

A Double-edged Sword: Transformational Leadership and Individual Creativity

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Leadership research has focused on the positive effects of transformational and charismatic leadership but has neglected the negative side effects. Addressing this gap, we analysed followers' dependency on the leader as a relevant negative side effect in the relationship between transformational leadership and followers' creativity and developed an integrative framework on parallel positive and negative effects of transformational leadership. As expected, results from a study with 416 R&D employees showed that transformational leadership promotes followers' creativity but at the same time increases followers' dependency which in turn reduces their creativity. This negative indirect effect attenuates the positive influence of transformational leadership on followers' creativity.

Introduction

Transformational leadership has fundamentally shaped the last decades in leadership research and become quite popular in organizations, as indicated by the spreading use of transformational leadership trainings and education (Avolio, 1999; Bass and Riggio, 2006; Tourish, Craig and Amernic, 2010). Originally introduced by Burns (1978) and further developed by Bass (1985), the concept of transformational leadership has found unique acceptance in the literature on management (Antonakis and House, 2002; Lowe and Gardner, 2000). Several meta-analyses confirmed that transformational leadership can positively influence followers' performance and satisfaction across various organizational settings and different cultures (DeGroot, Kiker and Cross, 2000; Dum Dum, Lowe and Avolio, 2002; Lowe, Kroeck and Sivasubramaniam, 1996; Patterson *et al.*, 1995).

In particular, transformational leaders are expected to intellectually stimulate their followers

and thus may activate the followers' creativity potential (Avolio, 1994; Bass and Riggio, 2006; Conger and Kanungo, 1992). Accordingly, Cascio (1995, p. 930) pointed out: 'Today's networked, interdependent, culturally diverse organizations require transformational leadership . . . to transform followers to bring out their creativity, imagination, and best efforts'. Yet, empirical evidence is still mixed, including positive (Gong, Huang and Farh, 2009; Shin and Zhou, 2003), negative (Basu and Green, 1997) and non-significant direct relationships (Jaussi and Dionne, 2003; Wang and Rode, 2010) between transformational leadership and followers' creativity.

In order to contribute to the body of empirical research on transformational leadership and individual creativity and to help address the issue of a confusing pattern of results, we argue that negative side effects of transformational leadership such as raising followers' dependency may be of importance. Although some authors have touched upon the negative side effects of transformational and charismatic leadership (Beyer, 1999; Bryman, 1992; Yukl, 1999), most previous research has neglected this topic.

Addressing this research gap, this paper develops and empirically tests a theoretical framework

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which comprises both positive and negative effects of transformational leadership on followers' creativity. By analysing the 'black box' between transformational leadership and followers' creativity and integrating positive and negative effects of transformational leadership, we aim to provide a deeper understanding of how transformational leadership works and what risks it may imply.

More precisely, we argue that transformational leadership has two parallel effects. On the one hand, transformational leaders are assumed to influence followers' creativity positively, because they provide them with intellectual stimulation and serve as role models for unconventional behaviour and an original thinking style. On the other hand and particularly due to their charisma and their narcissistic tendencies, transformational leaders are also likely to promote followers' dependency which in turn may have a negative impact on followers' creativity. This negative side effect of transformational leadership via an increase in followers' dependency is expected to attenuate the positive influence of transformational leadership on followers' creativity.

Theoretical background

Transformational leadership theory

Based on Burns's (1978) seminal work, Bass (1985) transferred the distinction between transactional and transforming political leadership into the organizational context and developed the full range of leadership theory (see Bass and Avolio, 1994). According to this comprehensive theoretical framework, transformational leaders 'motivate people to do their best' (Avolio and Bass, 1988, p. 33) and make their followers perform beyond expectations by moving them to overcome their self-interest to strive for a higher purpose or vision (Bass, 1985; Bass and Riggio, 2006).

Bass (1985, 1998) characterized transformational leadership as comprising four components. *Idealized influence* (or *charisma*) can be defined as influence on ideals, values and 'bigger-than-life' issues and refers to role model behaviour of transformational leaders and their attributed extraordinary personal qualities. *Inspirational motivation* refers to leadership behaviour such as providing meaning to followers' work and articulating an

appealing or evocative vision for the team or the organization. *Intellectual stimulation* means that transformational leaders encourage followers to challenge existing assumptions, reframe problems and approach situations in new ways. *Individualized consideration* relates to coaching and mentoring behaviour of transformational leaders that take individual differences between followers into account.

Pointing to the similarity between transformational and charismatic leadership, several authors (e.g. den Hartog *et al.*, 1999; Shamir, House and Arthur, 1993) treated the two leadership concepts as synonyms. However, Bass and Riggio (2006, p. 5) explicitly noted: 'Transformational leadership has much in common with charismatic leadership, but charisma is only part of transformational leadership.' The present paper follows this argumentation but will use both transformational and charismatic leadership theories to explain the influence of transformational leadership on followers' creativity.

The positive impact of transformational leadership on followers' creativity

Transformational leadership differs from traditional leadership styles as it is more about emphasizing change and envisioning (Avolio, 1994; Conger and Kanungo, 1992) than about focusing on supervision, monitoring and control (Bryman, 1992). Hence, transformational leadership theory is regarded as potentially increasing creativity and innovation (García-Morales, Lloréns-Montes and Verdú-Jover, 2008; Waldman and Bass, 1991).

Creativity refers to 'the production of novel and useful ideas by an individual or small group of individuals working together' (Amabile, 1988, p. 126) and can be interpreted as the idea generation component of innovation (Rank, Pace and Frese, 2004). As innovation comprises both developing and implementing these ideas, creativity often is regarded as the first phase of the innovation process (Amabile, 1988; Anderson, de Dreu and Nijstad, 2004; Paulus, 2002; Pirola-Merlo and Mann, 2004).

Transformational leaders are assumed to promote followers' creativity via two mechanisms: a *cognitive* and a *motivational* mechanism (Gebert, 2002). On the *cognitive level*, transformational leadership mainly works through the intel-

lectual stimulation component (Waldman and Bass, 1991). Transformational leaders point out unconventional perspectives, break away from common patterns of thought and encourage their followers to critically appraise and reflect on existing assumptions and working methods (Bass, 1985). Furthermore, they encourage their subordinates to adopt an explorative and open mindset and to think 'out of the box' (Jung, Chow and Wu, 2003). Thereby, followers are assumed to rediscover their intellectual curiosity, use their imagination and generate original solutions and fresh and unique ideas (Avolio, Bass and Jung, 1999; Bass, 1985). Moreover, transformational leaders display unconventional and creative behaviour themselves and thus serve as a role model for creativity. According to social learning theory (Bandura, 1998), followers are likely to emulate a transformational leader and therefore engage in creative behaviour themselves.

The *motivational mechanism* relates to the visionary component of transformational leadership. Transformational leaders tend to act as 'change agents' by stressing the shortcomings of the status quo, highlighting aspects for improvement and envisioning attractive and desirable future states with which the followers can identify (Avolio, 1994). However, developing a promising vision for the future does not seem to be a sufficient condition to promote followers' creativity. Followers also have to perceive themselves as capable of altering the status quo. Transformational leaders have been shown to increase followers' self-efficacy (Pillai and Williams, 2004). By

inspiring followers with their passion, drive and self-assurance and by consistently communicating positive result expectancies, transformational leaders underpin followers' willingness to work on improving the status quo, even if this may involve difficulties and uncertainty (Conger and Kanungo, 1998; Kirkpatrick and Locke, 1996; Shamir, House and Arthur, 1993). Hence, under transformational leadership, followers are assumed to experience differences between a desired future state and a given situation less as a threat than as a challenge that raises their creativity and their effort.

H1: Transformational leadership is positively related to followers' creativity.

Mixed findings on transformational leadership and followers' creativity

However, although the theoretical argumentation outlined above points toward a positive relationship between transformational leadership and followers' creativity, the empirical evidence is mixed, including positive, negative and non-significant relationships between transformational leadership and followers' creative and innovative behaviour (see Table 1).

Using a qualitative study design, Howell and Higgins (1990) were the first to empirically examine the relationship between transformational leadership and creativity and innovation. Their results indicate a positive relationship as they found that so-called *champions* of techno-

Table 1. Empirical studies on the relationship between transformational leadership and followers' creativity

Author	Year of publication	Design	Sample	Dependent variable	Result
Howell and Higgins	1990	Qualitative field study	50 leaders	Not defined	Innovation champions display transformational leadership significantly more frequently than non-champions
Basu and Green	1997	Quantitative field study	225 leader-follower dyads	Followers' innovative behaviour (leader rating)	Significant negative relationship
Shin and Zhou	2003	Quantitative field study	290 leader-follower dyads	Followers' creativity (leader rating)	Significant positive relationship
Jaussi and Dionne	2003	Quantitative experiment	364 students	Followers' creativity (independent observer rating)	Non-significant direct relationship
Gong, Huang and Farh	2009	Quantitative field study	111 leaders and 200 employees	Followers' creativity (leader rating)	Significant positive relationship
Wang and Rode	2010	Quantitative field study	71 leaders and 212 employees	Followers' creativity (leader rating)	Non-significant direct relationship

logical innovation engage in transformational leadership behaviour more frequently than *non-champions*. Accordingly, in a quantitative study with 290 employees and their supervisors from 46 Korean firms, Shin and Zhou (2003) found that transformational leaders promoted their followers' creativity and that intrinsic motivation partially mediated this relationship. In agreement, Gong, Huang and Farh (2009) showed that transformational leadership was positively related to employee creativity in the insurance industry.

However, examining 225 leader-member dyads in a manufacturing plant, Basu and Green (1997) reported a negative relationship between transformational leadership and followers' innovative behaviour. To make the state of empirical evidence even more complex, Jaussi and Dionne (2003), who studied the influence of transformational leaders on creative performance in an experimental setting, could not find any significant relationship at all. And in a study of 55 organizations, Wang and Rode (2010) did not find a significant direct link between transformational leadership and employee creativity either.

That mixed pattern of findings cannot be explained by different conceptualizations and operationalizations of the creativity construct in the extant studies. For instance, Shin and Zhou (2003), Gong, Huang and Farh (2009) and Wang and Rode (2010) all referred to Amabile's (1988) definition of creativity and measured creativity via similar scales relating to the production of novel ideas by an individual. However, despite this commonality, Wang and Rode (2010) could not confirm the positive link between transformational leadership and creativity found in both of the other studies.

The negative impact of transformational leadership on followers' creativity

Shedding light on negative side effects of transformational leadership may help explain the mixed picture of empirical findings. Beyer (1999) and Yukl (1999) stressed that negative effects of transformational and charismatic leadership have hitherto been neglected and deserve further research. Addressing this demand, we argue that we will not fully understand the relationship between transformational leadership and followers' creativity

unless negative side effects of transformational leadership are considered. We focus on follower dependency as a negative side effect of transformational leadership, because previous literature referred to it as the most elementary side effect of high transformational and charismatic leadership (see Conger and Kanungo, 1998). Moreover, it assumedly plays a significant role in the transformational leadership-creativity link (Basu and Green, 1997). To explain their unexpected finding of a negative relationship between transformational leadership and follower innovativeness, Basu and Green (1997) referred to the mediating mechanism of follower dependency. They argued that transformational leaders may censor followers' critical and non-conformal viewpoints and ideas that differ from their own, thereby triggering follower dependency and limiting innovativeness.

According to Birtchnell (1988, p. 111), a *dependent person* 'receives from others a borrowed identity, guidance and direction, compensation for those areas in which he is incompetent and, most important of all, acceptance, approval and affirmation of worth'. Some charismatic leadership theories mention that this form of leadership may increase followers' dependency on their leader (Conger, 1990; Yukl, 1998).

Psychoanalytic theories explain the development of dependency by tracing it back to the parent-child relationship and by using the concepts of *transference* and *projection* (Kets de Vries, 1988). From the perspective of small children, parents seem to be omnipotent and perfect and thus make them feel protected and secure. As the feelings of absolute protection ebb during adolescence, the – often unconscious – desire remains to recreate this state. By providing guidance, developing a comprehensive and attractive vision for the future and forming strong role models, transformational and charismatic leaders may be able to recreate this state for their followers (Popper and Maysel, 2003). As they give focus for others and become creators of meaning, they can offer a sort of salvation to their followers (e.g. in the form of safety, identity or rituals) (Kets de Vries, 1988).

Transference is a universal phenomenon and refers to a false relationship or a 'modified version of an old relationship' (see Kets de Vries, 1988, p. 270). The follower perceives and responds to the leader as if he/she were a parent

or some other important figure from the past who is stronger and more capable (Conger and Kanungo, 1998; Kets de Vries and Miller, 1984; Steyrer, 1999). *Projection* is an attributional process through which leaders become the recipients (or 'basins') of their followers' ideals, desires and fantasies. Facing ambiguous and uncertain situations, followers tend to seek leaders who assume responsibility and turn chaos into order. In accepting this role, these leaders raise their followers' trust, identification and admiration and may become idols and role models for values, beliefs and behavioural norms (Gardner and Avolio, 1998; Kark, Shamir and Chen, 2003). Yukl (1999) further pointed out that these leaders – either unconsciously or consciously – can exploit followers by producing exceedingly high levels of emotional engagement and attachment. As a result, followers are likely to become dependent on their leader and his/her ideas, desires and visions.

Leaders' narcissistic tendencies may even aggravate this process (Hogan, Raskin and Fazzini, 1990; Kets de Vries, 1988). House and Howell (1992) showed that narcissism is closely related to certain characteristics of charismatic leaders. Narcissistic leaders tend to deny their negative personal characteristics, to overestimate their abilities and to reject critical comments on their ideas or their visions (Conger and Kanungo, 1998; Shamir, 1991).

In this context, it appears to be relevant that Bass and Steidlmeier (1999, p. 186) differentiate between authentic and pseudo-transformational leadership: 'It is the presence or absence of such a moral foundation of the leader as a moral agent that grounds the distinction between authentic versus pseudo-transformational leadership'. Similarly, Howell (1988) distinguishes between personalized and socialized charisma and Howell and Avolio (1992) differentiate between ethical and unethical leaders. All these dichotomous approaches share the idea that transformational and charismatic leaders who have moral intentions and elaborated value systems have to be clearly distinguished from leaders who mainly pursue their personal interests, who try to increase their own power and who do not respect their followers' needs and wishes but insist on obedience. Whereas some scholars argued that follower dependency may occur particularly under unethical forms of transformational and charismatic

leadership (Bass, 1998; Howell, 1988), de Vries, Roe and Taillieu (1999) pointed out that followers' dependency may also increase under authentic transformational leadership.

Reviewing the empirical research literature on transformational leadership, we surprisingly found only one study which dealt with the relationship between transformational leadership and dependency. Kark, Shamir and Chen (2003) found that transformational leadership increases followers' dependency and that followers' personal identification with the leader mediates this relationship. However, they did not investigate what effect follower dependency may have on outcome variables of organizational interest (e.g. performance and creativity) but called for further research in this field.

Addressing this call, we argue that follower dependency influences creativity negatively via both cognitive and motivational processes. First, followers' dependency may inhibit their creativity, because followers' strong admiration of and attachment to the leader may cause uncritical acceptance of the leader's ideas and unconditional cognitive allegiance (Basu and Green, 1997; Gebert, 2002). As a result, followers may be less likely to develop unconventional ideas themselves, to seek 'out-of-the-box' solutions and to break open established thinking patterns. Second, from a motivational perspective, followers' dependency may make them strongly seek the leader's recognition and approval (Conger, 1990). As a consequence, they are less likely to openly express doubts and critical thoughts which may alienate the leader. Further, the leader's absence (e.g. illness or vacation) can lead to feelings of disorientation among the followers (Shamir, 1991) and thereby negatively diminish their engagement, willingness to perform and creativity.

To sum up, we expect that the positive influence of transformational leadership on followers' creativity (see Hypothesis 1) will be attenuated by the negative side effect of transformational leadership – i.e. an increasing level of followers' dependency (Hypotheses 2, 3 and 4). Figure 1 illustrates our theoretical framework on the relationship between transformational leadership, followers' dependency and their creativity.

H2: Transformational leadership is positively related to follower dependency.

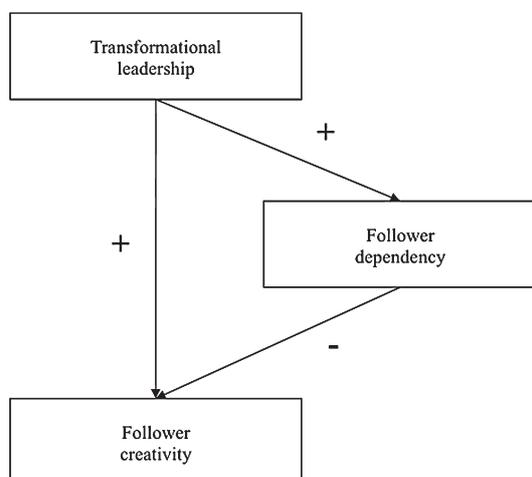


Figure 1. Theoretical model of the relationship between transformational leadership, followers' dependency and their creativity

H3: Follower dependency is negatively related to their creativity.

H4: Transformational leadership is negatively related to follower creativity via follower dependency.

Method

Research setting and procedure

We contacted 73 industrial enterprises engaged in R&D-oriented sectors and three research institutes in Germany, all with more than a thousand employees, and asked them to participate in the present study. Participation meant that some of the organization's R&D employees would have to answer a web-based survey. In most cases, we contacted the innovation vice-president of the organization, the chief officer of the R&D department or the head of the human resources department. The organizational contact persons received information about the study's objectives and – as an incentive to participate – were promised a presentation of the study's main findings, a company-specific data analysis, an anonymous benchmarking with organizations operating in a comparable sector and some recommendations for improving their creativity management upon completion of the study. Anonymous and strictly confidential data treatment was assured. Thirteen companies and one research institute agreed to

participate in the study, corresponding to a participation quota of 18.21%.

To launch the survey, we gave the organizational contact persons the link to the website and asked them to pass on the provided information to the respective employees and encourage them to participate. We asked the R&D employees about their perception of their team leader's transformational leadership, their own level of dependency on the leader and their individual creativity.

Sample

In total, 416 R&D employees from one research institute and 11 international companies, mainly based in Germany and working in the high-tech, medical engineering, electronics, semiconductor, software, chemistry or biology industries, participated in the study. The employees were primarily men (75.1%) between 24 and 58 years of age, the average age being 37 and average number of years with the company 8.7 years.

Measures

Transformational leadership. We measured transformational leadership by using a 20-item scale of Bass and Avolio's (1995) Multifactor Leadership Questionnaire (MLQ), translated into German by Felfe (2006). The MLQ, which is regarded as the most common measure of transformational leadership (Judge and Piccolo, 2004; Yukl, 1998), assesses the five sub-components of transformational leadership via four items each (i.e. idealized influence attributed, idealized influence behaviour, inspirational motivation, intellectual stimulation, individual consideration). The items were rated on a seven-point scale ranging from 1 (never) to 7 (almost always). A sample item was 'The leader gets me to look at problems from many different angles'.

To evaluate the factor structure of our measure of transformational leadership, we used confirmatory factor analyses with AMOS 18 to test a two-level model. Following Bass's (1985) understanding of transformational leadership, this model contained the sub-components of transformational leadership as five different factors at the first level and transformational leadership as an underlying single factor at the second level. The results showed support for the expected two-level

Table 2. Rotated principal components matrix for the measure of followers' dependency

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Item 1: I feel I can function well at work, irrespective of who is the direct supervisor	0.162	0.569	-0.209	0.019	0.030
Item 2: I find it difficult to function without my direct supervisor's guidance	0.112	0.763	0.194	-0.031	0.062
Item 3: I feel I can do my job better when my direct supervisor is around	0.093	0.746	0.091	0.168	-0.030
Item 4: If my direct supervisor were replaced, I would feel I do not have anyone to give me advice	0.564	0.443	0.197	0.032	0.074
Item 5: I don't question my direct supervisor's orders	0.208	-0.111	0.758	0.067	-0.012
Item 6: I accept my direct supervisor's viewpoints and do not challenge them	0.085	0.075	0.841	0.013	-0.014
Item 7: Before carrying out my direct supervisor's orders I think over if they are reasonable	-0.191	0.171	0.554	-0.113	0.161
Item 8: If my direct supervisor were to leave, my commitment to work would decline	0.904	0.139	0.006	0.061	0.164
Item 9: If my direct supervisor were to leave, my motivation would decline	0.922	0.143	0.024	0.035	0.099
Item 10: When my direct supervisor goes on vacation, my readiness to work overtime decreases	0.186	-0.042	0.081	0.098	0.848
Item 11: When my direct supervisor goes on vacation, my enthusiasm for work deteriorates	0.075	0.099	0.015	0.093	0.881
Item 12: At work it is important for me to receive praise from my direct supervisor	0.042	0.060	-0.015	0.902	0.045
Item 13: At work I strive to win my direct supervisor's recognition	0.049	0.081	-0.005	0.885	0.145

factor structure, $\chi^2/df = 3.596$, the confirmatory fit index (CFI) = 0.928 and the root-mean-square error of approximation (RMSEA) = 0.079. The reliabilities of the sub-scales for transformational leadership were satisfying, with Cronbach's alpha = 0.868 for idealized influence attributed, 0.835 for idealized influence behaviour, 0.872 for inspirational motivation, 0.867 for intellectual stimulation and 0.895 for individual consideration. The reliability analysis on the overall scale for transformational leadership showed good results as well (Cronbach's alpha = 0.954).

Followers' dependency. To measure followers' dependency, based on Kark, Shamir and Chen's (2003) measure of dependency, we further developed the scale in order to fully cover both the cognitive and the motivational aspects of the construct. Specifically, we selected six items from Kark, Shamir and Chen's (2003) scale that referred either to the cognitive (four items) or the motivational (two items) aspect and translated them into German via the back-translation method (see Brislin, 1986). Another seven items were generated by reviewing the social scientific leadership literature regarding statements on follower dependency (Bass and Steidlmeier, 1999; Beyer, 1999; Bryman, 1992; Conger, 1990, 1999; Conger and Kanungo, 1998; Gebert, 2002; Howell, 1988; Howell and Avolio, 1992; Kark and

Shamir, 2002; Yukl, 1999). Items were rated on a seven-point scale ranging from 1 (totally disagree) to 7 (totally agree).

To determine the factor structure of our measure of follower dependency, we first conducted a principal components analysis with varimax rotation. Based on the Kaiser-Guttman criterion (Guttman, 1954), we extracted five factors, explaining 68.583% of variance (see Table 2). Factor 1 relates to followers' dependency regarding their work motivation; factor 2 to followers' dependency on the leader's technical expertise and guidance; factor 3 to followers' uncritical acceptance of the leader's ideas and assignments; factor 4 to followers' dependency on the leader regarding their work engagement; and factor 5 to followers' striving for approval. Hence, factors 2 and 3 represent cognitive components of followers' dependency and factors 1, 4 and 5 relate to motivational components.

For further validation, we subsequently conducted a confirmatory factor analysis, testing if the five first-order factors loaded on one second-order factor – namely, overall followers' dependency on the leader. Then, we compared this hierarchical two-level model with two alternatives: first, a model comprising the cognitive and the motivational component of follower dependency as two separate factors; second, a simple one-factor model. As expected, the results clearly

Table 3. Tested models of followers' dependency

Model	χ^2	df	p	χ^2/df	RMSEA	CFI	TLI
Model 1: Hierarchical model with five first-order factors and one second-order factor	132.823	60	0.000	2.214	0.055	0.951	0.936
Model 2: Two-factor model	630.723	64	0.000	9.855	0.148	0.618	0.534
Model 3: One-factor model	743.282	65	0.000	11.435	0.160	0.543	0.451

TLI, Tucker–Lewis index.

supported the hierarchical model, $\chi^2/df = 2.214$, CFI = 0.951, RMSEA = 0.055 (see also Table 3). The reliability analysis of the scale on follower dependency also showed acceptable results (Cronbach's alpha = 0.705).

Followers' creativity. We measured followers' creativity via ten items from Zhou and George's (2001) scale of individual creativity. Designed to operationalize Amabile's (1988) definition of creativity which our paper builds on this scale has been used in previous work on transformational leadership and creativity (Shin and Zhou, 2003). We reworded the items to make them first-person statements and then translated them into German using the back-translation method (Brislin, 1986). A sample item was 'I suggest new ways to achieve goals or objectives'. Items were rated on a seven-point scale ranging from 1 (totally disagree) to 7 (totally agree). To test the validity of the adapted scale, we conducted a principal components analysis. As expected, only one factor was extracted, explaining 52.637% of variance. Cronbach's alpha was 0.894, indicating satisfying reliability.

Control variable. We assessed followers' individual team longevity as a control variable because it may affect creativity. With longer team membership, followers become increasingly accustomed to the team's mode of operation (the procedures, practices and norms established in the team) (West, 2003), tend to communicate less internally as well as externally and tend to dissociate themselves from independent external information sources (Katz, 1982). With time, they may become less likely to question the status quo and to engage in 'out of the box' thinking: the results are reduced levels of originality and creativity. In addition, team cohesion and conformity pressure may increase with rising team longevity and thereby further aggravate the described process of

uncritical acceptance and reduced cognitive flexibility (Mullen *et al.*, 1994). Previous research showed that tenure can negatively influence individual creativity (Chusmir and Koberg, 1986). We measured individual team longevity via the number of months the individual had been working on the respective team.

Analysis

Subsequently, we tested the model presented in Figure 1 using structural equation modelling, thereby also testing for discriminative validity between the constructs of the study. As is common in management and organizational behaviour research (e.g. Carlson, Kacmar and Williams, 2000), we used χ^2/df , the CFI and the RMSEA to evaluate model fit. The different foci of the three fit indices complement each other well. Whereas χ^2 and χ^2/df assess the extent to which the covariance matrix estimated by the hypothesized model reproduces the observed matrix, the CFI measures the model fit with regard to the worst and best fit attainable and also accounts for population parameters. The RMSEA indicates the amount of error present in the model (see Bentler, 1980, 1990; Kline, 1998).

As our preliminary data analyses showed that both transformational leadership and follower dependency were complex multidimensional constructs with a hierarchical structure, we decided to use the data-parcelling method to increase the stability of the model factor structure (Little *et al.*, 2002). Compared with item-level data, models based on parcelled data have several advantages: notably, they are more parsimonious, there is less correlation of residuals and there are fewer sources of sampling error (Little *et al.*, 2002; MacCallum *et al.*, 1999). To create the respective parcels for our structural equation model, we followed the recommendations of Kishton and

Widaman (1994) for multidimensional item sets and built the parcels by using the first-order factors of transformational leadership and follower dependency as grouping criteria (e.g. the first parcel of transformational leadership reflected the component of attributed idealized influence).

Results

Table 4 shows means, standard deviations and intercorrelations of the variables. Transformational leadership was significantly and positively correlated with both followers' dependency and followers' creativity. As expected, followers' dependency and followers' creativity showed significant and negative intercorrelation. Before we tested our hypotheses, we conducted a Harmon's single-factor test (Podsakoff and Organ, 1986) to address the issue of common method variance. This test revealed a poor model fit ($\chi^2/df = 9.409$, CFI = 0.605, RMSEA = 0.142), indicating that there is not one general method factor that explains the majority of covariance among the variables.

The value and the fit indices produced by an AMOS 18 estimation of the parcelled model suggested that the model fits the data well: the χ^2 value ($\chi^2 = 451.036$, $p < 0.01$) was significant; yet, this may be attributable to the large sample size. The χ^2/df value showed a satisfying value, being

below 3 ($\chi^2/df = 2.438$). The CFI fit index was substantially above the suggested 0.90 cutoff (CFI = 0.926) and the RMSEA indicated an acceptable level of error in the model (RMSEA = 0.059) (see Bentler, 1980, 1990; Kline, 1998). All the factor loadings of the transformational leadership parcels, the follower dependency parcels and the follower creativity items were statistically significant ($p < 0.05$). As validation, we also analysed the item-level model and still found acceptable fit values (with $\chi^2/df < 3$, CFI > 0.90 and RMSEA < 0.08).

Regarding the path loadings of our parcelled model (see Table 5), the results show a positive and significant direct effect of transformational leadership on followers' creativity ($\beta = 0.208$; $p < 0.01$) as well as a positive and significant total effect ($\beta = 0.117$, $p < 0.01$), thus supporting Hypothesis 1. As predicted, transformational leadership also had a positive and significant direct effect on follower dependency ($\beta = 0.324$; $p < 0.01$) which in turn had a negative and significant direct effect on follower creativity ($\beta = -0.282$; $p < 0.01$). Thus, Hypotheses 2 and 3 could also be confirmed. Followers' team longevity was negatively related to creativity ($\beta = -0.120$; $p < 0.05$). In order to test whether the difference between the positive direct and total effect of transformational leadership on individual creativity is significant, we conducted a Sobel test (Sobel, 1982). As expected, the results showed a significant test statistic (Sobel test statistic = 2.030;

Table 4. Descriptive statistics and intercorrelations

Variable	Mean	SD	1	2	3	4
1. Followers' team longevity	30.965	38.810	–			
2. Transformational leadership	6.051	1.039	0.010	–		
3. Followers' dependency	2.804	0.668	0.014	0.245**	–	
4. Followers' creativity	5.193	0.841	-0.102	0.109*	-0.170**	–

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Table 5. Structural equation modelling

Independent variable	Direct effect	Indirect effect	Total effect
<i>Dependent variable followers' dependency</i>			
Transformational leadership	0.324**		
<i>Dependent variable followers' creativity</i>			
Followers' dependency	-0.282***		
Transformational leadership	0.208**	-0.091	0.117*

** $p < 0.01$; * $p < 0.05$.

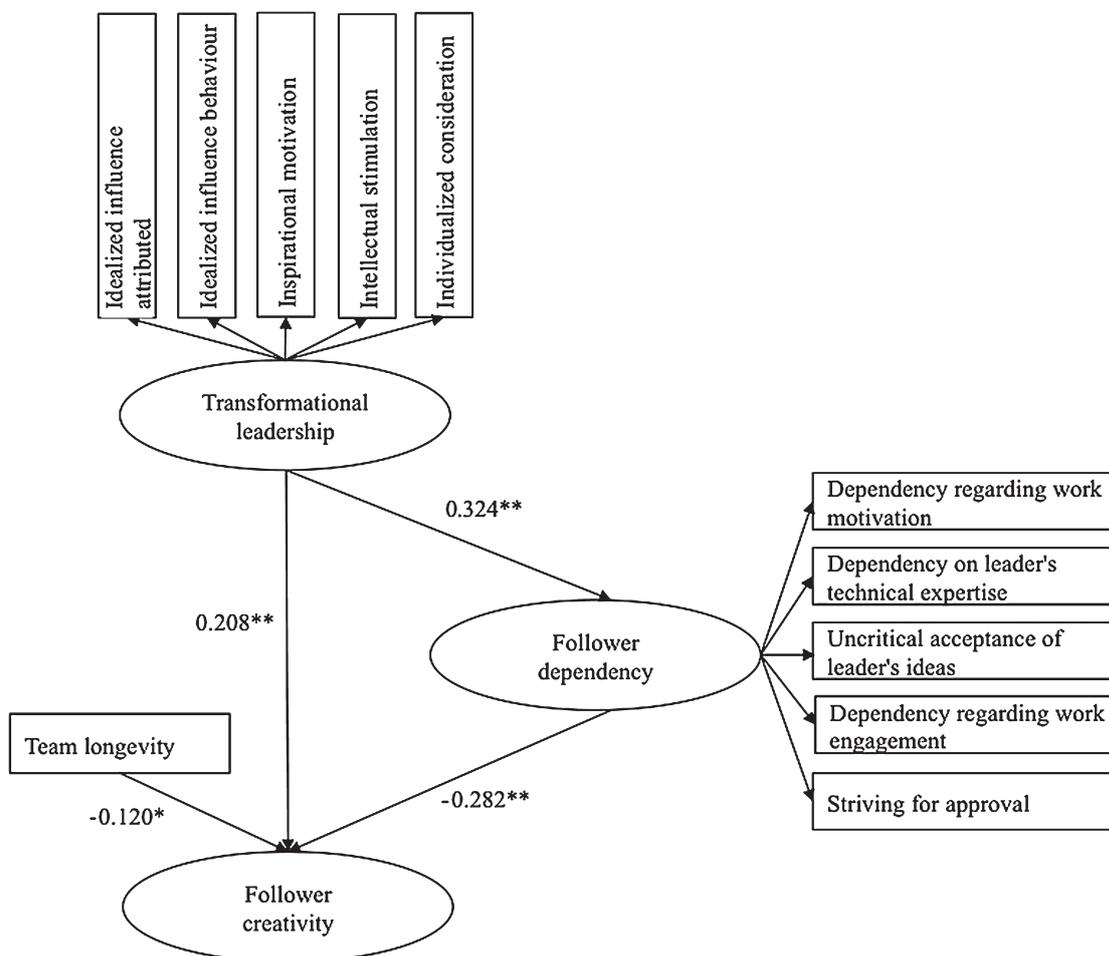


Figure 2. Results of structural equation modelling (illustrated at the parcel level)

$p < 0.05$), hence supporting Hypothesis 4. Figure 2 shows the results of the structural equation model at the parcel level.

Discussion

Although the leadership literature has repeatedly touched upon the negative side effects of charismatic and transformational leadership (e.g. Conger, 1990; Conger and Kanungo, 1998; Yukl, 1999), there has been little attempt to empirically analyse the subject matter. Addressing this research gap, the present study examined the relationship between transformational leadership and followers' creativity, taking into account follow-

ers' dependency on the leader as a negative side effect of transformational leadership. More precisely, in addition to promoting followers' creativity, transformational leadership was expected to simultaneously increase followers' dependency which in turn was assumed to be negatively related to followers' creativity. Using a sample of 416 R&D employees, we found support for our hypotheses. The results showed a positive link between transformational leadership and followers' creativity which was significantly reduced by transformational leadership's negative relationship via followers' dependency on the leader. The overall relationship between transformational leadership and followers' creativity still remained positive.

This positive relationship between transformational leadership and followers' creativity is consistent with the findings of Shin and Zhou (2003) and Gong, Huang and Farh (2009). Extending the current literature on transformational leadership and creativity, we analysed the relationship between transformational leadership and creativity and empirically identified follower dependency as a mediating mechanism in the transformational leadership–creativity link. Our findings thus empirically support Basu and Green's (1997) argumentation that transformational leadership is negatively associated with follower creativity via follower dependency.

Surprisingly, there is only one empirical study which addressed the negative side of transformational leadership and examined follower dependency. In a study in the banking sector, Kark, Shamir and Chen (2003) predicted and confirmed that transformational leadership increases followers' dependency. The present study showed that this relationship also holds true for the R&D sector and went one step further by analysing the relationship between followers' dependency and followers' creativity.

Some authors differentiated between an ethical and unethical form of transformational and charismatic leadership (Bass, 1998; Bass and Steidlmeier, 1999; Howell, 1988; Howell and Avolio, 1992) and argued that it is the unethical form of transformational and charismatic leadership that may trigger followers' dependency (Bass, 1998; Howell, 1988). However, as we assessed transformational leadership using the MLQ which was explicitly designed to measure the ethical form of transformational leadership – the so-called authentic transformational leadership (de Vries, Roe and Taillieu, 1999, 2002) – the present results suggest that followers' dependency also tends to increase under authentic transformational leadership.

Limitations

Despite these contributions, the present study has some limitations. First, followers' creativity was measured via self-assessment and thus may imply a self-serving bias (see Edwards, 1957). Unfortunately, it was not possible to obtain leader ratings on followers' creativity. Facing strict time constraints and high opportunity costs, the surveyed organizations were unwilling to allow managers

to rate the creativity of each follower. However, empirical research indicated considerable overlapping between self-assessment and leaders' assessment of different outcome variables (Fox and Dinur, 1988; Harris and Schaubroeck, 1988). Second, by using only followers' ratings, there is a risk of method variance. However, the results from Harmon's single-factor test indicated that common method effects are not likely to pose a pervasive problem in this study. Third, our sample was conducted in the R&D sector. The generalization of our findings may therefore be limited regarding the organizational background.

Implications for research

On the basis of the results of the present study, we suggest further research on negative side effects of transformational and charismatic leadership in order to obtain a more realistic picture and a more sophisticated understanding of how these leadership styles work and under what premises they are appropriate to apply. First, it seems to be of importance to specify the moderators in the relationship between transformational leadership and followers' dependency. Knowledge of the moderators would allow separating the negative side effects from the positive ones and thus make transformational leadership an even more powerful lever for stimulating creativity. In particular, followers' characteristics such as a need for leadership (de Vries, Roe and Taillieu, 2002) or the 'Big Five' personality traits (see Costa and McCrae, 1988) should be investigated as possible moderators. Furthermore, followers' individual differences regarding the affiliation motive and their associated need for attachment and belonging may also play a role in the relationship between transformational leadership and follower dependency (McClelland, 1987). Second, future research should analyse the consequences of followers' dependency on additional outcome variables such as followers' performance or satisfaction. Presumably, the effects of followers' dependency differ according to the outcome variable under study. Third, further research should identify and empirically examine other negative side effects of transformational leadership. For instance, Conger (1990) noted that transformational leaders may increase group think. Fourth, in light of the above limitations, we recommend replicating this study with manager ratings of

followers' creativity or with creativity tests, using employees of different nationalities and working in a wide range of sectors.

Managerial implications

Regarding organizational creativity management, our results indicate that organizations can facilitate their employees' creativity by enhancing managers' transformational leadership style. Previous research provided evidence that transformational leadership can be developed in focused training programmes (Barling, Weber and Kelloway, 1996; Dvir *et al.*, 2002). Hence, organizations placing strong emphasis on creativity and innovative outcomes should implement transformational leadership courses in which managers can learn how to effectively encourage, motivate and intellectually stimulate their followers. In particular, upper-level managers in the R&D sector are often recruited or promoted because of excellent technical expertise but may lack the specific leadership skills for successfully tapping the full creative potential of their followers and are therefore likely to greatly benefit from transformational leadership trainings.

However, our findings also indicate that transformational leadership may raise followers' dependency on the leader. From a normative-ethical perspective, transformational leadership thus seems to challenge the followers' personal development and their right of self-determination (Bandura, 2001). In addition, from a pragmatic perspective, follower dependency can reduce the overall possible level of individual creativity. Consequently, for both normative and pragmatic reasons, any transformational leadership training (e.g. the training programmes developed by Avolio, 1999) should not be indiscriminately implemented but should be supplemented with education programmes on the possible negative side effects of transformational leadership, particularly with reference to the risk of increased follower attachment and dependency.

Conclusion

The present study addresses an important topic that has been neglected in leadership research: i.e. the negative side of transformational leadership. We contribute to the current literature on leader-

ship and creativity (1) by examining the link between transformational leadership and followers' creativity in the R&D sector, (2) by studying follower dependency on the leader as a negative aspect of transformational leadership and (3) by revealing the complexity of parallel positive and negative effects of transformational leadership on followers' creativity.

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