

Mind the mindset! The interaction of proactive personality, transformational leadership and growth mindset for engagement at work

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Abstract

Purpose – The purpose of this paper is to analyze whether and how employees' proactive personality is related to work engagement. Drawing on job demands-resources theory, the study proposes that this relationship is moderated by a three-way interaction between proactive personality × transformational leadership × growth mindset.

Design/methodology/approach – The study is based on survey data from 259 employees of an internationally operating high-tech organization in the Netherlands.

Findings – In line with prior studies, support is found for positive significant relationships of proactive personality and transformational leadership with engagement. Additionally, transformational leadership is found to moderate the relationship between proactive personality and work engagement, but only when employees have a growth mindset.

Originality/value – The study advances the literature that investigates the proactive personality-engagement relationship. Specifically, this study is the first to examine a possible three-way interaction that may deepen the insights for how proactive personality, transformational leadership and growth mindset interact in their contribution to work engagement.

Keywords Mindset, Work engagement, Transformational leadership, Proactivity, Implicit theories

Paper type Research paper

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A draft version of this work was presented at the Xth International workshop on HRM, Cádiz, Spain, October 27-28, 2016. The authors would like to thank those who attended this presentation for their helpful comments. The authors are also grateful to three anonymous referees as well as the guest editorial team for constructive comments, indicating that they stimulate and nurture growth mindsets on the part of their authors.



Introduction

How to foster employees' work engagement is a question that has been studied intensively by academics and professionals alike. Engaged employees are considered to be a valuable addition to the organization, as they are committed to their organization's goals and values (Schaufeli and Bakker, 2004) and can contribute to their organization's success, for example, by in-role and extra-role performance (Demerouti and Cropanzano, 2010). Given the potential importance of employees' engagement in achieving organizational objectives, there has been an increasing academic interest to identify contextual and personal attributes that reinforce or restrict employees' engagement. Based on the assumptions of the job demands-resources (JDR) model, we investigate how job resources and personal resources play a role (Xanthopoulou *et al.*, 2007) and may interact in this process.

Among the personal attributes, proactive personality has been often connected to engagement (Dikkers *et al.*, 2010; Bakker *et al.*, 2012). It should be noted that the concepts of "proactivity" and "proactive personality" have different meanings that are represented by two different strands of literature (Tornau and Frese, 2013). First, proactivity can be seen as a personality trait that is considered to be an antecedent of engagement (Dikkers *et al.*, 2010; Bakker *et al.*, 2012). Second, proactivity can also be conceived as a behavioral attribute (state) that can affect engagement, but can also be the result of it (Parker and Griffin, 2011; Salanova and Schaufeli, 2008; Sonnentag, 2003). In the present study, we explicitly choose to consider proactivity as a trait, because we want to focus on the one-directional relationship from proactive personality as an antecedent toward engagement as an outcome. Thus, we align to the mere trait approach, following Dikkers *et al.* (2010), and argue that proactive personality is a relevant antecedent of engagement. Employees, who have a proactive personality, have a relatively stable tendency to intentionally change themselves and their organization in a meaningful way. They are masters of their destiny (Seibert *et al.*, 2001; Bateman and Crant, 1993). Individuals with a proactive personality are inclined to take personal initiative to have an impact on the world around them (Bakker *et al.*, 2012). This personal inclination is expected to be beneficial to being engaged at the job.

The question arises as to how organizations could best capitalize on, and further facilitate, the relationship between proactive personality and engagement. Over the last decades research into leadership styles has bloomed in this respect. In the context of the present study, we argue that "engaging leadership" is of particular interest (Schaufeli, 2015). Engaging leadership can be defined in terms of "respect for others and concern for their development and well-being; in the ability to unite different groups of stakeholders in developing a joint vision; in supporting a developmental culture; and in delegation of a kind that empowers and develops individuals' potential, coupled with the encouragement of questioning and of thinking which is constructively critical as well as strategic" (Alimo-Metcalfe *et al.*, 2008, p. 587). In fact, engaging leadership has much in common with the more traditionally used concept of transformational leadership of Bass and Avolio (1993), or "nearby" transformational leadership (Alban-Metcalfe and Alimo-Metcalfe, 2013). The literature review of Carasco-Saul *et al.* (2015) reveals that the most pervasive framework to study leadership and engagement is still "transformational leadership". A general conclusion from previous studies into the relation between transformational leadership and engagement seems to be that transformational leadership (as opposed to transactional leadership) enhances engagement, also resulting in better job performance, organizational knowledge creation (Carasco-Saul *et al.*, 2015) and service climate (Kopperud *et al.*, 2014).

For long, transformational leadership has been portrayed as a general panacea, although recently some critical studies have appeared. Van Knippenberg and Sitkin (2013) argued that it is time to forego the transformational leadership construct as a whole, in search for better defined and empirically distinct aspects of leadership. Furthermore, there are calls for studies that gain insights in the conditions under which transformational leadership may

not work (e.g. Alvesson and Kärreman, 2015; Blom and Alvesson, 2015). For example, Jiang *et al.* (2015) found that in a team setting the effectiveness of transformational leadership depends on team knowledge-sharing behavior and team interdependence, i.e., the nature of the situation in which leaders and employees affect each other.

In our study, we acknowledge the critical views on transformational leadership, but we adopt a different angle and analyze the conditions under which transformational leadership works or may not work in stimulating engagement. We argue that the mindset of the employee may determine whether transformational leadership moderates the proactivity-engagement relationship. Mindset of employees will in this study be captured by the concept of (growth) mindset of Dweck (2006). An employees' mindset is considered to vary on a continuum with growth mindset on the one end and fixed mindset on the other, i.e. mindset is considered to be unidimensional (Burnette *et al.*, 2013; Dweck, 2012). In the remainder of this study we will discuss mindsets in terms of "fixed" and "growth" for explanatory convenience, thereby following the customary phrasing in the extant mindset literature. Growth mindset, as opposed to fixed mindset is the implicit belief of individuals in the malleability of basic personal traits and characteristics, such as intelligence and ability (Dweck, 2006). Fixed mindset is the implicit belief that individuals' abilities are static and fixed and not amenable to change (Dweck, 2006).

Mindset theory is often applied in the context of learning and education (see e.g. Asbury *et al.*, 2015; Boyd, 2014). However, also for leaders and coaches the relevance of growth mindset has been confirmed (Chase, 2010; Heslin and Keating, 2017) as well as for consumers in determining consumer's preferences (Murphy and Dweck, 2016). It is plausible that growth mindset is also relevant for work engagement. Employees with a growth mindset are characterized by an eagerness to continuously develop themselves. We argue that these employees are likely to be highly engaged in their work, because it provides opportunities for personal growth. Moreover, we pose that employees with a growth mindset are open to transformational leadership, as transformational leadership is geared toward personal development of employees too. For employees with a growth mindset, transformational leadership will positively moderate the proactive personality-engagement relationship. In contrast, for employees with a fixed mindset, transformational leadership will not have an impact on the proactive personality-engagement relationship.

The aim of this study is to analyze whether and how proactive personality is related to work engagement, and whether this relationship is moderated by a three-way interaction between proactive personality \times transformational leadership \times growth mindset. The study is based on survey data from 259 employees of an internationally operating high-tech organization in the Netherlands. Our study contributes to the literature in several ways. First, we contribute to the limited literature that investigated the proactive personality-engagement relationship. Second, we contribute to the leadership literature by delineating the conditions that enhance the uptake of transformational leadership by employees. And third, we are the first to examine a possible three-way interaction that may deepen the insights for how these different variables add and interact in their contribution to engagement.

Theoretical background

Work engagement and proactive personality

The concept of work engagement has received extensive attention in academic literature, in articles and handbooks alike (see e.g. Bakker and Leiter, 2010). The concept refers to "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli *et al.*, 2002, p. 74). Research on engagement is often building on the JDR model (Schaufeli and Bakker, 2004). This model implies an important role for the personal resources that workers can use to optimize their possibilities to cope with the demands of the job. Personal resources are psychological aspects of the self that help the individual to successfully cope with, for example, job demands and attaining work goals

(see e.g. Xanthopoulou *et al.*, 2007). Personal resources include, amongst others, self-efficacy, resilience and hope (e.g. Van den Heuvel *et al.*, 2010). Unlike stable psychological characteristics, personal resources can vary over time, depending on other factors. In this respect, personal resources are mere psychological states (see e.g. Xanthopoulou *et al.*, 2009a). Hence, personal resources are important antecedents of work engagement, but may also have a stress buffering or an engagement boosting role. Many studies indeed confirm the positive effects of personal resources on work engagement (see e.g. Xanthopoulou *et al.*, 2009b).

Although Dikkers *et al.* (2010) argued that proactive personality can be conceived of as a personal resource as well, we like to nuance this point of view and follow the argumentation of Bakker *et al.* (2012) in that individuals with proactive personalities merely have a relatively stable tendency to create the opportunities that allow them to effectively manage their job and personal resources. These individuals create favorable conditions for themselves in their work (Crant, 2000; Bakker *et al.*, 2012). Proactive personality is a rather stable personality characteristic that refers to showing initiative, persevering to bring about meaningful change and identifying opportunities and acting upon them (Seibert *et al.*, 1999, 2001). Grant and Ashford (2008, p. 8) defined proactive personality as “anticipatory action that employees take to impact themselves and/or their environments.” This definition clearly reflects that proactive employees act in advance and anticipate a certain impact of their actions. Employees with a proactive personality are therefore likely to actively manage job demands and resources and nurture their personal and work goals. Hence, the following is hypothesized:

H1. Proactive personality is positively related to employees’ work engagement.

Transformational leadership and work engagement

In addition to personal resources and characteristics, different types of job resources and characteristics are known to be important to work engagement, such as autonomy (see e.g. Halbesleben, 2010) and leadership (Xu and Cooper-Thomas, 2011). Although leadership is considered important, leadership style has received far less attention in work engagement research (Tims *et al.*, 2011; Xu and Cooper-Thomas, 2011). Current literature lacks clear insights regarding a leader’s role in shaping the relationship between proactive personality and work engagement (Zhang *et al.*, 2012). To address this gap, we build on knowledge on “engaging leadership” and “nearby” transformational leadership models (see e.g. Alban-Metcalfe and Alimo-Metcalfe, 2013). These studies point out that it is valuable to distinguish between relevant competencies (what do leaders do) and engaging behaviors (how do leaders act) (Alban-Metcalfe and Alimo-Metcalfe, 2013; Alimo-Metcalfe *et al.*, 2008). The latter denotes the leadership style, which can be assessed with regard to the degree in which it is engaging. The focus of the present study is on how leaders act, i.e. their behavior and therefore their transformational leadership style.

Transformational leadership is most often differentiated from transactional leadership (Bass and Avolio, 1993). Whereas transactional leaders influence employees by setting goals, focusing and clarifying desired outcomes, transformational leaders aim to support and motivate employees. More specifically, transformational leadership aims to foster the development of employee capabilities and to achieve higher levels of employee commitment to organizational goals (Bass, 1985; Dvir *et al.*, 2002). Transformational leaders provide intellectual stimulation and inspirational motivation. They aim to tease out the best from employees (Den Hartog *et al.*, 1997; Den Hartog and Belschak, 2012).

Prior studies have shown that these transformational leadership behaviors have clear links with engagement constructs both across individuals (e.g. Vogelgesang *et al.*, 2013) and within individuals (see diary studies, e.g. Tims *et al.*, 2011). Studies indicate that transformational leadership promotes employees’ work motivation (Vogelgesang *et al.*, 2013; Schaufeli and Bakker, 2010). Support from the leader and the creation of an environment

focused on learning from mistakes are aspects of psychological safety which encourages engagement (Kahn, 1990; Breevaart *et al.*, 2014; Tims *et al.*, 2011). Intellectual stimulation has been shown to be positively related to engagement (Macey and Schneider, 2008) and organizational commitment (Erkutlu, 2008; Lee, 2005). In sum, these studies suggest that transformational leaders have a positive effect on employees' work engagement, because such leaders will contribute to a positive state of mind on part of the employee.

Recent studies raised doubt about the meaning and measurement of transformational leadership and its univocal positive contribution to engagement (Van Knippenberg and Sitkin, 2013; Alvesson and Kärreman, 2015; Blom and Alvesson, 2015). As the link between transformational leadership and work engagement can benefit from further study with respect to different samples and model designs (Zhu *et al.*, 2009), we first hypothesize the direct relationship between transformational leadership and work engagement:

H2. Transformational leadership is positively related to employees' work engagement.

Mindset and work engagement

Mindset research has its origin in studies on learning strategies of individuals in schools and colleges (Dweck, 2006; Yeager and Dweck, 2012; Hong *et al.*, 1999). The underlying idea is that individuals who endorse a relatively fixed mindset believe that personal traits and characteristics, such as intelligence and ability, are unchangeable and cannot be controlled or developed. Individuals with a growth mindset believe in the malleability of personal traits and characteristics (Murphy and Dweck, 2016). Education-oriented studies have shown that having a growth mindset is positively related to learning performance (Dweck, 2006; Asbury *et al.*, 2015; Boyd, 2014).

Prior research has shown that mindset has an impact on resilience (Yeager and Dweck, 2012). Individuals, who believe that they are not defined by their past behavior and can change and develop, are better able to respond to challenging situations. They perceive difficult situations and setbacks as opportunities to learn and grow. When individuals believe that they can alter basic traits by making an effort, they are motivated to give their best and ameliorate those traits (Yeager and Dweck, 2012). Mindsets are found to play a role in performance appraisals (Heslin *et al.*, 2005; Heslin and VandeWalle, 2011), employee coaching (Heslin *et al.*, 2006), leadership performance (Hoyt *et al.*, 2012), negotiation performance (Kray and Haselhuhn, 2007), work passion (Chen *et al.*, 2015) and job and life satisfaction (Burnette and Pollack, 2013).

Up till now, only a few studies have related "mindset" or "growth mindset" to engagement at work. In a conceptual study, Keating and Heslin (2015) referred to five mechanisms via which employees' mindset can induce employees' engagement, namely, via their enthusiasm for development, construal of effort, focus of attention, interpretation of setbacks and interpersonal interactions. We follow their reasoning by posing that it is likely that growth mindset is related to work engagement. Employees, who are eager to improve themselves, have positive beliefs of the value of hard work, and see setbacks as opportunities for learning, and are dedicated to their work. They are not discouraged when they make mistakes, as they see how these lead to personal improvement. Employees with a growth mindset are likely to enjoy their work, because daily challenges of work provide opportunities for personal growth. Therefore, we expect the following hypothesis:

H3. Growth mindset is positively related to employees' work engagement.

Interactive effects on work engagement

As direct positive effects on work engagement are expected of all three concepts (proactive personality, transformational leadership and growth mindset), the question is to what extent these contributions will interact. We argue that transformational leadership and the extent to

which employees hold a growth mindset may be reinforcing each other, as they are both geared toward personal development and realizing the full potential of employees. In the presence of transformational leadership, employees with a growth mindset will absorb guidance, feedback and inspiration of their leader. Employees with a growth mindset view effort as essential to improve. Growth mindset employees are determined to find ways to learn and improve and a transformational leader will fulfill their need. In contrast, employees with a fixed mindset prefer to avoid situations that they may not be able to handle. These employees are expected not to respond well to leaders who try to challenge them and bring them in unfamiliar positions in which they can gain experience. Transformational leadership can motivate employees to perform beyond their own expectations (Yukl, 1989). This implicitly means that the employees must be willing and able to expand their (self-) expectations as well. Employees who score low on growth mindset believe that they have certain abilities and may not have certain other abilities and this cannot be changed (Murphy and Dweck, 2016). Consequently, intellectual stimulation from transformational leaders is not appreciated and may – in line with the JDR model – even be perceived as a (job) stressor.

The combination of high transformational leadership and growth mindset employees is expected to positively moderate the relationship between proactive personality and engagement. Following the JDR model, we argue that proactive personality is a beneficial predisposition of individuals to be able to manage their resources well, which generates work engagement. As mindset differs from proactive personality in that it is not a stable characteristic of people, but a belief of individuals that can change over longer time periods (months or years), it can be developed into a “growth mindset” direction (Keating and Heslin (2015). We follow the study by Keating and Heslin (2015) in conceptualizing mindset as a personal resource in itself. Personal resources can come fully into bloom when the organizational context is right, i.e., when job resources are present, such as a nurturing leadership style. Transformational leadership targeted at growth mindset employees can be considered such a nurturing job resource, which allows employees with a proactive personality to be totally engaged in their work. It is likely that employees with a growth mindset who work for a transformational leader show a strong relationship between proactive personality and work engagement. We argue that it is also likely that employees who expose a fixed mindset do not match with respect to their implicit beliefs with their transformational leader, and hence show a weakened relationship between proactive personality and work engagement. This idea is in line with research by Plaks and Stecher (2007) that indicated that mindsets lead to certain expectations about personal performance and people do not deal well with situations in which their performance deviates from their expectations. In our case, we expect that employees may be averse to situations in which a leader exposes expectations about their capability to develop that do not match with their implicit beliefs (see also Plaks *et al.*, 2005, for a similar reasoning). Likewise, employees with a fixed mindset may experience a match in beliefs about their capacity to develop with a leader who is less transformational. In such instances, the relationship between proactive personality and engagement may be strengthened. In other words, employees with a fixed mindset may show a strengthened relationship between proactive personality and engagement when they experience less transformational leadership. Therefore, we expect the following three-way interaction:

- H4.* The relationship between proactive personality and work engagement is moderated by transformational leadership and mindset. Specifically, when transformational leadership is high, proactive personality relates more strongly to work engagement for individuals with a growth mindset than for those with a fixed mindset; when transformational leadership is low, proactive personality relates more strongly to work engagement for individuals with a fixed mindset than for those with a growth mindset.

In all, the research model is summarized in Figure 1.

Method

Sample and procedure

This study is based on survey data from 259 employees of a Dutch high-tech organization. High-tech work implies an innovative work environment, in which a proactive personality and growth mindset are valued characteristics for workers. Leadership styles differ though between leaders of different work units (Liu *et al.*, 2015). Therefore, the single case study character of this research is suitable for the purpose of our research objective.

Prior to the distribution of the questionnaire, two subject-matter experts and two professionals commented on the layout of the questionnaire and the clarity of survey items. Based on their suggestions, we slightly modified the design of the questionnaire to facilitate the readability of the items. We e-mailed the questionnaire to all 731 employees with a permanent contract. The questionnaire was accompanied by a cover letter stating the purpose of the study and assuring confidentiality and anonymity. We received 374 (51.2 percent) returned questionnaires. After deleting incomplete and/or inconsistent questionnaires, 259 remained (35.4 percent response rate). The sample consists of 30 (11.6 percent) female and 229 (88.4 percent) male respondents. This differs slightly from the 8 percent female to 92 percent male ratio in the company, but not so much that it gives rise to concern. The average age of the respondents is 49.0 years (SD = 9.7) and the average tenure is 18.5 years (SD = 13.8).

We choose to use self-reported measurements, which is not unusual in the management literature (Ng and Feldman, 2012). Studies have shown that measurements by managers turn out to give similar results as objective workplace behavior measurements (Ng and Feldman, 2012). Still, several procedural remedies were undertaken to reduce the risk on various biases (Podsakoff *et al.*, 2012). By guaranteeing respondents' anonymity and asking respondents to answer the questions as honestly as possible, respondents' evaluation apprehension as well as social desirability bias were being reduced (Podsakoff *et al.*, 2003). Furthermore, several items were reverse coded, which reduces the risk of respondents "guessing" the desirable answers (Malhotra *et al.*, 2006). Our research model contains three-way interactions, which ensures that respondents cannot easily combine related items and produce the correlation needed to generate a common method variance biased pattern in the responses (Chang *et al.*, 2010).

Measures

Multiple-item scales, closely following prior studies, were used to measure each construct. We provided verbal labels for the scales and avoided using bipolar numerical scale values (e.g. -2 to +2) in order to reduce acquiescence bias (Kulas *et al.*, 2008).

Work engagement. We used nine items from Schaufeli and Bakker (2003) (shortened version of the Utrecht Work Engagement Scale) to assess employees' work engagement on a scale ranging from 1 (never) to 5 (always). The reliability of the nine-item scale was high ($\alpha = 0.90$). An example item is "At my work, I feel bursting with energy."

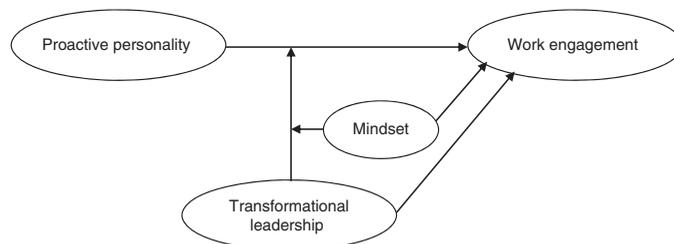


Figure 1.
Research model

Proactive personality was measured with the ten-item scale ($\alpha=0.79$) of Seibert *et al.* (1999) who created a shortened version of Bateman and Crant's (1993) proactive personality scale by using the ten items with the highest average factor loadings. The scale ranges from 1 (never) to 5 (always). An example item is "I am constantly on the lookout for new ways to improve my life."

Transformational leadership was measured with the 15-item scale ($\alpha = 0.92$) of Rafferty and Griffin (2004) ranging from 1 (totally disagree) to 5 (totally agree). An example item is "Acknowledges improvement in my quality of work." As the five sub-dimensions of transformational leadership (based on three items each) represent related constructs, we conducted a confirmatory factor analysis with IBM SPSS Amos version 21 to determine whether a one-factor model was warranted. The one-factor model showed an acceptable fit ($\chi^2/df = 1.696$; CFI = 0.979; GFI = 0.939; AFGI = 0.905; RMSEA = 0.052; PCLOSE = 0.400), and fitted the model better than the five-factor solution ($\chi^2/df = 2.844$; CFI = 0.942; GFI = 0.897; AFGI = 0.846; RMSEA = 0.085; PCLOSE = 0.000).

To evaluate mindset, participants responded to the three-item scale from Dweck's implicit theory of intelligence (Dweck *et al.*, 1995) with anchors ranging from 1 (totally disagree) to 5 (totally agree). Mindset studies often use a six-point scale to avoid a neutral midpoint (e.g. Burnette and Pollack, 2013). We opted for using the same number of anchors throughout the entire questionnaire to avoid confusion on the part of the respondent. The scale contains three items that measure fixed mindset (e.g. "You can learn new things, but you can't really change your basic intelligence"). We recoded the items such that higher scores indicate a growth oriented mindset and lower scores a fixed mindset. The internal consistency of the construct is demonstrated by $\alpha = 0.88$.

We controlled for tenure in the organization (measured by years of experience in the current job) as this reflects domain expertise (Oldham and Cummings, 1996). Following previous engagement research, we also controlled for age (measured in years) and gender (measured as a dichotomous variable coded as 1 for male and 2 for female). Furthermore, educational level was added as a possible control variable, measured in six categories ranging from 1 for basic education to 6 for PhD level.

Analytical strategy

Prior to testing the hypothesized relationships, we assessed whether the model is robust. Measures were mean centered to eliminate some of the effects of multicollinearity. To evaluate whether multicollinearity was an issue in our data, we calculated the variance inflation factor (VIF). All VIF values were below 10 (highest VIF 2.09). Therefore, we conclude that our measures do not suffer from multicollinearity.

We used linear multiple regression analysis to examine the hypothesized proactive personality-engagement relationship. In addition, we examined the hypothesized three-way interaction effect of proactive personality, transformational leadership and mindset.

Results

Table I reports the means, standard deviations, reliability estimates and correlations for all measures.

Table I indicates that the control variables are not structurally associated with any of the main variables. Because the final results do not change when the control variables are included in the regressions, we leave the control variables out of the analysis for the three-way interaction to increase the power of our test (cf. Becker, 2005). With linear multiple regression analyses we regressed work engagement on proactive personality, leadership style and mindset. We analyzed direct effects as well as interaction effects. The results are presented in Table II.

Table I.
Descriptive statistics,
reliability estimates
and correlations of all
study variables

Variables	Mean	SD	1	2	3	4	5	6	7
1. Work engagement	3.85	0.538	(0.90)						
2. Proactivity	3.68	0.395	0.346**	(0.79)					
3. Transformational leadership	3.27	0.624	0.340**	0.068	(0.92)				
4. Mindset	2.62	0.875	-0.037	-0.102	-0.019	(0.88)			
5. Age	48.99	9.676	0.014	-0.072	-0.017	0.065			
6. Tenure	18.49	13.810	0.020	-0.077	0.025	0.038	0.718**		
7. Education level	3.76	0.816	-0.096	0.169**	-0.074	-0.095	-0.209**	-0.234**	
8. Gender	1.12	0.321	-0.074	-0.024	-0.044	-0.004	-0.129*	-0.121	0.122

Notes: $n = 259$. The diagonal values in parentheses represent the alpha-reliability coefficients. * $p < 0.05$; ** $p < 0.01$

Table II.
Linear multiple
regression analyses on
work engagement

Independent variables	Model 1 Linear regression model, direct effects, parsimonious design ^a	Model 2 Linear regression model, full model ^b
<i>Direct effects</i>		
Proactive personality	0.324*** (0.000)	0.429*** (0.000)
Transformational leadership (TL)	0.318*** (0.000)	0.245*** (0.000)
Mindset	0.002 (0.975)	0.003 (0.934)
<i>Interactions</i>		
Proactive personality × TL		-0.187 (0.173)
Proactive personality × mindset		0.028 (0.829)
TL × mindset		0.067 (0.381)
Proactive personality × TL × mindset		-0.544* (0.019)
Intercept		3.86*** (0.000)
Adjusted R^2	0.211	0.278
F -value	24.031	10.0526
n	259	259

Notes: ^aStandardized coefficients, p -values between parentheses; ^bcentered variables, p -values between parentheses. * $p < 0.05$; *** $p < 0.001$

A model consisting only of control variables (i.e. age, tenure, educational level and gender) predicts only 0.3 percent of the variance in employees' work engagement. Adding independent variables (i.e. proactive personality, transformational leadership and mindset) significantly increases explanatory power to 21.1 percent. Leaving out control variables for a parsimonious design (Model 1) indicates no substantial change in the direct effects. The regression in Model 1 shows a positive direct effect of proactive personality on employees' work engagement ($\beta = 0.324$; $p = 0.000$), supporting $H1$. Model 1 also shows a direct positive effect of transformational leadership on employees' work engagement ($\beta = 0.318$; $p = 0.000$), supporting $H2$. It appears that both proactive personality and transformational leadership have a significant positive effect on work engagement. $H3$ proposed a direct positive effect of growth mindset on employees' work engagement. Model 1 shows that our data did not support this hypothesis ($\beta = 0.002$; $p = 0.975$). Apparently, the mindset of employees is not directly affecting their work engagement. Employees with a relatively fixed mindset can be as engaged as employees with a growth mindset.

The three-way interaction was added in Model 2. The regression analysis revealed a significant increase in R^2 to 27.8 percent, and a significant positive effect of the three-way

interaction ($\beta = -0.544$; $p = 0.019$), allowing us to use simple slope analysis to further investigate *H4*. Figure 2 shows the simple slopes for employees with low (one standard deviation below the mean) and high (one standard deviation above the mean) proactive personality as recommended by Cohen and Cohen (1983).

In line with *H4*, Figure 2 shows that when transformational leadership is high, proactive personality relates more strongly to work engagement for individuals with a growth mindset than for those with a fixed mindset (line 2 vs line 1). Similarly, when transformational leadership is low, proactive personality relates more strongly to work engagement for individuals with a fixed mindset than for those with a growth mindset (line 3 vs line 4). Slope difference tests (as recommended by Dawson and Richter, 2006) revealed significant differences between the slopes of line 1 and line 2 ($p = 0.005$); between line 1 and line 3 ($p = 0.000$); and between line 3 and line 4 ($p = 0.003$).

Discussion and conclusion

In this study, the role of proactive personality, transformational leadership and mindset of employees is examined for their relationship to work engagement. We find in our sample that the main relationships of proactive personality and transformational leadership with work engagement (*H1* and *H2*) are relevant of their own. However, growth mindset does not contribute to engagement *per se* (*H3*); as a personal resource (JDR model), it is only instrumental to the proactive personality-engagement relationship when it is stimulated by transformational leadership (Table III) (*H4*).

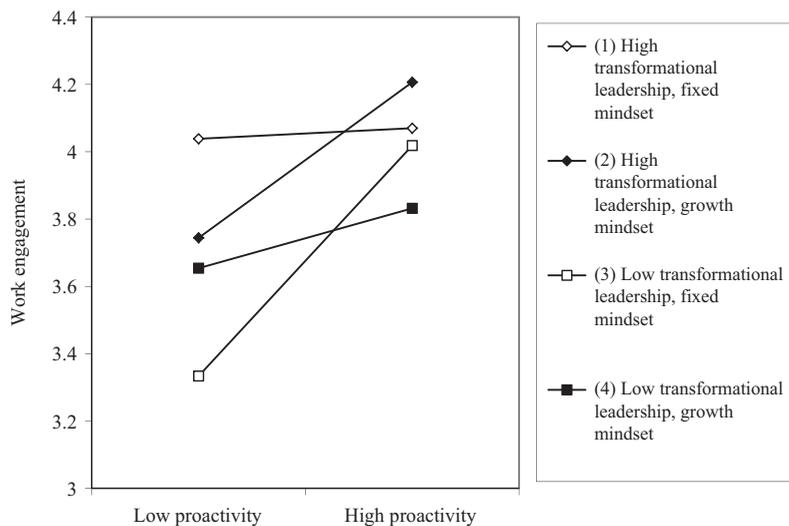


Figure 2. Three-way interaction of transformational leadership and mindset on the relation between proactive personality and work engagement

	Low transformational leadership	High transformational leadership
Fixed mindset	Proactive personality-engagement relationship is strengthened	No effect on the proactive personality-engagement relationship
Growth mindset	No effect on the proactive personality-engagement relationship	Proactive personality-engagement relationship is strengthened

Table III. Sweet spots moderating the proactive personality-engagement relationship

A three-way interaction qualifies the main effects: in situations of high transformational leadership, proactive personality relates positively to work engagement for individuals with a growth mindset (but not with a fixed mindset). Vice versa, in situations low on transformational leadership, proactive personality relates positively to work engagement for individuals with a fixed mindset (but not with a growth mindset). Our data suggest that there are two constellations of leadership and mindset that have a positive moderating effect on the proactive personality-engagement relationship (Table III), namely, constellations in which employees' implicit beliefs about their capacity to develop match with the leadership style that they perceive to receive. Notably, employees who hold a fixed mindset, and hence do not feel that they are able to develop in their job, may feel best when their leader exposes less of a developmental, i.e. transformational, style. The fact that they are not constantly challenged and coached for continuous improvement by a transformational leader may reduce anxiety and stimulate engagement (i.e. strengthen the proactive personality-engagement relationship). In other words, mindsets may create expectations about personal abilities and employees may be discomfited by situations in which a leader exposes different expectations. This is in line with findings of Plaks *et al.* (2005) who in an experimental setting found that it is important for people to experience the confirmation of their implicit beliefs, and people are averse to evidence of people acting inconsistently with these beliefs (Plaks *et al.*, 2005; Plaks and Stecher, 2007).

Based on our findings, we conclude that transformational leadership is ineffective for employees that endorse a fixed mindset. More specifically, transformational leadership has no effect on the proactive personality-engagement relationship for employees with a fixed mindset (slope 1 in Figure 2). However, the proactive personality-engagement relationship is strengthened for employees with a fixed mindset when they *do not* receive transformational leadership (slope 3 in Figure 2). In contrast, when employees with a growth mindset do not receive transformational leadership, then the proactive personality-engagement relationship is nearly unaffected (slope 4 in Figure 2). However, when employees with a growth mindset *do* receive transformational leadership, the proactive personality-engagement relationship is strengthened (slope 2 in Figure 2). These findings suggest that the mindset of the employee has to match to the leadership style. Hence, transformational leadership is not univocally suitable for every employee.

Theoretical contribution

Our findings confirm the separate main effects of proactive personality and transformational leadership on engagement that are already known from the JDR literature (see e.g. Dikkers *et al.*, 2010; Tims *et al.*, 2011). Moreover, our study provides new insights in interactions between organizational context variables, e.g. leadership style (job resource) and with employees' characteristics, e.g. proactive personality and mindset (personal resources). Specifically, we advance the literature on work engagement by developing a three-way interaction model. Extending prior studies on proactive personality and work engagement (Dikkers *et al.*, 2010; Bakker *et al.*, 2012), we hypothesized and found support for a three-way interaction of mindset with transformational leadership on the proactive personality-engagement relationship. In this way, our study sheds light on the question why transformational leadership does not *per se* strengthen the relationship between proactive personality and engagement (Den Hartog and Belschak, 2012; Blom and Alvesson, 2015). Specifically, we argue that a personal resource, i.e., the mindset of employees, interacts with leadership style in influencing the relationship between proactive personality and engagement. A growth mindset of workers makes a transformational leadership style more effective in strengthening the relation between proactive personality and engagement, whereas a fixed mindset makes transformational leadership ineffective.

We could not confirm a direct effect of growth mindset on engagement. It may be the case that having a growth mindset impedes engagement when more effort does not lead to the expected performance improvement (Keating and Heslin, 2015). People may be discouraged when a developmental trajectory deviates from the expected trajectory that was formed by their mindset (Plaks and Stecher, 2007). It may also be that mindset as such does not affect engagement, but needs the interaction with other factors (such as leadership in this case) to become meaningful. In this respect, in their conceptual study, Keating and Heslin (2015) proposed five mechanisms between mindset and engagement, namely, enthusiasm for development, positive beliefs about the value of effort, focus of attention, perspective on setbacks and interpersonal interactions. Future research is needed to explore whether mindset leads to engagement when one or more of these five mechanisms are modeled.

Our results are illustrative of the complex interrelatedness of both personal and job resources for engagement, herewith contributing to current insights on the explanatory value of personal attributes and resources in the JDR model (Tims *et al.*, 2011; Bakker *et al.*, 2012). Moreover, as the role of leaders in affecting employees' engagement has been largely overlooked in prior research (Zhang *et al.*, 2012; Xu and Cooper-Thomas, 2011), this knowledge advances the literature on the role of leadership for engagement as well.

Our study also adds to the growing literature about mindset (e.g. Dweck, 2006, Yeager and Dweck, 2012; Keating and Heslin, 2015) in relation to leadership (Chase, 2010; Avolio *et al.*, 2009; Heslin and Keating, 2017). Chase (2010) hinted toward the importance of mindset for leadership. A few studies have argued that transformational leaders need a growth mindset themselves (instead of a fixed mindset) (Chase, 2010; Avolio *et al.*, 2009). We find that growth mindset is also important for employees, as it interacts with a transformational leadership style and in that way has an impact on their work engagement.

Nevertheless, there are issues that need to be further addressed. For example, although leadership style contributes to engagement, the question remains by what mechanism this contribution is actually evolving. The literature suggests that leadership and leadership style can enhance engagement by affecting the motivation of employees (Xu and Cooper-Thomas, 2011; Den Hartog and Belschak, 2012). Leaders can inspire employees and improve morale (Xu and Cooper-Thomas, 2011) which in turn stimulates engagement. Self-determination theory poses that individuals are motivated to expose a certain behavior by drawing on various intrinsic and extrinsic sources of motivation (Ryan and Deci, 2000). Further research may want to investigate whether the mechanisms through which leadership style affects engagement works via motivation. For example, an encouraging leader could spark intrinsic motivation of employees (under certain conditions of leadership style and mindset of the employee), which then mediates the proactive personality-engagement relationship. In this study, we did not test for the possible role of employee motivation in this process. Neither did we include different personal resources that may play a role in the process. These and other limitations of the study are now further addressed, bringing forward some ideas for future research as well.

Limitations and ideas for future research

Our study is subject to several limitations. First, this study could only make well-educated inferences on the causal relationships, because of its cross-sectional design. Since literature is not conclusive on the direction of the effects, as well as on the presence of reciprocal relations (Xanthopoulou *et al.*, 2009a), further examination of the (reversed) causal relations between proactivity and engagement, and the role of both leadership style and mindset (with time-lagged designs), is warranted. This is also relevant for a better understanding of the non-significant impact of mindset on engagement as such; could it be the case that direct effects of growth mindset take more time? In this respect, the specific

context in which this study took place may also play a role. Employees in our sample have a type of job for which a growth mindset and proactive personality are desirable characteristics. And although our workers in high tech revealed sufficient variety in their mindset scores, these may differ between types of jobs. It is therefore important to further explore mindset in different work contexts, also controlling for job type. Another possible reason for the non-significant relationship between mindset and engagement may stem from the fact that we used the three-item implicit beliefs of intelligence scale (Dweck *et al.*, 1995), which may not be the most relevant mindset for employees' engagement. It may be better to investigate employees' mindset about a specific ability that is closely related to the work that they do. For example, Kray and Haselhuhn (2007) designed a mindset scale about negotiation ability or Hoyt *et al.* (2012) designed a mindset scale about leadership ability. Nevertheless, even with our "mindset about intelligence" scale, we were able to determine that mindset is a relevant concept with respect to the role of leadership in the proactivity-engagement relationship.

Second, we gathered data by using self-reports, which is not unusual in the management literature (Ng and Feldman, 2012), but may introduce common method bias. Future studies may employ objective data about employees' engagement or resort to external ratings to control for the risk for common method bias.

Third, in our study, we conceptualized mindset as relatively stable in the short run. However, studies found that mindsets can readily be altered and exhibit some degree of fluctuation over time (see e.g. Franiuk *et al.*, 2004). Therefore, it may be possible that experiencing transformational leadership instills employees with a growth mindset. Future research may want to examine whether the frequency of growth mindsets is related to working for a transformational leader, which may suggest that such leadership style encourages a growth mindset in employees.

Fourth, in this study, especially engagement has been the main outcome for consideration. Since burnout is considered a related, although not opposite, construct from work engagement (Hakanen *et al.*, 2006), it may also be of interest to examine the contribution of growth mindset to (lower) burnout level. In a similar vein, different personal resources – including proactive behavior as a state variable – could be added in future research designs, to further understand the interrelatedness between personal and job resources for engagement (and burnout).

Furthermore, as already put forward, the possible role of employee motivation would also be worthwhile to further examine, to better understand the mechanism by which leadership style affects engagement (and burnout). Different conditional variables, such as the role of different working contexts and organizational culture could be included as well.

Finally, as Tims *et al.* (2011) put it: "It is conceivable that the positive effect of transformational leadership does not stop after the enhancement of work engagement, but that it may also enhance employees' performance" (p. 130). In line with earlier studies that confirmed the link between transformational leadership and employees' performance (see e.g. Harter *et al.*, 2002; Howell and Avolio, 1993; McColl-Kennedy and Anderson, 2002; Yammarino and Bass, 1990), further research could also extend the outcomes toward performance indicators, such as ratings by supervisors and/or employees themselves, and more objective measures of performance, if available.

Managerial implications

The study reveals some interesting issues for managerial practice. Although the direction of causality is inferred from the assumption that proactive personality is a rather stable tendency (e.g. Dikkers *et al.*, 2010; Bakker *et al.*, 2012), our findings support a direct relationship between proactive personality and work engagement. Organizational

management is therefore advised to actively facilitate this rather innate proactive behavior of employees, for example, by providing room for individual initiative. However, our main managerial implication lies with the interplay between transformational leadership and mindset. With this study we wanted to investigate how employees with a proactive personality could be stimulated, i.e. become more engaged, by organizational factors. Organizations have a certain set of employees at a given moment in time. Over time this set may change, but to deal with the current situation it is crucial to gain insights on what organizations can do to tease the best out of their employees with proactive personality. What can organizations do to get them (and keep them) engaged in their work? As can be argued from the findings of this study, there should be attention for the match between mindset of the employee and the leadership style of the supervisor. Leaders that want to stimulate employees' work engagement could benefit from paying attention to employees' mindset (growth vs fixed) before deciding whether to employ a transformational leadership style. Therefore, leaders need to be aware of their employees' mindset, the meaning of it and the possible consequences of eventual mismatches between leadership style and employees' mindset. Mindsets are often not explicitly articulated by employees. Leaders may gauge the mindset of their employees for instance by noticing employees' fixed- or growth-oriented self-talk (Heslin and Keating, 2016, 2017). Furthermore, leaders may pay attention to whether employees demonstrate that they are aware of their developmental progress as well as opportunities for personal growth (Dweck, 2006). From the perspective of optimizing career development of all workers, including their leaders, there may also be opportunities for career coaching activities. Organizations can choose to offer (independent) internal or external coaching or mentoring for this purpose (see also Verbruggen *et al.*, 2007). After all, using a transformational leadership style among fixed mindset employees may not be the best way to go. Hence, leaders should mind the mindset of their followers.

Mindset can be considered to be a personal resource (see e.g. Schaufeli and Bakker, 2004), which can be nurtured and stimulated by organizations and leaders. Hence, leaders with a transformational leadership style could undertake actions to develop the mindset of employees into a "growth mindset" direction. This requires organizational efforts to enhance the conscious attention of both employees as well as management for the value of developing a growth mindset, and to learn how to nurture and facilitate growth mindset among employees. For this purpose, growth mindset cultivation interventions could be offered to employees and managers (Keating and Heslin, 2015; Heslin *et al.*, 2005). These interventions underscore the process that employees undertook to attain a certain performance, rather than focusing on employees' innate talent (Keating and Heslin, 2015). Furthermore, developmental human resource practices may be targeted at nurturing a growth mindset. For example, practices that target non-threatening peer feedback (e.g. peer-mentoring, multi-source feedback) and learning opportunities (e.g. educational programs, study leave and job rotation programs) may be particularly suitable for this purpose.

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