



Investigating intellect from a trait activation perspective: Identification of situational moderators for the correlation with work-related criteria



Patrick Mussel^{a,*}, Maik Spengler^b

^a University of Würzburg, Department of Psychology I, Marcusstr. 9-11, 97070 Würzburg, Germany

^b HR Diagnostics, Inc., Königstraße 20, 70173 Stuttgart, Germany

ARTICLE INFO

Article history:

Available online 31 January 2015

Keywords:

Trait activation theory
Personality
Intellect
Commitment
Job performance
Situational moderators
Interactionism

ABSTRACT

We applied trait activation theory to investigate the situational properties that moderate the correlation of intellect, a sub-dimension of the Big Five factor openness to experience, with work-related criteria. We collected data from a sample of 185 employees from diverse organizations and positions. Results from moderated hierarchical regression analyses revealed that perceived situational properties at the task level moderated the correlation between intellect and job performance. Additionally, correlations between intellect and organizational commitment were moderated at task and organizational levels. This study shows how trait activation theory can be utilized to investigate the situational properties moderating the correlation of personality variables with external criteria. Implications for applied purposes are discussed.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

Personality plays a crucial role in diverse areas, including organizational psychology (Barrick, Mount, & Judge, 2001). Correspondingly, personality assessments are frequently used in applied settings, like personnel selection, personnel development, placement, or career counseling. However, researchers have emphasized that the relevance of personality for the prediction of work-related outcomes varies depending on situational moderators (Tett & Christiansen, 2007). Correspondingly, researchers have suggested that situational properties that moderate the validity of personality traits should be considered and linked logically or theoretically to specific work-related criteria (Rothstein & Goffin, 2006). However, systematic research investigating the situational properties that moderate specific trait–behavior relations has just begun (e.g., Blickle et al., 2013).

Trait activation theory (Tett & Burnett, 2003) provides a promising theoretical framework specifying categories of situational properties that moderate the validity of personality traits. The theory builds upon the well-known principle that situations vary in their relevance to any given trait and that trait differences, therefore, will matter to different extents in different situations (Allport, 1937; Ekehammar, 1974; Murray, 1938; Tett &

Guterman, 2000; Woodworth, 1937). Tett and Burnett (2003) applied this perspective to trait–performance relations in the work-context, thereby specifying several ways through which situations can operate on the activation of personality traits. First, job demands are relevant to the expression of personality traits. Job demands refer to the tasks and duties required of a position, as usually described in a formal job description, as well as informal demands such as group norms, all of which are valued positively with regard to the goals of the organization. Second, distractors may activate personality traits. Compared to job demands, behavior resulting from the activation of distractors is valued negatively with regard to performance. Third, constraints can impact trait–performance relations. However, in contrast to demands and distractors, constraints diminish the activation of a trait, thereby reducing its relevance to subsequent behaviors.

According to trait activation theory, situational properties operate on three separate levels (i.e., the task level, the social level, and the organizational level). The task level includes all responsibilities and tasks defined by the work itself. Demands, distractors, and constraints that operate at the task level are typically observed in job descriptions and job analyses. The social level refers to working with others (e.g., coworkers, supervisors, subordinates, or customers). Finally, demands, distractors, and constraints might operate at the organizational level. This level is defined by organizational characteristics, such as structure, policies, technology, culture, participation, or decision processes.

* Corresponding author.

E-mail addresses: patrick.mussel@uni-wuerzburg.de (P. Mussel), spengler@hr-diagnostics.de (M. Spengler).

In the present study, we focus on the personality trait intellect, specifically the moderation of the intellect–performance relation due to situational properties. Intellect is a sub-dimension (or aspect) of the Big-Five factor openness to experience (DeYoung, Quilty, & Peterson, 2007) and can be described by terms like curious, quick, creative, intellectual, and clever. Based on a theoretical model of the construct intellect and corresponding empirical evidence, Mussel (2013) identified several dimensions that operate as indicators of intellect, including the facet openness to ideas (assessed by the NEO PI-R by Costa & McCrae, 1985), need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996), typical intellectual engagement (Goff & Ackerman, 1992), and epistemic curiosity (Berlyne, 1978; Litman, 2005; Litman & Mussel, 2013; Mussel, 2010).

More recently, intellect received growing attention as a valid predictor for organizational outcomes (Mussel, Winter, Gelléri & Schuler, 2011). From a theoretical perspective, individuals high in intellect are likely to obtain more job knowledge, seek complex and demanding tasks, produce creative outcomes, and successfully cope with changes in tasks, teams, and the organization. Interestingly, empirical evidence regarding the significance of indicators of intellect for work-related criteria has been rather mixed. Whereas some studies have revealed high criterion-related validity, others have found that intellect was uncorrelated with job or training performance. For example, Mussel (2012) found an uncorrected correlation of .34 between curiosity and supervisory ratings of job performance and reported incremental validities over and above several cognitive and non-cognitive variables. Likewise, significant correlations with training performance (Spengler & Mussel, 2012), self-rated job performance (Reio & Wiswell, 2000), and career success (Mussel, Spengler, Litman, & Schuler, 2012, Study 2) have been found for curiosity. Kearney, Gebert, and Voelpel (2009) report a positive relation between need for cognition and team performance (.24). However, not all evidence is that supportive. Indeed, Mussel et al. (2012, Study 1) found that an indicator of training performance—vocational school grades—was uncorrelated with a work-related curiosity scale. Moreover, the supervisory ratings of job performance in the Mussel et al. (2012) study were even slightly negatively correlated (−.04). Sojka and Deeter-Schmelz (2008) found need for cognition to significantly predict self-rated sales performance (.24), whereas objective sales criteria were only marginally predicted (.11). Spengler and Mussel (2012) reported a high correlation of curiosity with supervisory ratings of investigative (.25) but not entrepreneurial performance (−.04). Additionally, a meta-analysis by Woo, Chernyshenko, Stark and Conz (2014) estimated the true population correlation between three facets of intellect – intellectual efficiency, ingenuity and curiosity – and task performance between .11 and .18. For curiosity (but not for intellectual efficiency, ingenuity), artifacts explained less than 75% of the variability in correlations across studies, therefore suggesting the existence of moderators. Likewise, moderators likely exist for the prediction of contextual performance by curiosity, for the prediction of turnover by intellectual efficiency and for the prediction of training performance by intellectual efficiency and curiosity. In sum, given the large range of validity coefficients in the reported primary studies and the variability in correlations that cannot be attributed to sampling error determined in meta-analyses, it can be assumed that trait–performance relations are moderated by situational properties.¹

To determine situational properties that potentially moderate the relation of intellect with work-related criteria we developed items according to the categories posited by trait activation theory.

We generated numerous work situations that have the propensity to elicit or diminish behavioral expressions that in turn can be interpreted as indicators of the trait intellect and are potentially relevant for work-related outcomes. Each item was specified to represent a mechanism (i.e., job demand, distractor, or constraint) and a level (i.e., task, social, or organizational level) on which the situational property might operate. To develop these items, we referred to the definition of intellect, as outlined above, and to results from several empirical job analyses (such as critical incidents; Flanagan, 1954) for a variety of positions. We conclude the introduction with a summary of the main ideas that were incorporated to assess situational properties in the present study:

As a trait that contains only epistemic behaviors, a key concept in the literature on intellect is being curious, seeking new information, and learning new ideas (Berlyne, 1978; Kashdan et al., 2009; Litman, 2005). Accordingly, regarding work-related behavior, individuals with high levels of intellect are more likely to increase their job knowledge (e.g., Arnone, Grabowski, & Rynd, 1994; Reio & Wiswell, 2000), a major determinant of job performance (Campbell, McCloy, Oppler, & Sager, 1993; Dye, Reck, & McDaniel, 1993; Hunter, 1983). Even though virtually every job needs a certain amount of knowledge (Schmidt & Hunter, 2004), jobs that require high levels of knowledge, and especially those that require lifelong learning, can be expected to activate intellect more strongly and therefore allow for a stronger expression of this personality trait. Therefore, aspects such as lifelong learning were conceptualized as job demands at the task level.

Additionally, intellect is posited to facilitate adaptability, mainly due to the part of intellect associated with the learning of new skills, which help to master formerly unknown challenges, but also due to the enjoyment of thinking and problem solving (Griffin, Neal, & Parker, 2007). Therefore, having to implement tasks that change frequently is a job demand that is likely to be related to the expression of intellect. By contrast, having to implement highly structured routine tasks is an example of a situational property that can be assumed to diminish the expression of intellect and can therefore be assumed to operate as a constraint. In comparison to structured tasks, which simply do not allow for acting in a flexible or adaptive way, tasks that actually punish deviations from performing a task in a predefined way were conceptualized as distractors because behaviors typical of individuals with high levels of intellect would be related to low levels of performance on such tasks. Regarding the organizational level, organizations that are frequently involved in change processes are likely to demand the expression of intellect, whereas organizations that are characterized by tradition and consistency as well as organizations that have bureaucratic structures are likely to constrain the expression of intellect. Likewise, emphasizing aspects such as following rules and safety regulations can be expected to operate as distractors at the organizational level.

The aspect of the enjoyment of thinking and problem solving is also related to situational properties at the social level. As definitions of intellect do not include interpersonal aspects, direct hypotheses regarding the behavioral tendencies of individuals high or low on intellect with regard to their reactions to social stimuli are less straightforward. However, as individuals high on intellect enjoy thoroughly thinking about problems and theories, reading, comprehending new ideas, and reflecting on issues, it might be assumed that typical situations that admit the expression of such behaviors allow an individual to cut him- or herself off from daily business for a while, which includes, for example, working on one's own. Therefore, such situations were considered to be demands. By contrast, situations that involve ongoing communication or networking (e.g., direct service lines for customers) would operate as distractors, whereas situations that simply do not allow for thinking and problem solving, presumably due to high time

¹ Among others, such as differences in the construct validity of the predictors, or differences in the validity of the various criterion measures.

pressure (e.g., meetings that demand quick decisions), would operate as constraints on the expression of intellect.

Finally, we referred to the role of intellect in fostering creativity and innovations. Individuals high on intellect can be expected to be more likely to discover new problems (Schuler & Görlich, 2007) and have higher levels of knowledge for finding creative solutions for these problems compared to individuals low on intellect (Day, 1968; Dollinger, 2003; Maw & Maw, 1970). Creative outputs and innovations are either performance criteria by themselves (Hülshager, Anderson, & Salgado, 2009) or contribute to job performance in organizations that bank their success on new innovations, new products, and solutions in order to achieve an advantage over their competitors. Therefore, situations that foster or diminish creative outcomes are also likely to moderate the relation between intellect and performance criteria. As such, at the organizational level, a culture that fosters continued improvements of processes can be expected to operate as a job demand, whereas a culture of efficiency, rather than innovation, might operate as a distractor (Gilson, Mathieu, Shalley, & Ruddy, 2005). Likewise, task requirements such as performing efficiently under high time pressure rather than developing creative ideas can be expected to operate as distractors at the task level.

With the operationalization of trait activation theory in mind as outlined in the previous section, and the rationale for the moderating effect of perceived situational properties on the intellect–performance relation we deduce our hypotheses as follows:

The relation between intellect, on one hand, and work-related criteria, on the other, will be moderated by perceived situational properties at the task level, the social level, and the organizational level. Regarding the mechanisms underlying this moderating effect, we expect higher correlations in work situations that are characterized by high job demands compared to low job demands; more negative (or less positive) correlations in work situations that are characterized by low distractors compared to high distractors, and weaker correlations (less positive and possibly less negative) in work situations that are characterized by low constraints compared to high constraints. As described more detailed below, we obtained indicators for two work-related criteria, job performance and organizational commitment (Mathieu & Zajac, 1990; Schuler, 2004).

2. Method

2.1. Procedure and sample

As the objectives of the present study refer to the investigation of perceived situational moderators at the task, social, and organizational levels, it is essential to apply a study design that allows for sufficient variability in these variables, namely, the perceived situational properties. Therefore, it was necessary to recruit a sample from a wide variety of jobs and organizations. A total of 192 individuals participated voluntarily in the present research and received no further compensation. Participants were recruited by 16 students enrolled at a University in southern Germany as part of their university course work; these 16 students also served as peers (see below). Each student was given a link and 12 access codes, which he/she was supposed to give to an employed person he/she knew well enough regarding her/his professional accomplishments to provide performance ratings (e.g., concerning former failures, promotions, bonuses, pay rises, written warnings, dismissals, conversations with colleagues or supervisors of the target). Individuals who agreed to participate completed a web-based test battery (see below).

Even though students were instructed to recruit only individuals who were currently employed, seven individuals reported having no prior work experience or work experience up to only half

a year and were correspondingly excluded from further analyses. The remaining 185 participants were between 21 and 67 years old ($M = 35.1$, $SD = 11.7$); 51% were female. The sample covered a wide variety of positions, with 49% employed as blue- or white-collar workers, 9% as project manager, 18% in leadership positions, and 8% self-employed (others did not provide their current position). Regarding their education, 80% held a high-school diploma. 12% had graduated with an intermediate diploma or a Bachelor's degree and 38% had graduated with a diploma or master's degree. The jobs held by the participants were also rated by their peers regarding job zones from O*Net (Oswald, Campbell, McCloy, Rivkin, & Lewis, 1999); these job zones indicate the amount of work experience, education, and training a worker usually needs to perform in an occupation. It turned out that 3% possessed jobs that could be classified as job zone 1 (little or no preparation needed), 18% as job zone 2 (some preparation needed), 37% as job zone 3 (medium preparation needed), 33% as job zone 4 (considerable preparation needed), and 7% as job zone 5 (extensive preparation needed). Regarding Holland's (1997) hexagonal model, 17% of the jobs could be classified as realistic, 10% as investigative, 5% as artistic, 10% as social, 24% as enterprising, and 33% as conventional. In sum, the jobs investigated in the present research were quite heterogeneous, which allowed for sufficient variability regarding the job requirements at the task, social, and organizational levels. Given our sample size, the power for obtaining a small to medium incremental effect of $f^2 = .075$ for the interaction term is $\beta > .95$ (Faul, Erdfelder, Lang, & Buchner, 2007).

2.2. Measures

We obtained three widely used indicators of intellect which together assess this construct, as defined above, comprehensively (Mussel, 2013). First, need for cognition was assessed using the 18 item short version developed by Cacioppo, Petty and Kao (1984, German translation adapted from Bless, Wänke, Bohner, Fellhauer, & Schwarz, 1994). A sample item would be "I would prefer complex to simple problems". Items for this and all subsequent measures were rated on a 7-point Likert scale. The internal consistency was $\alpha = .86$. Second, we assessed epistemic curiosity using the Work-Related Curiosity Scale (WORCS, Mussel et al., 2012). The scale was developed specifically for research and application in organizations, using a frame-of-reference approach with work-related item content. An example item is "I carry on seeking information until I am able to understand complex issues". The Work-Related Curiosity Scale consists of 10 items rated on a 7-point Likert scale. The internal consistency was also $\alpha = .86$. The correlation between need for cognition and curiosity was .76. Third, we assessed typical intellectual engagement using the German version provided by Wilhelm, Schulze, Schmiedek, and Suß (2003). An example would be "I really enjoy a task that involves coming up with new solutions to problems". Across the 18 items, internal consistency was .78. Typical intellectual engagement correlated .62 and .61 with need for cognition and curiosity, respectively. The three indicators were subjected to exploratory factor analysis. Interpretation of the scree plot and Monte Carlo PCA for Parallel Analysis (Watkins, 2000) indicated a one-factor solution. Subsequently, the three indicators of intellect were standardized and aggregated.

We investigate two important work-related criteria: job performance and organizational commitment. Regarding job performance, we assessed three indicators. First, we obtained a job performance competence assessment using peer ratings. As noted above, each participant was recruited by a student who also served as peer rater. The students were colleagues, relatives, or acquaintances of the participants. They were instructed to only recruit individuals whom they knew well enough regarding their

professional accomplishments. On average, they knew each other for 9 years ($SD = 7.2$). According to Schuler, Funke, Moser, Donat, and Barthelme (1995) this is a sufficient time span to expect valid performance assessments. Two specifically developed task performance items were used to assess overall job performance and estimated job performance potential (see Brandstätter & Schuler, 2004, for details). Internal consistency across the two items was $\alpha = .86$. Second, current earnings were obtained by one self-report item with eight categories. On average, participants earned € 3200 gross per month ($SD = 1750$). Current earnings can be interpreted as an objective career success indicator. Third, participants were asked how many promotions they had received during their career. Because the number of promotions increases with professional experience ($r = .54$), years of professional experience were controlled for via regression to obtain a purer estimate of performance underlying the number of promotions. To obtain one broad indicator of job performance, the above-mentioned indicators were standardized and subsequently aggregated.

Our second criterion, organizational commitment, can be described as “affective or emotional attachment to the organization such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organization” (Allen & Meyer, 1990, p. 2). It includes aspects such as a strong belief in and acceptance of the values of the organization, a willingness to invest much effort, and a strong wish to remain in the organization (Mowday, Porter, & Steers, 1982). For the assessment of organizational commitment, the nine-item short version of the Organizational Commitment Scale (Porter & Smith, 1970; German translation by Maier, Rappensperger, Wittmann, & Rosenstiel, 1994; see also Maier & Woschée, 2002) was used. The scale is one-dimensional and assesses the core aspect of organizational commitment (i.e., affective commitment as conceived by Meyer & Allen, 1997). Items were rated on a 7-point Likert scale; the internal consistency was $\alpha = .88$.

To assess the perceived situational properties that were expected to moderate the relation between intellect and work-related criteria, 18 items were written (see Table 1). Each item was representative of one of the three mechanisms by which situational properties were expected to operate on personality expression (i.e., job demand, distractor, or constraint) as well as for each hierarchical level (i.e., task, social, or organizational). Therefore, each level and each mechanism was assessed by six items. The content of the items was based on the argument given above. Based on item analysis, one item had to be dropped due to inadequate item properties. The proposed two-dimensional structure of the items was assessed by confirmatory factor analysis, with each manifest variable loading on two latent variables, one for the level (task, social, organizational) and one for the mechanism (demand, distractor, constraint). Model fit was acceptable ($\chi^2 = 370$; $df = 129$; $\chi^2/df = 2.87$; GFI = .82; RMSEA = .10), and was superior compared to a model consisting of only latent variables for level ($\Delta\chi^2 = 81$; $df = 3$; $p \leq .001$) or mechanism ($\Delta\chi^2 = 81$; $df = 3$; $p \leq .001$). Because requirements as perceived by the subjects were considered more important than objective requirements, the 18-item questionnaire was administered to the subjects themselves rather than to a separate sample of job experts.

3. Results

Bivariate correlations of all study variables can be found in Table 2. As can be seen in column 1, perceived situational requirements at the task level were positively related to intellect. According to Schneider, Goldstein, and Smith (1995) and Schneider's (1987) attraction–selection–attrition theory, this correlation might indicate that individuals with high levels of trait intellect are likely

to be attracted by positions possessing requirements that correspond to this personality characteristic. Likewise, these requirements tend to be used to select appropriate job candidates, lead to higher job performance and, therefore, reduced turnover. Low correlations were found between requirements at the task, social, and organizational levels, indicating that participants were able to discriminate well between the requirements of each level. With regard to the mechanisms, high correlations were found only between distractors and constraints, indicating that in positions that are perceived to possess situational properties and that act as distractors (e.g., following rules and safety regulations), the probability is higher that these jobs are also perceived as possessing constraints (e.g., highly structured routine tasks).

With regard to work-related criteria, significant correlations were found between intellect and job performance, which is in line with recent research that has posited that the intellect sub-dimension of openness to experience is an important personality trait for work-related behavior (Griffin & Hesketh, 2004; Mussel, 2012). Interestingly, intellect also significantly predicted organizational commitment. As this is, to our knowledge, the first study to investigate the relation between intellect and organizational commitment, it might point to interesting applications (such as predicting future commitment during personnel selection).

The average correlation between the requirements of the positions and the two criteria was .03, indicating that these groups of variables are largely unrelated. This result was expected as no matter whether a specific job posits requirements regarding the trait intellect individuals can be more or less successful and committed to their jobs. Finally, job performance and organizational commitment were uncorrelated.

We used moderated hierarchical regression analyses to test our hypotheses. For each criterion, we ran six analyses to test the moderating effects of requirements at the task, social, and organizational levels and the mechanisms of job demands, distractors, and constraints, respectively. Each regression included two steps, with the measures of intellect and situational requirements included in Step 1 and the interaction (i.e., the product of the two standardized main independent variables) in Step 2.

Results regarding job performance can be found in Table 3. In line with our hypothesis, the correlation between intellect and job performance was moderated by requirements at the task level ($p < .05$). To investigate the nature of the significant interaction, separate regressions for high and low requirements at the task level are plotted in Fig. 1 (according to Aiken & West, 1991). A higher simple slope for high compared to low requirements indicated that the interaction was in the expected direction: The relationship between intellect and performance was stronger when requirements are high, compared to low. However, no moderating effect was observed at the social and the organizational level.

Regarding mechanisms moderating the intellect–performance relation, none of the three mechanisms significantly moderated the relation between intellect and job performance. This seemingly divergent result, compared to the significant effect for the levels, can be explained as each mechanism constitutes of items on the task, social, and organizational level, where non-significant effects on the latter two obviously disguised effects from the task level. Descriptively, effects were strongest for demands, for which the interaction term approached significance ($p = .07$).

Results for the criterion organizational commitment can be found in Table 4. We found that perceived situational properties at the task and organizational levels significantly moderated the correlation between intellect and organizational commitment, thereby confirming our hypothesis. However, a moderator effect was not found for perceived situational requirements at the social level. Regarding the mechanisms, a significant moderator effect was observed for all three mechanisms. Fig. 2 illustrates that all

Table 1
Items assessing the situational requirements regarding the construct intellect in German and English, along with standardized beta-weights for the interaction term when regressing job performance and organizational commitment on the personality trait intellect and the respective item.

	M	SD	job perfor. (stand. β)	Org. com. (stand. β)
<i>Task level</i>				
Erfordert permanente berufliche Weiterbildung. (JD)	4.97	1.47	.14	.18
Beinhaltet häufig wechselnde Aufgaben. (JD)	5.22	1.35	.07	.11
Erfordert ergebnisorientierte Umsetzung anstatt kreativer Ideen. (Di)	3.28	1.57	.05	.20
Bestraft eine Abweichung von der vorgegebenen Umsetzung einer Aufgabe. (Di)	4.67	1.54	.12	.22
Ist hoch strukturiert. (Co)	3.53	1.43	.04	.02
Beinhaltet viele Routineaufgaben. (Co)	3.93	1.47	.14	.17
<i>Social level</i>				
Erfordert viel Einzelarbeit. (JD)	4.94	1.50	.02	-.07
Erfolgt weitgehend isoliert von Kollegen. (JD)	2.73	1.71	.00	.17
Beinhaltet Kundenkontakt. (Di)	2.39	1.56	-.16	-.04
Erfordert ein großes Netzwerk. (Di)	3.23	1.60	-.03	-.05
Erfordert rasche Entscheidungen anstatt langer Diskussionen. (Co)	3.12	1.43	.06	.08
<i>Organizational level</i>				
Befindet sich im Wandel. (JD)	4.75	1.44	.07	-.04
Erwartet von seinen Mitarbeitern kontinuierliche Verbesserungen. (JD)	5.35	1.24	.09	.16
Legt Wert auf die Einhaltung von Regeln und Sicherheitsvorschriften. (Di)	2.42	1.31	-.06	.12
Zeichnet sich durch Effizienz anstatt durch Innovationskraft aus. (Di)	3.83	1.37	.04	.17
Weist bürokratische Strukturen auf. (Co)	3.23	1.56	.04	.10
Zeichnet sich durch Tradition und Konstanz aus. (Co)	3.19	1.48	-.06	.03

Note. Items were developed and administered in German. Items on the task and social level were instructed by the prefix "My task..."; items on the organizational level by "My organization...". Each item addresses both, a level (task, social, organizational) and a mechanism (Job Demand, JD; Distractor, Di; Constraint, Co). Overall scores for organizational level were computed by aggregating items across mechanism, and vice versa. The last two columns indicate the standardized β -weight for the interaction term when regressing job performance or organizational commitment on both, the personality trait intellect and the respective item assessing one situational requirement.

significant interactions were in the expected directions, i.e., a greater simple slope was found for high, compared to low requirements.

Finally, we repeated the above multiple regression analyses controlling for age. Therefore, standardized age of the participants was included in Step 1 of the analyses. We found no significant effect of age on any of the criteria. Additionally, all previously reported effects remained significant. Therefore, there is no indication that age influenced the effects reported above.

4. Discussion

After the long debate over the relative influence of traits and situations on behavioral variance (Ekehammar, 1974; Mischel, 1968, 1973) interactional psychology acknowledges that individuals can behave consistently across different situations and that situations can cause different people to behave similarly (Pervin, 1985). While it is generally accepted that behavior might be best understood when inter-individual differences, situations, and their interaction are considered, more detailed knowledge regarding the moderators of specific trait-behavior-relations is sparse. In the present study, we found trait activation theory (Tett & Burnett, 2003) to be a valuable framework for investigating perceived situational properties as moderating variables to more fully understand the circumstances and mechanisms underlying the prediction of important life outcomes, such as job performance due to personality variables. Trait activation theory has recently received considerable attention, and has, for example, been applied to the investigation of the construct validity of assessment centers (Lievens, Chasteen, Day, & Christiansen, 2006). However, it has rarely been used for its primary purpose (i.e., the investigation of personality in the workplace). Our study is one of the first to fully operationalize job demands, distractors, and constraints at three organizational levels. Thereby, we found trait activation theory to be highly useful to provide a thorough explanation of the circumstances underlying the personality-performance relation.

Our study focused on intellect, a highly researched personality trait (von Stumm & Ackerman, 2013) which has more recently received considerable attention with regards to the prediction of work-related criteria (Mussel, 2012). Among others, we focused on this trait because, as reviewed in the introduction, considerable variance in validity coefficients suggested that situational properties might moderate this relation. Nevertheless, expanding future research to the investigation of other traits is likely a promising endeavor.

We found it fruitful to differentiate perceived situational properties according to the categories postulated by trait activation theory. Indeed, we found considerable differences for different mechanisms and levels with regard to their ability to moderate the relation between intellect and work-related outcomes. In particular, for job performance, a significant moderator effect was found at the task level, but not at the social and organizational level. These results suggest that perceived situational properties at the task level are to be taken into account to explain and predict task-related performance and career success, whereas properties of the social and organization do not affect the relation. The non-significant effect on the social level might be explained by features of the trait intellect, a trait that has no social component in its definition, but rather focuses on attitudes and behavioral intentions concerning certain tasks (e.g., complex tasks, creative tasks, tasks that require learning, etc.). Therefore, significant interaction effects for situational properties on the social level might be expected for traits with which concern interpersonal engagement, such as agreeableness or the sociability/affiliation component of extraversion (Depue & Collins, 1999).

Table 2
Bivariate correlations of all study variables.

	Predictor				Mechanism			Criterion
	Intellect	Task	Social	Org.	Dem.	Dis.	Con.	Job perf.
<i>Level</i>								
Task level	.27							
Social level	-.04	.00						
Organizational level	.03	.29	.06					
<i>Mechanism</i>								
Demand	-.03	-.02	.08	-.12				
Distractor	-.16	.08	-.13	.07	-.16			
Constraint	-.08	.05	.00	.08	-.13	.51		
<i>Criteria</i>								
Job performance	.19	.15	-.10	.05	.12	-.08	.04	
Organizational commit.	.26	.05	-.17	.00	.14	.11	.07	.05

$N = 185$; org.: Organizational level; dem.: Demand; dis.: Distractor; con.: Constraint; job perf.: Job performance; correlations .15 and above are significant at $p < .05$.

Table 3
Results of the multiple regression of job performance on intellect and perceived situational requirements (PSR).

	Step 1						Step 2						
	β	R	R^2	Adj. R^2	F	p	β	R	R^2	Adj. R^2	ΔR^2	ΔF	Δp
<i>Level</i>													
Task level		.22	.05	.04	4.5	.01		.26	.07	.05	.02	4.1	.05
Intellect	.17*						.19*						
PSR	.10						.08						
Intellect-PSR							.15*						
<i>Social level</i>													
Intellect	.19**	.22	.05	.04	4.4	.01	.19**	.22	.05	.03	.00	0.1	.71
PSR	-.09						-.09						
Intellect-PSR							-.03						
<i>Organizat. level</i>													
Intellect	.19**	.20	.04	.03	3.8	.02	.21**	.21	.04	.03	.00	0.4	.51
PSR	.05						.04						
Intellect-PSR							.05						
<i>Mechanism</i>													
Job demand		.21	.04	.03	4.2	.02		.25	.06	.05	.02	3.4	.07
Intellect	.16*						.18*						
PSR	.09						.08						
Intellect-PSR							.13						
<i>Distractor</i>													
Intellect	.19**	.19	.04	.03	3.6	.03	.20**	.19	.04	.02	.00	0.0	.93
PSR	-.01						-.01						
Intellect-PSR							.01						
<i>Constraint</i>													
Intellect	.19**	.20	.04	.03	3.6	.03	.20**	.21	.04	.03	.01	1.0	.33
PSR	-.02						-.03						
Intellect-PSR							.07						

Note. $N = 185$; Step 1: Intellect, perceived situational requirements (PSR), $df_N = 2$, $df_D = 182$; Step 2: Intellect, perceived situational requirements, intellect-perceived situational requirements, $df_N = 1$, $df_D = 181$. In the first column of Step 1 and Step 2, we report unstandardized β -coefficients. The unstandardized β -coefficient for the interaction term Intellect-PSR gives the change in the correlation between the intellect and job performance with a 1-SD increase in the perceived situational requirements.

* $p < .05$.

** $p < .01$.

The non-significant interaction effect on the organizational level might be due to properties of the criterion. Job performance is generally evaluated with regards to the demands of a given job, rather than the general properties of the organization. In this regard, we found it interesting that for the relation between intellect and organizational commitment as criterion, the expected moderating effect of perceived situational properties was found at both, the task level and at the organizational level. Compared to job performance as criterion, organizational commitment refers to affective or emotional attachment to the organization as a whole (Allen & Meyer, 1990), rather than just the job, which might explain our divergent results for the two criteria.

Our results for organizational commitment indicate that individuals with high levels of intellect show stronger organizational commitment when properties of the task and the organization show corresponding requirements. Stated otherwise, the results suggest that incongruence between personality characteristics and perceived situational properties leads to reduced organizational commitment. Assuming that perceived situational properties are related to objective situational properties, this shows that congruence between personality characteristics on the one hand and task and organizational values and demands on the other hand make it more likely that the values of the organization will be adopted—probably because such an environment provides

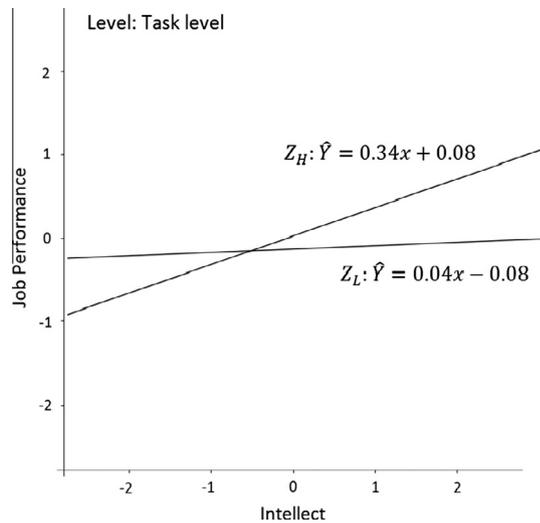


Fig. 1. Illustration of significant moderating effects of perceived situational properties on the relation between intellect and job performance. Regressing job performance on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) requirements at the task level.

opportunities for growth and achievement needs (Morris & Sherman, 1981).

Regarding mechanisms, we found job demands, constraints and distractors to moderate the relation between intellect and commitment. These results suggest that correlations are enhanced by specific demands that foster congruence and diminished due to requirements that create incongruence between intellect and

perceived situational properties. Contrary, none of the mechanisms reached significance for the criterion of job performance. As noted above, the latter might be explained by the structure of the situational measure. As each mechanism consisted of an equal number of items from the task, social, and organizational level, the non-significant influence of the situational properties on the latter two might have disguised effects from the task level. We refrained from computing moderated regression analyses from within the cells of the trait activation framework, as variables specifying the mechanisms within each level would constitute of only 2 items each. However, future research using a larger number of items to assess the situational properties within each cell might identify differences between the mechanisms within the task level and, potentially, confirm our descriptive results according to which the moderational effect was mainly due to demands, rather than distractors or constraints.

In this regard, we also note that the measure to assess the situational properties has been specifically developed for this study according to the recommendations by Tett and Burnett (2003). Therefore, future research using other operationalizations is needed to show that this pattern of results generalizes across different measures. A potentially valuable source for deducing situational properties is the recent model by Barrick, Mount, and Li (2013), the theory of purposeful work behavior, which posits that autonomy and task variety might be relevant properties with regards to the broader openness to experience domain.

An interesting avenue for future research refers to the identification of the processes underlying the interaction between personality and situational properties. For example, regarding the relation between intellect and organizational commitment, one might speculate that the congruence between personality characteristics

Table 4
Results of the multiple regression of the effects of organizational commitment on intellect and perceived situational requirements.

	Step 1						Step 2							
	β	R	R ²	Adj. R ²	F	p	β	R	R ²	Adj. R ²	ΔR^2	ΔF	Δp	
Level														
<i>Task level</i>														
Intellect	.26**	.26	.07	.06	6.4	.00	.29**	.35	.12	.11	.05	11.1	.00	
PSR	-.02						-.05							
Intellect-PSR							.24**							
<i>Social level</i>														
Intellect	.25**	.30	.09	.08	9.0	.00	.25**	.30	.09	.08	.00	0.4	.54	
PSR	-.16*						-.16*							
Intellect-PSR							.04							
<i>Organizat. level</i>														
Intellect	.26**	.26	.07	.06	6.4	.00	.31**	.31	.10	.08	.03	6.0	.02	
PSR	-.01						-.05							
Intellect-PSR							.18*							
Mechanism														
<i>Job demand</i>														
Intellect	.19**	.31	.10	.09	9.6	.00	.20**	.34	.12	.10	.02	4.7	.03	
PSR	.19*						.18*							
Intellect-PSR							.15*							
<i>Distractor</i>														
Intellect	.25**	.36	.13	.12	13.3	.00	.27**	.39	.16	.14	.03	6.1	.01	
PSR	-.25**						-.25**							
Intellect-PSR							.17*							
<i>Constraint</i>														
Intellect	.25**	.27	.07	.06	7.0	.00	.26**	.31	.09	.08	.02	4.6	.03	
PSR	-.08						-.11							
Intellect-PSR							.15*							

Note. N = 185; Step 1: Intellect, perceived situational requirements, $df_N = 2$, $df_D = 182$; Step 2: Intellect, perceived situational requirements, intellect-perceived situational requirements, $df_N = 1$, $df_D = 181$. In the first column of Step 1 and Step 2, we report unstandardized β -coefficients. The unstandardized β -coefficient for the interaction term Intellect-PSR gives the change in the correlation between the intellect and commitment with a 1-SD increase in the perceived situational requirements.

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

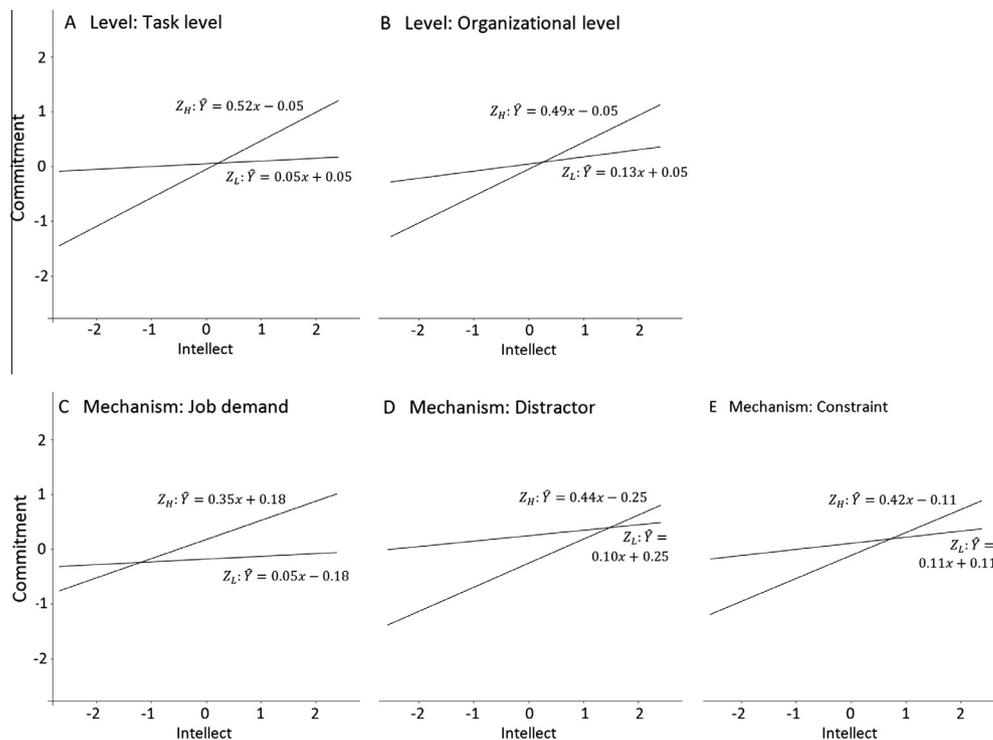


Fig. 2. Illustration of the significant moderating effects of perceived situational properties on the relation between intellect and commitment. (A) Regressing commitment on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) requirements at the task level. (B) Regressing commitment on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) requirements at the organizational level. (C) Regressing commitment on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) job demands. (D). Regressing commitment on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) requirements regarding the mechanism distractor (i.e., low requirements regarding the mechanism distractor means that there are distractors that should lead to low correlations between intellect and commitment). (E) Regressing commitment on intellect, separately for low (Z_L ; 1 SD below the mean) and high (Z_H , 1 SD above the mean) requirements regarding the mechanism constraint (i.e., low requirements regarding the mechanism constraint means that there are constraints that should lead to low correlations between intellect and commitment).

and situational properties at the task level is not independent from congruence at the organizational level but that they may interact or influence each other (Mathieu & Farr, 1991). As such, the perception of requirements at the task level might influence perceptions of organizational properties; therefore, individuals perceiving congruence (or incongruence) between their personality characteristics and task-related requirements might also believe that their personality characteristics match (or do not match) the characteristics of the organization as a whole. Furthermore, the effect of situational requirements at the task level might be mediated by occupational commitment. Therefore, congruence between personality characteristics and task requirements would lead to occupational commitment, which consequently leads to organizational commitment (see Holland, 1997; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002).

We note several implications of the present study for applied purposes. First, the results of the present study suggest that measures of intellect, such as the Need for Cognition Scale or the Work-Related Curiosity Scale, can contribute to the prediction of performance and commitment and might, therefore, be successfully utilized in applied settings such as personnel selection. Of course, more research has to be done in this area, as, for example, the influence of social desirability on the intellect-performance relationship is not yet understood.

Additionally, our results give advice under which circumstances intellect is most likely to contribute to personality assessments in applied settings, as we identified several situational requirements that moderated the impact of intellect in the workplace. Examples include the task requirement of permanent work-related learning

and advanced training, jobs characterized by working on one's own and a lack of routine tasks, jobs requiring creativity, and jobs not punishing deviations from performing a task in a predefined way. At the organizational level, innovation-oriented, compared to efficacy-oriented organizations and an organizational culture that fosters continued improvements of processes moderated the impact of intellect on work-related outputs. From an applied perspective, the attributes listed above could guide the decision of whether measures of intellect are utilized in personnel selection and how strongly these measures should be weighted in a selection test battery. Results might also be used for internal job placement; thereby, according to the personality attributes of employees and the requirements of different positions, employees could be allocated to positions that maximize their performance and organizational commitment. Regarding these implications, it is important to stress again that we investigated perceived situational moderators. Therefore, implications regarding objective situational properties assume that these are related to perceived situational properties and, ultimately, moderate the relation between intellect and work-related criteria in a similar manner.

Finally, we note some limitations of the present study. Our design imposed restrictions regarding the operationalization of the criterion variables. As outlined above, the present design was chosen in order to ensure high variability of the moderator variable (i.e., the specific requirements of the position at the task, social, and organizational levels). Therefore, subjects were recruited from diverse jobs and organizations. This design did not permit the assessment of the most common indicator of job performance, i.e., supervisory ratings, as they would not have been comparable

across jobs. To overcome this limitation, a combination of objective performance indicators (promotions), career success indicators (salary) and peer ratings of job performance was chosen as a criterion measure. Therefore, our performance variable computed from these indicators is broader, compared to narrow definitions of job performance such as by Campbell et al. (1993).

It is important to note that correlations between intellect and job performance were not affected by common method variance (Podsakoff, MacKenzie, & Podsakoff, 2012). A possible confound might exist between predictor and moderator variables, as perceived situational moderators as well as personality measures of intellect were assessed by the participants. However, bivariate relations show that only one indicator (requirements in the task level) was moderately correlated with intellect. Across all moderator variables, the correlation was exactly $r = .00$. Likewise, perceived situational properties and self-ratings of organizational commitment were statistically uncorrelated. This suggests that common method variance is unlikely to affect our results.

5. Conclusion

The present research contributes to our understanding of the mechanisms underlying personality-behavior relations by investigating situational properties operating as moderators. Operationalizing situational properties based on the ideas of trait activation theory provided a valuable theoretical foundation for this endeavor. As expected, we found that correlations between the personality trait intellect and work-related criteria were moderated by the perceived situational properties of the jobs under investigation. These results stress the importance of taking situational properties into account when investigating personality in the workplace. For applied purposes, such as personnel selection, we identified situational requirements that could urge researchers to use measures of intellect.

Acknowledgment

We thank Jane Zagorski for proofreading the paper.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA US: Sage Publications Inc..
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1), 1–18. <http://dx.doi.org/10.1111/j.2044-8325.1990.tb00506.x>.
- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt, Rinehart, & Winston.
- Arnone, M. P., Grabowski, B. L., & Rynd, C. P. (1994). Curiosity as a personality variable influencing learning in a learner controlled lesson with and without advisement. *Educational Technology Research and Development*, 42, 5–20. <http://dx.doi.org/10.1007/BF02298167>.
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment*, 9, 9–30. <http://dx.doi.org/10.1111/1468-2389.00160>.
- Barrick, M. R., Mount, M. K., & Li, N. (2013). The theory of purposeful work behavior: The role of personality, higher-order goals, and job characteristics. *Academy of Management Review*, 38, 132–153. <http://dx.doi.org/10.5465/amr.2010.0479>.
- Berlyne, D. E. (1978). Curiosity and learning. *Motivation and Emotion*, 2, 97–175. <http://dx.doi.org/10.1007/BF00993037>.
- Bless, H., Wänke, M., Bohner, G., Fellhauer, R. F., & Schwarz, N. (1994). Need for cognition: Eine Skala zur Erfassung von Engagement und Freude bei Denkaufgaben [Need for cognition: A scale measuring engagement and happiness in cognitive tasks]. *Zeitschrift für Sozialpsychologie*, 25, 147–154.
- Blickle, G., Meurs, J. A., Wihler, A., Ewen, C., Plies, A., & Günther, S. (2013). The interactive effects of conscientiousness, openness to experience, and political skill on job performance in complex jobs: The importance of context. *Journal of Organizational Behavior*, 34(8), 1145–1164. <http://dx.doi.org/10.1002/job.1843>.
- Brandstätter, H., & Schuler, H. (2004). Overcoming halo and leniency – A new method of merit rating. In H. Schuler (Ed.), *Beurteilung und Förderung beruflicher Leistung* (pp. 359–363). Göttingen: Hogrefe.
- Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin*, 119(2), 197–253. <http://dx.doi.org/10.1037/0033-2909.119.2.197>.
- Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment*, 48(3), 306–307. http://dx.doi.org/10.1207/s15327752jpa4803_13.
- Campbell, J. P., McCloy, R. A., Oppler, S. A., & Sager, C. E. (1993). A theory of performance. In N. Schmitt & N. C. Borman (Eds.), *Associates, Personnel selection in organizations* (pp. 35–70). San Francisco: Jossey-Bass.
- Costa, P. T., & McCrae, R. R. (1985). *The NEO-PI personality inventory*. Odessa, FL: Psychological Assessment Resources.
- Day, H. I. (1968). A curious approach to creativity. *Canadian Psychologist*, 9, 485–497. <http://dx.doi.org/10.1037/h0082675>.
- Depue, R. A., & Collins, P. F. (1999). Neurobiology of the structure of personality: Dopamine, facilitation of incentive motivation, and extraversion. *Behavioral and Brain Sciences*, 22, 491–569.
- DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology*, 93, 880–896.
- Dollinger, S. J. (2003). Need for uniqueness, need for cognition and creativity. *Journal of Creative Behavior*, 37, 99–116. <http://dx.doi.org/10.1002/j.2162-6057.2003.tb00828.x>.
- Dye, D. A., Reck, M., & McDaniel, M. A. (1993). The validity of job knowledge measures. *International Journal of Selection and Assessment*, 1, 153–157. <http://dx.doi.org/10.1111/j.1468-2389.1993.tb00103.x>.
- Ekehammar, B. (1974). Interactionism in personality from a historical perspective. *Psychological Bulletin*, 81, 1026–1048. <http://dx.doi.org/10.1037/h0037457>.
- Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). GPower 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <http://dx.doi.org/10.3758/BF03193146>.
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51, 327–358.
- Gilson, L. L., Mathieu, J. E., Shalley, C. E., & Ruddy, T. M. (2005). Creativity and standardization: Complementary or conflicting drivers of team effectiveness? *Academy of Management Journal*, 48(3), 521–531. <http://dx.doi.org/10.5465/AMJ.2005.17407916>.
- Goff, M., & Ackerman, P. L. (1992). Personality-intelligence relations: Assessment of typical intellectual engagement. *Journal of Educational Psychology*, 84(4), 537–552. <http://dx.doi.org/10.1037/0022-0663.84.4.537>.
- Griffin, B., & Hesketh, B. (2004). Why openness to experience is not a good predictor of job performance. *International Journal of Selection and Assessment*, 12, 243–251. <http://dx.doi.org/10.1111/j.0965-075X.2004.278.1.x>.
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, 50, 327–347.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A meta-analysis spanning three decades of research. *Journal of Applied Psychology*, 94, 1128–1145. <http://dx.doi.org/10.1037/a0015978>.
- Hunter, J. E. (1983). A causal analysis of cognitive ability, job performance, and supervisory ratings. In F. Landy, S. Zedeck, & J. Cleveland (Eds.), *Performance measurement and theory* (pp. 257–266). Hillsdale, NJ: Erlbaum.
- Kashdan, T. B., Gallagher, M. W., Silvia, P. J., Winterstein, B. P., Breen, W. E., Terhar, D., et al. (2009). The curiosity and exploration inventory II: Development, factor structure, and psychometrics. *Journal of Research in Personality*, 43, 987–998. <http://dx.doi.org/10.1016/j.jrp.2009.04.011>.
- Kearney, E., Gebert, D., & Voelpel, S. C. (2009). When and how diversity benefits teams: The importance of team members' need for cognition. *Academy of Management Journal*, 52(3), 581–598. <http://dx.doi.org/10.5465/AMJ.2009.41331431>.
- Lievens, F., Chasteen, C. S., Day, E. A., & Christiansen, N. D. (2006). Large-scale investigation of the role of trait activation theory for understanding assessment center convergent and discriminant validity. *Journal of Applied Psychology*, 91, 247–258.
- Litman, J. A. (2005). Curiosity and the pleasures of learning: Wanting and liking new information. *Cognition & Emotion*, 19, 793–814. <http://dx.doi.org/10.1080/02699930541000101>.
- Litman, J. A., & Mussel, P. (2013). Validity of the interest- and deprivation-type epistemic curiosity model in Germany. *Journal of Individual Differences*, 34, 59–68. <http://dx.doi.org/10.1027/1614-0001/a000100>.
- Maier, G. W., Rappensperger, G., Wittmann, A., & Rosenstiel, L. von (1994, September). *Realistische Tätigkeitsvorschau bei Führungsnachwuchskräften: Ergebnisse einer Längsschnittuntersuchung*. [Realistic job preview with executive trainees.] Paper presented on the 39. congress of the DGP, Hamburg, Germany.
- Maier, G. W., & Woschke, R.-M. (2002). Die affektive Bindung an das Unternehmen: Psychometrische Überprüfung einer deutschsprachigen Fassung des Organizational Commitment Questionnaire (OCQ) von Porter und Smith (1970) [Affective commitment to an organization: Psychometric examination of a German version of the Organizational Commitment Questionnaire (OCQ) of Porter and Smith (1970)]. *Zeitschrift für Arbeits- und Organisationspsychologie*, 46, 126–136. <http://dx.doi.org/10.1026/0932-4089.46.3.126>.
- Mathieu, J. E., & Farr, J. L. (1991). Further evidence for the discriminant validity of measures of organizational commitment, job involvement, and job satisfaction. *Journal of Applied Psychology*, 76(1), 127–133. <http://dx.doi.org/10.1037/0021-9010.76.1.127>.

- Mathieu, J., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108, 171–194. <http://dx.doi.org/10.1037/0033-2909.108.2.171>.
- Maw, W. H., & Maw, E. W. (1970). Nature of creativity in high- and low-curiosity boys. *Developmental Psychology*, 2, 325–329. <http://dx.doi.org/10.1037/h0029189>.
- Meyer, J. P., & Allen, N. J. (1997). *Commitment in the workplace: Theory, research, and application*. Thousand Oaks, CA, US: Sage.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnysky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20–52. <http://dx.doi.org/10.1006/jvbe.2001.1842>.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 80, 252–283.
- Morris, J. H., & Sherman, J. D. (1981). Generalizability of an organizational commitment model. *Academy of Management Journal*, 24, 512–526. <http://dx.doi.org/10.2307/255572>.
- Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). *Employee-organizational linkages: The psychology of commitment, absenteeism, and turnover*. New York: Academic Press.
- Murray, H. (1938). *Explorations in personality*. New York: Oxford Univ. Press.
- Mussel, P. (2010). Epistemic curiosity and related constructs: Lacking evidence of discriminant validity. *Personality And Individual Differences*, 49(5), 506–510. <http://dx.doi.org/10.1016/j.paid.2010.05.014>.
- Mussel, P. (2012). Introducing the construct curiosity for predicting job performance. *Journal of Organizational Behavior*, 34(4), 453–472. <http://dx.doi.org/10.1002/job.1809>.
- Mussel, P. (2013). Intellect: A theoretical framework for personality traits related to intellectual achievements. *Journal of Personality and Social Psychology*, 104(5), 885–906. <http://dx.doi.org/10.1037/a0031918>.
- Mussel, P., Spengler, M., Litman, J. A., & Schuler, H. (2012). Development and validation of the German work-related curiosity scale. *European Journal of Psychological Assessment*, 28, 109–117. <http://dx.doi.org/10.1027/1015-5759/a000098>.
- Mussel, P., Winter, C., Gelléri, P., & Schuler, H. (2011). Explicating the openness to experience construct and its subdimensions and facets in a work setting. *International Journal of Selection And Assessment*, 19, 145–156. <http://dx.doi.org/10.1111/j.1468-2389.2011.00542.x>.
- Oswald, F., Campbell, J., McCloy, R., Rivkin, D., & Lewis, P. (1999). *Stratifying occupational units by specific vocational preparation*. Raleigh, NC: National Center for O*NET Development.
- Pervin, L. A. (1985). Personality: Current controversies, issues, and directions. *Annual Review of Psychology*, 36, 83–114.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 65, 539–569.
- Porter, L. W. & Smith, F. J. (1970). *The etiology of organizational commitment*. Unpublished manuscript. University of California at Irvine.
- Reio, T. G., Jr., & Wiswell, A. (2000). Field investigation of the relationship among adult curiosity, workplace learning, and job performance. *Human Resource Development Quarterly*, 11, 5–30. [http://dx.doi.org/10.1002/1532-1096\(200021\)11:1<5::AID-HRDQ2>3.0.CO;2-A](http://dx.doi.org/10.1002/1532-1096(200021)11:1<5::AID-HRDQ2>3.0.CO;2-A).
- Rothstein, M. G., & Goffin, R. D. (2006). The use of personality measures in personnel selection: What does current research support? *Human Resource Management Review*, 16, 155–180. <http://dx.doi.org/10.1016/j.hrmr.2006.03.004>.
- Schmidt, F. L., & Hunter, J. E. (2004). General mental ability in the world of work: Occupational attainment and job performance. *Journal of Personality and Social Psychology*, 86, 162–173. <http://dx.doi.org/10.1037/0022-3514.86.1.162>.
- Schneider, B. (1987). The people make the place. *Personnel Psychology*, 40, 437–454.
- Schneider, B., Goldstein, H. W., & Smith, D. B. (1995). The ASA framework: An update. *Personnel Psychology*, 48, 747–773. <http://dx.doi.org/10.1111/j.1744-6570.1995.tb01780.x>.
- Schuler, H. (Ed.). (2004). *Beurteilung und Förderung beruflicher Leistung [Assessment and promotion of job performance]*. Göttingen: Hogrefe.
- Schuler, H., Funke, U., Moser, K., Donat, M., & Barthelme, D. (1995). *Personalauswahl in Forschung und Entwicklung. Eignung und Leistung von Wissenschaftlern und Ingenieuren [Personnel selection in research and development]*. Göttingen: Hogrefe.
- Schuler, H., & Görlich, Y. (2007). *Kreativität. [Creativity.]*. Göttingen: Hogrefe.
- Sojka, J. Z., & Deeter-Schmelz, D. R. (2008). Need for cognition and affective orientation as predictors of sales performance: An investigation of main and interaction effects. *Journal of Business And Psychology*, 22(3), 179–190. <http://dx.doi.org/10.1007/s10869-008-9069-x>.
- Spengler, M., & Mussel, P. (2012, April). Linking personality to performance requirements using Holland's hexagonal model. In *Paper presented at the 27th annual conference of the Society for Industrial and Organizational Psychology*. San Diego.
- Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, 88, 500–517. <http://dx.doi.org/10.1037/0021-9010.88.3.500>.
- Tett, R. P., & Christiansen, N. D. (2007). Personality tests at the crossroads: A response to Morgeson, Campion, Dipboye, Hollenbeck, Murphy, and Schmitt. *Personnel Psychology*, 60, 967–993. <http://dx.doi.org/10.1111/j.1744-6570.2007.00098.x>.
- Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, 34, 397–423. <http://dx.doi.org/10.1006/jrpe.2000.2292>.
- von Stumm, S., & Ackerman, P. L. (2013). Investment and intellect: A review and meta-analysis. *Psychological Bulletin*, 139(4), 841–869. <http://dx.doi.org/10.1037/a0030746>.
- Watkins, M. W. (2000). *Monte Carlo PCA for Parallel Analysis*. <<http://espse.psu.edu/spsy/Watkins/Watkins3.ssi>> (18.03.2002).
- Wilhelm, O., Schulze, R., Schmiedek, F., & Suß, H. (2003). Interindividuelle Unterschiede im typischen intellektuellen Engagement [Individual differences in typical intellectual engagement]. *Diagnostica*, 49(2), 49–60. <http://dx.doi.org/10.1026//0012-1924.49.2.49>.
- Woo, S. E., Chernyshenko, O. S., Stark, S. E., & Conz, G. (2014). Validity of six Openness facets in predicting work behaviors: A meta-analysis. *Journal of Personality Assessment*, 96, 76–86. <http://dx.doi.org/10.1080/00223891.2013.806329>.
- Woodworth, R. S. (1937). *Psychology*. New York: Holt.