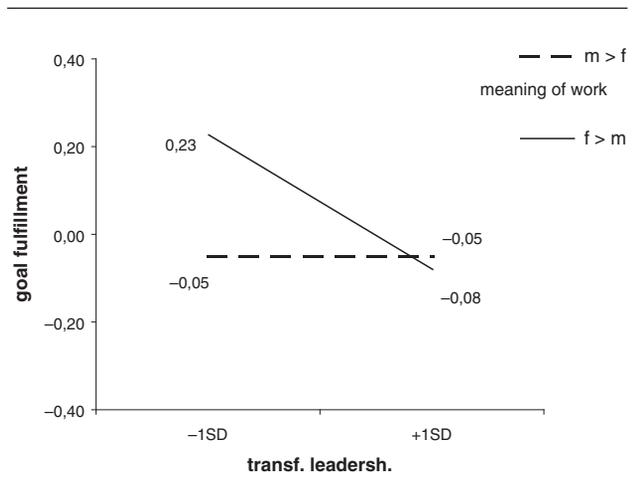
Predictor	Outcome Variable: Team Goal Fulfillment (β)		Outcome Variable: Follower Work Satisfaction (β)	
	Step	Model	Step	Model
Step 1				
Gender match	.06	.06	-.04	-.05
Difference in age	.07	.05	.05	-.02
ΔR ²	.01		.00	
Step 2				
Transformational leadership (TL)	-.01	.00	.42***	.42***
Difference in meaning of work (DMW)	.13*	.12*	-.02	-.03
ΔR ²	.02*		.17***	
Step 3				
TL × DMW	-.16**	-.16**	-.08	-.08
ΔR ²	.03*		.01	
Total R ² (adjusted R ²)	.05 (.04)		.18 (.17)	

Note: DMW = meaning of work follower minus subjective meaning of work manager, that is, positive values indicate higher subjective meaning of work on the follower’s side, whereas negative values indicate higher subjective meaning of work on the manager’s side.
 p* < .05. *p* < .01. ****p* < .01.

emotional irritation, goal fulfillment) and followers (transformational leadership, subjective meaning of work, occupational self-efficacy, emotional irritation, work satisfaction). Using exploratory factor analyses, Harman’s one-factor tests revealed no single factors or general factors (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). When setting four factors for managers and five factors for followers, as scree-tests suggested, we found expected factor loadings (maximum likelihood method, Varimax rotation).

Additionally, we conducted confirmatory factor analyses using AMOS. For managers, a one-factor model ($\chi^2 = 1,042.91$, $df = 209$, $C_{min}/df = 4.99$, comparative fit index [CFI] = .31, root mean square error of approximation [RMSEA] = .17) did not fit well to the data, whereas a four-factor model ($\chi^2 = 361.79$, $df = 203$, $C_{min}/df = 1.78$, CFI = .87, RMSEA = .07) fitted better to the data ($\chi^2_{difference} = 681.12$, $df_{difference} = 6$, $p < .001$). For followers, a one-factor model ($\chi^2 = 4,803.73$, $df = 945$, $C_{min}/df = 5.08$, CFI = .49, RMSEA = .10) did not fit well to the data, whereas a five-factor model ($\chi^2 = 2,088.10$, $df = 935$, $C_{min}/df = 2.23$, CFI = .85, RMSEA = .06) fitted better to the data ($\chi^2_{difference} = 2,715.63$, $df_{difference} = 10$, $p < .001$). From these analyses, we concluded that the constructs in our study were not entirely distinct and that common source bias could be a threat to interpreting results. This should be kept in mind with regard to the interrelation between transformational leadership and work satisfaction in particular, as both variables were assessed from the followers’ perspective.

Figure 1
Moderated Regression on Team Goal Fulfillment With Transformational Leadership as Predictor and Difference in Meaning of Work as Moderating Variable



Note: m = manager; f = follower.

Hypotheses Testing

According to our first hypothesis, managers’ higher *subjective meaning of work* was expected to have positive effects on the interrelation between transformational leadership and outcomes. To test this hypothesis, two moderated regression analyses were performed. These analyses are summarized in Table 2.

Table 3
Moderated Regressions: Similarity in Occupational Self-Efficacy as Moderating Variable

Predictor	Outcome Variable: Team Goal Fulfillment (β)		Outcome Variable: Follower Work Satisfaction (β)	
	Step	Model	Step	Model
Step 1				
Gender match	.01	-.02	-.06	-.03
Difference in age	.15*	.15*	.03	-.03
ΔR^2	.02		.00	
Step 2				
Transformational leadership (TL)	.03	.03	.37***	.38***
Difference in self-efficacy (DSE)	-.28***	-.28***	.15**	.14*
ΔR^2	.08***		.15***	
Step 3				
TL \times DSE	.03	.03	-.08	-.08
ΔR^2	.00		.01	
Total R^2 (adjusted R^2)	.10 (.08)		.16 (.15)	

Note: DSE = self-efficacy follower minus self-efficacy manager, that is, positive values indicate higher self-efficacy on the follower's side, whereas negative values indicate higher self-efficacy on the manager's side.

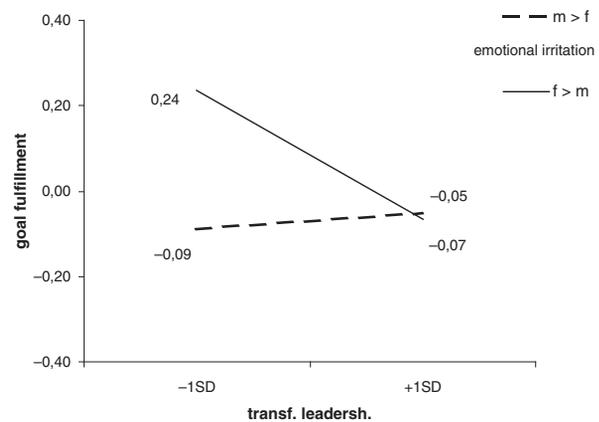
* $p < .05$. ** $p < .01$. *** $p < .01$.

Regarding team goal fulfillment, the interaction term Transformational Leadership \times Difference in Subjective Meaning of Work qualified as significant predictor ($\beta = -.16, p < .05, \Delta R^2 = .03$). As is illustrated in Figure 1, there was a negative interrelation between transformational leadership and team goal fulfillment when followers scored higher than their managers on subjective meaning of work. The interrelation between transformational leadership and team goal fulfillment was not significant when managers scored higher than their followers on subjective meaning of work. Unexpectedly, we did not find that transformational leadership was particularly effective when managers scored comparatively high on subjective meaning of work, but we found that transformational leadership was negatively interrelated with team goal fulfillment when followers scored comparatively high on subjective meaning of work.

Moreover, the difference in subjective meaning of work also had a direct positive effect on team goal fulfillment ($\beta = .12, p < .05$), indicating that goal fulfillment was higher when followers scored higher than their managers on subjective meaning of work.

Another moderated regression analysis was conducted for follower work satisfaction. The interaction term Transformational Leadership \times Difference in Subjective Meaning of Work was no significant predictor of follower work satisfaction ($\beta = -.08, p > .05, \Delta R^2 = .01$). However, this analysis also showed that transformational leadership positively impacted on follower work satisfaction ($\beta = .42, p < .001$) and that

Figure 2
Moderated Regression on Goal Fulfillment With Transformational Leadership as Predictor and Difference in Emotional Irritation as Moderating Variable



Note: m = manager; f = follower.

the difference in subjective meaning of work had no direct effect on follower work satisfaction ($\beta = -.03, p > .05$).

According to our second hypothesis, followers' higher *occupational self-efficacy* was expected to positively affect the interrelation between transformational leadership and outcomes. Another two moderated regression analyses were conducted to test this hypothesis. These analyses are summarized in Table 3.

Table 4
Moderated Regressions: Similarity in Emotional Irritation as Moderating Variable

Predictor	Outcome Variable: Team Goal Fulfillment (β)		Outcome Variable: Follower Work Satisfaction (β)	
	Step	Model	Step	Model
Step 1				
Gender match	.07	.05	-.04	-.04
Difference in age	.08	.05	.03	-.02
ΔR^2	.01		.00	
Step 2				
Transformational leadership (TL)	.01	.02	.41***	.41***
Difference in emotional irritation (DEI)	.16**	.15**	-.17***	-.18***
ΔR^2	.03*		.20***	
Step 3				
TL \times DEI	-.17**	-.17**	.06	.06
ΔR^2	.03*		.00	
Total R^2 (adjusted R^2)	.06 (.05)		.21 (.20)	

Note: DEI = emotional irritation follower minus emotional irritation manager, that is, positive values indicate higher emotional irritation on the follower's side, whereas negative values indicate higher emotional irritation on the manager's side.

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

Regarding team goal fulfillment, the interaction term Transformational Leadership \times Difference in Occupational Self-Efficacy did not qualify as significant predictor ($\beta = .03, p > .05, \Delta R^2 = .00$). However, this analysis also showed that difference in occupational self-efficacy negatively impacted on team goal fulfillment, indicating that team goal fulfillment was lower when followers scored higher than their leaders on occupational self-efficacy ($\beta = -.28, p < .001$).

Concerning follower work satisfaction, the interaction term Transformational Leadership \times Difference in Occupational Self-Efficacy was no significant predictor ($\beta = -.08, p > .05, \Delta R^2 = .01$). However, transformational leadership had a positive effect on follower work satisfaction ($\beta = .38, p < .001$), and the difference in occupational self-efficacy was also positively interrelated with follower work satisfaction ($\beta = .14, p < .05$). This indicated that followers were more satisfied with their work when they scored higher than their managers on occupational self-efficacy.

According to our last hypothesis, followers' higher *emotional irritation* was expected to negatively influence the interrelation between transformational leadership and outcomes. Again, two moderated regression analyses were conducted to test this hypothesis. These analyses are summarized in Table 4.

Concerning team goal fulfillment, the interaction term Transformational Leadership \times Difference in Emotional Irritation was a significant predictor ($\beta = -.17, p < .05, \Delta R^2 = .03$). As is illustrated in Figure 2,

there was a negative interrelation between transformational leadership and team goal fulfillment when followers scored higher than their managers on emotional irritation. Unexpectedly, there was only a slight positive interrelation between transformational leadership and team goal fulfillment when managers scored higher than their followers on emotional irritation.

Moreover, there was a positive interrelation between the difference in emotional irritation and team goal fulfillment ($\beta = .15, p < .01$), indicating that team goal fulfillment was higher when followers scored higher than their managers on emotional irritation.

Regarding follower work satisfaction, the interaction term Transformational Leadership \times Difference in Emotional Irritation was no significant predictor ($\beta = .06, p > .05, \Delta R^2 = .00$). Again, there was a positive interrelation between transformational leadership and follower work satisfaction ($\beta = .41, p < .001$). Moreover, the difference in irritation was negatively interrelated with follower work satisfaction ($\beta = -.18, p < .001$), indicating that follower work satisfaction was lower when followers scored higher than their managers on emotional irritation.

Exploratory Analyses

We expected the nature of dissimilarity (i.e., direction of difference) between managers and followers to affect the interrelation between transformational

Table 5
Moderated Regressions on Team Goal Fulfillment: Nature of Dissimilarity as Moderating Variable

Predictor	Similarity Indicator: Subjective Meaning of Work (β)		Similarity Indicator: Emotional Irritation (β)	
	Step	Model	Step	Model
Step 1				
Gender match	.05	.05	.12	.11
Difference in age	.02	.02	.11	.09
ΔR^2	.01		.03	
Step 2				
Transformational leadership (TL)	-.10	.10	.02	.19
Nature of dissimilarity (ND)	.19**	.18*	.13*	.12
ΔR^2	.04*		.02	
Step 3				
TL \times ND	-.28**	-.28**	-.22*	-.22*
ΔR^2	.04**		.02*	
Total R^2 (adjusted R^2)	.08 (.06)		.06 (.04)	

Note: Nature of dissimilarity: 0 = manager scoring higher than follower, 1 = follower scoring higher than manager (irrespective of the difference's degree).

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

leadership and outcomes. We used the difference score “follower minus manager” to examine these moderating effects. This had the advantage that the nature of dissimilarity could be analyzed without losing statistical power as would have been the case when comparing rough subsamples (e.g., “followers scoring higher than managers” versus “managers scoring higher than followers”).

However, we were interested in examining whether the detected effects were indeed due to the nature of dissimilarity and not to the degree of similarity between managers and followers. We conducted additional analyses for the two significant interaction terms that our analyses had revealed (i.e., Transformational Leadership \times Difference in Meaning of Work and Transformational Leadership \times Difference in Emotional Irritation as predictors of team goal fulfillment). Potential effects of nature of dissimilarity and degree of similarity were tested separately.

We followed a procedure that was used by Sosik and Megerian (1999) and originally developed by Atwater and Yammarino (1992) to examine *nature of dissimilarity* (irrespective of a difference's degree). Leadership dyads were categorized into two subsamples. Dyads where differences were one half standard deviation or more below the mean difference in the total sample were categorized as “managers scoring higher than followers” (dummy coding = 0), whereas dyads where differences were one half standard deviation or more above the mean difference were categorized

as “followers scoring higher than managers” (dummy coding = 1). Subsequently, the moderating effects of the nature of dissimilarity were examined using moderated regression analyses. These analyses are summarized in Table 5.

As expected, the nature of dissimilarity between followers and managers significantly affected the interrelation between transformational leadership and team goal fulfillment (subjective meaning of work: Transformational Leadership \times Nature of Dissimilarity: $\beta = -.28$, $p < .01$, $\Delta R^2 = .04$; emotional irritation: Transformational Leadership \times Nature of Dissimilarity: $\beta = -.22$, $p < .05$, $\Delta R^2 = .02$). In spite of the lower statistical power, the results of hypotheses testing were replicated.

To examine potential effects of the *degree of similarity* (irrespective of a difference's direction), we used absolute values of differences between followers and managers. Again, two moderated regression analyses were conducted. These analyses are summarized in Table 6.

These analyses revealed that the degree of similarity in subjective meaning of work was not crucial for the moderating effect that our hypotheses testing had revealed (Transformational Leadership \times Degree of Similarity: $\beta = -.02$, $p > .05$, $\Delta R^2 = .00$). Moreover, these analyses showed that the interrelation between transformational leadership and team goal fulfillment was moderated by the degree of difference in irritation (Transformational Leadership \times Degree of Similarity:

Table 6
Moderated Regressions on Team Goal Fulfillment: Degree of Similarity as Moderating Variable

Predictor	Similarity Indicator: Subjective Meaning of Work (β)		Similarity Indicator: Emotional Irritation (β)	
	Step	Model	Step	Model
Step 1				
Gender match	.06	.06	.07	.06
Difference in age	.07	.07	.08	.06
ΔR^2	.01		.01	
Step 2				
Transformational leadership (TL)	.01	.01	-.01	.01
Degree of similarity (DS)	-.06	-.06	-.16**	-.15**
ΔR^2	.00		.03**	
Step 3				
TL \times DS	-.02	-.02	.15**	.15**
ΔR^2	.00		.03**	
Total R^2 (adjusted R^2)	.01 (.00)		.06 (.05)	

Note: Degree of similarity: Absolute difference “follower minus manager” (irrespective of the difference’s direction).

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

$\beta = .15, p < .01, \Delta R^2 = .03$). There was a slightly positive interrelation between transformational leadership and team goal fulfillment in leadership dyads where the difference between manager and follower was comparatively high. In leadership dyads where this difference was comparatively low, there was a slightly negative interrelation. Obviously, dissimilarity in emotional irritation can positively affect the interrelation between transformational leadership and team goal fulfillment. However, the analysis did not account for the direction of difference (i.e., nature of dissimilarity) and thus could have masked more crucial interrelations and/or more informative findings.

Discussion

In this study, we examined the impact of deep-level similarity in leadership dyads on the effectiveness of transformational leadership. We expected the difference between managers and followers to be crucial for the interrelation between transformational leadership and outcomes (i.e., team goal fulfillment and follower work satisfaction). We assumed that the interrelation between transformational leadership and outcomes would be stronger when managers score higher than their followers on subjective meaning of work, when they score higher on emotional irritation, and when followers score higher than their managers on occupational self-efficacy. We aimed at identifying facilitating conditions for the effectiveness of transformational leadership.

However, we found that under certain conditions there was a negative interrelation between transformational leadership and team goal fulfillment. Our analyses showed that transformational leadership was interrelated with lower team goal fulfillment when followers scored higher than their managers on subjective meaning of work. We hypothesized that followers scoring high on subjective meaning of work might be less attentive to their managers’ behavior, and we expected a weaker—but not a negative—interrelation between transformational leadership and team goal fulfillment. However, our finding could also be interpreted in a different way. It appears that followers’ work values were crucial for team goal fulfillment when transformational leadership was low. Jung and Avolio (2000) found that similarity in work values mediated the effects of transformational leadership. Our analysis showed that similarity in work values also moderated the interrelation between transformational leadership and team goal fulfillment.

Though not in the focus of our investigation, we found that similarity in subjective meaning of work had direct effects on team goal fulfillment. When followers scored higher than their managers on subjective meaning of work, team goal fulfillment was generally higher.

Our analyses found that transformational leadership was also interrelated with lower team goal fulfillment when followers scored higher than their managers on emotional irritation. This finding indicates that emotionally irritated followers could be immune to

the communication of visions and aversive of stimulation. Again, our finding could also be interpreted differently. It seems that team goal fulfillment was achieved at the expense of followers (i.e., followers were more emotionally irritated than their managers) when transformational leadership was low. This also seems to be reflected in the additional finding that team goal fulfillment was generally higher—but follower work satisfaction was lower—when followers scored higher than their managers on emotional irritation.

Unexpectedly, differences between managers and followers in occupational self-efficacy did not affect the interrelation between transformational leadership and team goal fulfillment. However, we also found that differences in occupational self-efficacy had direct effects on outcomes. When followers scored higher than their managers, this had a generally negative impact on team goal fulfillment—but positive impact on follower work satisfaction.

Regarding follower work satisfaction, there were no moderating effects of deep-level similarity on transformational leadership's effectiveness at all. In sum, our hypotheses were partly supported. Our data showed that similarity in subjective meaning of work and emotional irritation seemed to be more important for the interrelation between transformational leadership and team goal fulfillment than similarity in occupational self-efficacy.

Additional findings regarding direct effects of deep-level similarity between managers and followers showed that team goal fulfillment was fostered by followers' comparatively high subjective meaning of work, by followers' comparatively high emotional irritation, and by managers' comparatively high occupational self-efficacy. Furthermore, follower work satisfaction was fostered by followers' comparatively high occupational self-efficacy and by followers' comparatively low emotional irritation.

Limitations and Conclusions

We acknowledge that our study has a number of limitations. We calculated similarity scores between leaders and followers on the basis of independent assessments (i.e., manager ratings and follower ratings) to avoid same source bias. Nevertheless, it would be interesting to examine whether *perceived* similarity shows comparable effects on the interrelation between transformational leadership and outcomes. A given similarity must in fact first be perceived before it can show effects. Moreover, we chose different indicators

of deep-level similarity, but we might not have chosen the ones providing the strongest effects. Similarity in personality traits and political attitudes, for example, could be useful in a further study.

Unexpectedly, the interrelation between transformational leadership and team goal fulfillment was not significant in our sample ($r = .04, p > .05$). Meta-analytic evidence exists that there is a substantial interrelation between transformational leadership and group performance (Judge & Piccolo, 2004). However, the same meta-analysis also showed that the correlation between transformational leadership and group performance was significantly weaker than the relationship between transformational leadership and follower work satisfaction. Common source bias may explain this finding. Furthermore, Judge and Piccolo (2004) argued that transformational leadership may, indeed, positively affect follower attitudes more than it fosters objective performance. In line with this consideration, Ross and Offermann (1997) reported non-significant correlations between transformational leadership and diverse objective performance measures (ranging between $-.10$ and $.21$).

Our findings might reflect perceived performance and not real performance as we assessed manager ratings of team goal fulfillment. The managers in our sample were accountable to their supervisors (i.e., they had to report about their teams' performance regularly). We thus assume that the managers knew their teams' level of goal fulfillment well. However, we cannot rule out the possibility that their ratings were affected by self-serving bias. Superior and follower ratings of a leader's performance have been shown to be most predictive of a leader's objective performance (Sala & Dwight, 2002). Therefore, it would be advantageous to use 360-degree feedback by combining ratings from different perspectives, such as supervisors, peers, and followers, instead of relying on managers' self-ratings alone (Craig & Hannum, 2006).

Furthermore, the evaluation of additional outcome variables would be helpful for creating a more complete picture. Deep-level similarity might show stronger effects when other outcome variables are under consideration (e.g., organizational commitment or satisfaction with supervisor).

The managers in our sample were situated at low levels of the organizational hierarchy. Because transformational leadership generally seems to be more effective at higher levels of hierarchy (Lowe et al., 1996), a comparison of similarity effects at lower versus higher levels of hierarchy could be rewarding.

Moreover, the impact of similarity on the effectiveness of other leadership behaviors could be interesting. We confined ourselves to transformational leadership. Further research is needed to examine whether our findings are also valid when other aspects of leadership are under research (e.g., transactional leadership, laissez-faire leadership, leader-member exchange). Furthermore, our study had a cross-sectional design. Longitudinal studies may be more promising because leadership is a dynamic process and subject to change over time.

Finally, the moderating effects of similarity in our sample were significant, but rather small ($\Delta R^2 = .03$, $p < .05$), and the regression models tested accounted for comparatively little variance in the data ($R^2 = .05$ and $.06$, respectively). Technically, significant interactions can occur without main effects of predictor variables, resulting in little variance explained by the overall model. Main effects are likely to be masked by interaction effects, especially when leadership behavior has opposite effects at different levels of the moderator variable (Villa et al., 2003). From a more practical perspective, small effects can have substantial consequences (e.g., Abelson, 1985; Rosenthal, 1990), which is particularly true in working life, where effects accumulate over individuals and situations (Eagly, Johannesen-Schmidt, & van Engen, 2003).

We conclude that both degree of difference as well as direction of difference should be considered when studying deep-level similarity in leadership dyads. Moreover, deep-level similarity may play more or less of a role depending on the outcome variables under research and depending on the indicators used in order to assess similarity.

Our study provided evidence that certain conditions should be avoided in order not to limit the effectiveness of transformational leadership. Managers should have a comparatively high subjective meaning of work, and their followers should not experience a comparatively high level of emotional irritation. Thus, human resources development programs should aim at increasing managers' work values and at reducing followers' emotional irritation to let transformational leadership display its positive effects. However, irrespective of transformational leadership, team goal fulfillment might be achieved at the expense of followers. There was an interrelation between team goal fulfillment and higher emotional irritation on the followers' side in our sample. This was true for managers scoring low on transformational leadership in particular. For high transformational managers, on

the contrary, burdening followers was not a feasible strategy. These managers should prepare the ground for transformational leadership to result in success. More precisely, managers should attend to their followers' daily working conditions and ensure that impaired well-being is avoided.

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