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Be aware to be on the square: Mindfulness and counterproductive academic behavior

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ABSTRACT

The aim of the present study was to investigate the role of dispositional mindfulness – the capacity to be nonjudgmentally aware of the present moment (Brown & Ryan, 2003) – in counterproductive academic behavior. Apart from investigating the direct relationship between mindfulness and counterproductive behavior, we tested the moderating role of established personality dimensions (conscientiousness and honesty–humility) in the relationship between mindfulness and counterproductive academic behavior. Two hundred eighty-one graduate students completed a trait mindfulness measure and a personality inventory based on the HEXACO model, followed by self-ratings of counterproductive academic behavior after a three-month time lag. Hierarchical regression analyses revealed that mindfulness, conscientiousness, and honesty–humility were negatively related to counterproductive academic behavior. As hypothesized, conscientiousness and honesty–humility moderated the relationship between mindfulness and counterproductive behavior, such that the mindfulness-counterproductive behavior relationship was stronger for students low on conscientiousness and on honesty–humility. These findings add to previous findings on the positive effects of mindfulness for students by demonstrating that it also benefits professional academic behavior.

1. Introduction

Plagiarism, cheating, absenteeism, substance abuse, stealing, or procrastination — the list of counterproductive academic behaviors is long. Counterproductive behaviors are negatively related to students' academic achievements in terms of grades (Credé & Niehorster, 2009) and hamper other group members' performance (Koppenhaver, 2006). Cheating, for example, prevents students from understanding the content matter, whereas absenteeism reduces the possibilities to learn from each other not only for the absent student, but also for the rest of the work group (Koppenhaver, 2006). Likewise, universities' well-functioning and reputation may suffer from graduate students engaging in counterproductive behavior underlining the need to identify mechanisms through which academic misbehavior can be reduced.

Previous research investigating antecedents of counterproductive academic behavior has focused on the role of personality traits as specified in the Big Five and HEXACO model. Specifically, conscientiousness and honesty–humility were established as valid predictors of counterproductive academic behavior (de Vries et al., 2011; Marcus et al., 2007). In the present study, we focus on trait mindfulness, an individual difference variable that has, to our knowledge, not yet been investigated in relation to counterproductive (academic) behavior but which has the potential to provide additional insights into the antecedents and processes involved in counterproductive behavior. Mindfulness describes a state of consciousness in which individuals bring awareness to what is occurring in the present moment with a nonjudgemental attitude (Baer et al., 2006; Brown & Ryan, 2003). Although conceptually mindfulness is a state, researchers agree that there are rather stable trait-like between-person differences in the extent and frequency with which individuals experience mindful states (Brown & Ryan, 2003; Glomb et al., 2011). Although mindfulness displays meaningful relationships with traditional Big Five personality traits (Giluk, 2009; Thompson & Waltz, 2007), it also differs from established personality traits and is worthy of investigation in its own right (Brown & Ryan, 2003; Giluk, 2009).

Goal of the present study is to link mindfulness to counterproductive academic behavior. Doing so, we will build upon affective events theory (AET; Weiss & Cropanzano, 1996). Specifically, we argue that mindfulness displays an overall negative relationship with counterproductive academic behavior. In addition, we posit that the personality characteristics of conscientiousness and honesty–humility shape this overall relationship such that the relationship is stronger when conscientiousness and honesty–humility are low.

1.1. Mindfulness and counterproductive academic behavior

The link between mindfulness and counterproductive behavior can be understood against the backdrop of AET (Weiss & Cropanzano,

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1996; Matta et al., 2014) originating in the industrial and organizational (I/O) psychology literature. Accordingly, work events trigger affective experiences, which, in turn shape employees work behavior, including counterproductive behavior. Transferring this idea to the context of academia, AET suggests that counterproductive academic behavior is driven by students' affective states such as anger, anxiety or fear.

Linking mindfulness to extant work on counterproductive behavior suggests that mindfulness is negatively related to counterproductive student behavior by helping students to better regulate affective states. Previous research conducted in the work context indicates that trait positive and trait negative affect are related to counterproductive behavior (Dalal, 2005). High positive affect is associated with high levels of energy, full concentration, and pleasurable engagement, whereas high negative affect is associated with subjective distress and unpleasurable engagement (Watson et al., 1988). Thus, it might seem intuitively appealing that people with high positive affect engage less in counterproductive behavior, whereas people with high negative affect show counterproductive tendencies more frequently.

Mindfulness at the same time is negatively related to negative affect (Brown & Ryan, 2003; Giluk, 2009; Schutte & Malouff, 2011) and facilitates adaptive forms of emotion regulation (Baer et al., 2006; Brown & Ryan, 2003; Hülsheger et al., 2013). A study investigating the neurocognitive underpinnings of trait mindfulness demonstrated that more mindful individuals showed increased activity in brain regions associated with the regulation of negative affect when they had to label emotionally threatening stimuli (Creswell et al., 2007). The authors conclude that the beneficial effects of mindfulness might be explained through the ability to label one's negative emotions which in turn reduces the intensity of the emotion, and finally the likelihood to engage in automatic maladaptive behavior in response to it. This is in line with empirical findings indicating that mindfulness is negatively related to the use of avoidant-oriented coping strategies (Weinstein et al., 2009). Thus, we hypothesize the following:

H1. Mindfulness is negatively related to counterproductive academic behavior.

1.2. Considering conscientiousness and honesty–humility as boundary conditions

Considering the boundary conditions under which mindfulness might lessen the occurrence of counterproductive academic behavior, the role of established personality traits as assessed by the Big Five and HEXACO model needs to be taken into account. In the I/O psychology literature, evidence has accumulated that honesty–humility is the strongest predictor of workplace delinquency (Lee, Ashton, & de Vries, 2005a; Lee, Ashton, & Shin, 2005b; Oh et al., 2011). Conscientiousness has also been shown to be negatively related with workplace deviance (Berry et al., 2007; Lee et al., 2005b; Salgado, 2002). Similarly, research conducted in the academic context provides evidence that honesty–humility and conscientiousness are negatively correlated with counterproductive academic behavior (de Vries et al., 2011; Marcus et al., 2007). Students characterized by high levels of honesty–humility can be described as honest, sincere and fair (Lee & Ashton, 2004). Conscientious students are considered to be well organized, disciplined, precise and self-controlled (Lee & Ashton, 2004). Whereas the negative relation between honesty–humility and counterproductive behavior appears to be straightforward, conscientious students might engage less in counterproductive academic behavior as they are more likely to exert themselves for reaching their task-related goals (e.g., studying to pass an exam) instead of choosing a counterproductive alternative (e.g., cheating to pass an exam; de Vries et al., 2011).

Taken together, this line of research suggests that students with a high dispositional tendency towards conscientiousness and honesty–humility have a low overall tendency to engage in counterproductive academic behavior. For these highly conscientious and honest students, a ceiling effect may occur leaving little room for mindfulness to exert a positive influence. Thus, students with high honesty–humility and conscientiousness are expected to display low counterproductive academic behavior irrespective of their level of trait mindfulness. In contrast, the positive potential of mindfulness may fully unfold in the case of students low on conscientiousness and honesty–humility. Due to their personality disposition, they are inclined to engage in counterproductive academic behavior. This inclination may, in turn, be hampered by mindfulness such that the relationship between mindfulness and counterproductive academic behavior may be strong when students are at risk of displaying counterproductive behavior due to low levels of conscientiousness and honesty–humility. Therefore, we hypothesize the following:

H2a. Conscientiousness moderates the relationship between mindfulness and counterproductive academic behavior, such that the negative relationship is stronger when conscientiousness is low.

H2b. Honesty–humility moderates the relationship between mindfulness and counterproductive academic behavior, such that the negative relationship is stronger when honesty–humility is low.

2. Method

2.1. Participants and procedure

The overall sample consisted of 281 master students (Age: $M = 23.55$; $SD = 2.36$; female = 154; male = 127) enrolled at five different faculties (Business, Psychology, Law, Health, Medicine and Life Science, and Arts and Social Science) of a Dutch University. The data used in this study was collected as part of a larger 3.5-year research project on cognitive and non-cognitive predictors of study success. Other publications that resulted from this project are Schwager et al. (2015) on the predictive validity of the General Record Examination (GRE) for student task performance and Schwager et al. (2014) on the predictive validity of the Personal Potential Index (PPI), a non-cognitive student selection instrument, for citizenship and counterproductive academic behavior. Theoretical ideas and analyses reported in the present study do not overlap with either of these publications.

Students participated voluntarily and provided their informed consent. Those students being interested were entered into a lottery and could win one of ten iPads. They had just started their master program when filling in the personality and mindfulness questionnaire. Counterproductive academic behavior was assessed approx. Three months later, when students had finished the first teaching term comprising lectures, tutorial group meetings and at least one exam. This is considered to be advantageous as a time lag between the investigation of predictor and criterion variables helps to reduce the problem of common method bias (Podsakoff et al., 2003). In total, two-hundred sixty-one students filled in the questionnaire at time 2.

2.2. Measures

2.2.1. Mindfulness

Trait mindfulness was assessed with the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). All 15 items were reversed coded in such a way that they measure how often participants are in mindless states (e.g., "I find myself doing things without paying attention."). Accordingly, all items were recoded so that high values corresponded with high dispositional mindfulness before an average score was calculated. The rating scale ranged from 1 = almost always to 6 = almost never. Cronbach's alpha measuring the internal consistency across the 15 items measuring trait mindfulness was .80.

2.2.2. Personality

Personality traits were measured by using the HEXACO-60 (Ashton & Lee, 2009). The HEXACO-60 assesses a set of six broad personality

dimensions: honesty–humility, emotionality, extraversion, agreeableness, conscientiousness and openness to experience. Taking into account all six HEXACO dimensions allowed us to follow recent calls to control for stable personality characteristics when investigating mindfulness in relation to outcome criteria. This was deemed important in light of the conceptual overlap between mindfulness and some Big Five personality traits (Giluk, 2009). Items that were negatively formulated were recoded before a mean score was calculated for each of the six dimensions. Each dimension was made up of ten items and all items were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The internal consistency (Cronbach's alpha) across the items measuring the six personality dimensions ranged from .66 for agreeableness to .78 for conscientiousness and extraversion.

2.2.3. Counterproductive academic behavior

Counterproductive academic behavior was investigated with eight items, extracted from the Workplace Deviance Scale (Bennett & Robinson, 2000). Items were adapted to the academic context ("I am late or absent from study related meetings without permission or evident reason."; "I spend a lot of time with daydreaming or losing myself in thoughts instead of studying."; "I make offending comments about people studying or working at my university."; "I take long breaks while studying."). Answers were provided on a five-point rating scale (1 = never to 5 = very often).

To examine the goodness of fit of the counterproductive academic behavior construct, we conducted a confirmatory factor analysis. We tested a second-order factor model with a higher-order general factor and two correlated first-order factors representing counterproductive behaviors directed towards the university (CWB-O; four items) and counterproductive behaviors directed towards other individuals (CWB-I; four items) against a first-order model with two correlated factors representing CWB-O and CWB-I. Both models had an acceptable model fit: χ^2 (22) = 52.739; RMSEA = .073, CFI = .926, SRMR = .070 (second-order model); χ^2 (25) = 52.739; RMSEA = .065, CFI = .934, SRMR = .070 (first-order model). In line with previous research justifying the creation of an overall counterproductive behavior construct with CWB-I and CWB-O as underlying dimensions (Berry et al., 2007; Marcus et al., 2013), we aggregated all items in one overall score. The internal consistency across the eight items, as assessed by Cronbach's alpha, was .70.

3. Results

Table 1 provides an overview of the zero-order correlations between the study variables. Dispositional mindfulness was negatively related to counterproductive academic behavior ($r = -.28$, $p < .01$) after a three months' time lag. With respect to personality, conscientiousness ($r = -.45$, $p < .01$), agreeableness ($r = -.13$, $p < .05$), emotionality ($r = -.17$, $p < .01$) and honesty–humility ($r = -.29$, $p < .01$) were significantly correlated with subsequent counterproductive academic behavior. Extraversion and openness were not significantly correlated with counterproductive behavior.

Results concerning Hypothesis 1 revealed that mindfulness ($\beta = -.13$, $p < .05$) was negatively related with counterproductive academic behavior when the influence of the six HEXACO personality dimensions was held stable. Furthermore, conscientiousness ($\beta = -.40$, $p < .01$), honesty–humility ($\beta = -.17$, $p < .01$), and emotionality ($\beta = -.13$, $p < .05$) shared a significant amount of variance with counterproductive academic behavior (see Table 2).

In order to test Hypotheses 2a and 2b, we calculated the interaction terms between (1) mindfulness and conscientiousness, and (2) mindfulness and honesty–humility. To reduce the problem of multicollinearity, we standardized the predictor variables before the interaction terms were calculated (Marquardt, 1980). The standardized interaction terms were first entered separately into the second step of the regression analysis (see Table 2). In addition, we report an analysis in which they are entered jointly. When included separately, conscientiousness ($\beta = .12$, $p < .05$) and honesty–humility ($\beta = .13$, $p < .05$) significantly moderated the relationship between mindfulness and counterproductive behavior. When both interaction terms were included jointly in the second step of the regression analysis, only the interaction effect between mindfulness and honesty–humility was significant ($\beta = .11$, $p < .05$).

A graph of the significant interactions is provided in Fig. 1. Results of simple slope analyses (Aiken & West, 1991) revealed that the relationship between mindfulness and counterproductive academic behavior was significant when conscientiousness (B = −.11, $p < .05$) and honesty–humility (B = −.12, $p < .01$) were low (−1 *SD*). In contrast, the relationships were not significant, when conscientiousness (B = − .01, *n.s.*) and honesty–humility (B = .01, *n.s.*) were high (+1 *SD*).

4. Discussion

The primary aim of the present study was to investigate the relation between mindfulness and counterproductive academic behavior. Results indicate that overall higher trait mindfulness was associated with less counterproductive academic behavior measured after a three months time lag. Although we did not explicitly test the mechanisms underlying this relationship, findings are in line with predictions made by AET (Weiss & Cropanzano, 1996). Accordingly, students high vs. low on mindfulness may differ in their perception and appraisal of events taking place in the academic context. This may trigger different affective reactions which may ultimately lead to differences in counterproductive behaviors: More mindful students may perceive demanding situations as less stressful and threatening (Weinstein et al., 2009) and this may help them focus on the fulfillment of the task itself ("What can I do right now in order to pass an exam?") rather than engaging in counterproductive behaviors. In contrast, students low on mindfulness are occupied by worry-related thoughts about the past or the

Table 1
Descriptive statistic, reliabilities and intercorrelations between study variables.

	n	*M*	*SD*	α	Correlations							
					1	2	3	4	5	6	7	8
1. Mindfulness	281	4.30	0.61	.80	–							
2. CO	281	3.60	0.58	.78	.35**	–						
3. AG	281	3.10	0.52	.66	.20**	.01	–					
4. EM	281	3.07	0.59	.75	−.11	.08	−.01	–				
5. HO	281	3.37	0.57	.71	.14*	.15*	.31**	.15*	–			
6. EX	281	3.60	0.55	.78	.24**	.11	.08	−.14*	−.11	–		
7. OP	281	3.56	0.62	.75	.04	−.01	.08	−.03	.17**	.17**	–	
8. CAB	261	1.85	0.48	.70	−.28**	−.47**	−.14*	−.17**	−.29**	.04	−.04	–

Note. CO = conscientiousness; AG = agreeableness; EM = emotionality; HO = honesty–humility; EX = extraversion; OP = openness to experience; CAB = counterproductive academic behavior.

* $p < .05$.

** $p < .01$.

Table 2
Moderated Regression Analysis Predicting Counterproductive Academic Behavior from Mindfulness and Personality.

	Model 1		Model 2		Model 3		Model 4	
Predictor	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.31***		.31***		.31***		.31***	
Mindfulness		−.13*		−.13*		−.11		−.12*
Conscientiousness		−.40***		−.38***		−.38***		−.37***
Agreeableness		−.08		−.08		−.07		−.07
Emotionality		−.13*		−.13*		−.13*		−.13*
Honesty–humility		−.17**		−.15**		−.16**		−.15**
Extraversion		.11		.11		.10		.10
Openness		−.04		−.04		−.03		−.03
Step 2			.01*		.02*		*	
Mindfulness × conscientiousness				.12*				.09
Mindfulness × honesty–humility						.13*		.11*
Total R^2	.31***		.32*		.33*		.33*	

Note. $n = 261$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

future (e.g., "What happens if I don't pass the exam?"). These thoughts take away important resources, they trigger negative affective reactions which may influence their behavior towards other students and lead to counterproductive behaviors such as cheating, gossiping, withholding information, etc.

With respect to traditional personality traits, conscientiousness and honesty–humility were valid predictors of future counterproductive behavior. The negative link between honesty–humility and counterproductive behavior is in accordance with the findings of a recent study (Meriac, 2012) linking work ethics to counterproductive academic behavior. The negative relation between emotionality and counterproductive behavior is also in line with previous findings from the work context (Lee et al., 2005a). In contrast to neuroticism which is characterized by anxiety, fear, impulsivity and worry in the Big Five taxonomy (Costa & McCrae, 1992), emotionality measured by the HEXACO focuses on empathy and the need for emotional support from others (Ashton & Lee, 2007). This might explain why emotionality is negatively related with counterproductive behavior in contrast to neuroticism which is positively related with counterproductive behavior in previous research (Berry et al., 2007).

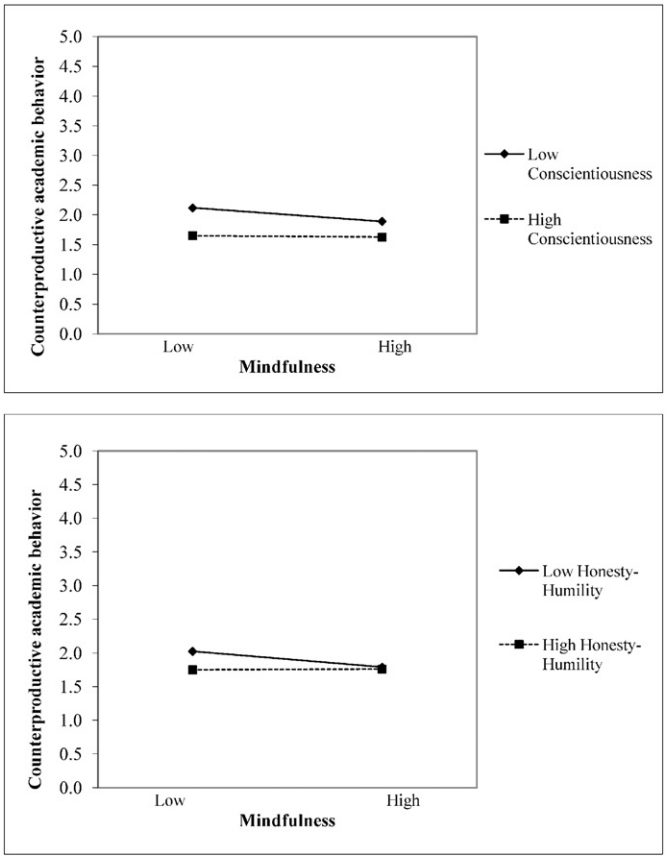

Fig. 1. Interactions of mindfulness with conscientiousness and honesty–humility on counterproductive academic behavior (CAB).

Although we found an overall negative relationship between mindfulness and counterproductive behavior, the interaction of mindfulness with conscientiousness and honesty–humility indicated that this relationship was predominantly driven by individuals low on conscientiousness and honesty–humility. Thus results suggest that whereas students with high levels of conscientiousness and honesty–humility have little inclination to show counterproductive behavior regardless of their level of mindfulness, students with a strong tendency towards unreliability and dishonesty profit from high levels of trait mindfulness.

4.1. Practical implications

Finding a relation between mindfulness and counterproductive academic behavior is promising from universities' perspective. Compared to the relatively stable personality traits defined in the Big Five and HEXACO model, trait mindfulness can be enhanced through training (Carmody & Baer, 2008; Shapiro et al., 2007). This is in line with empirical research indicating that mindfulness-based interventions focusing on stress-reduction have the potential to increase trait mindfulness levels and thereby decrease stress symptoms of university students (Regehr et al., 2013). Furthermore, previous research has revealed that trait mindfulness is positively related to performance in terms of grades, test results, information retention and working memory capacity (Mrazek et al., 2013; Ramsburg & Youmans, 2013). Thus, universities might consider providing mindfulness trainings in order to reduce students' tendencies to engage in counterproductive behavior while simultaneously making a positive contribution to their coping potential and task performance.

4.2. Limitations and future research directions

The first limitation of the present study is that all ratings stem from the same data source (common method bias). Yet, while the validity of observer ratings of traditional personality traits is well-established (Connelly & Ones, 2010) this is not the case for mindfulness and counterproductive behavior for which other-ratings might be less accurate than self-reports. Whereas public counterproductive behaviors such as

absenteeism can be observed by peers or supervisors, hidden behaviors such as cheating or daydreaming remain unrecognized by others. The same holds true for mindfulness which refers to internal processes and experiences which are not readily observable by others.

A second potential limitation is that the relation between mindfulness and counterproductive behavior found in the present study is only cross-sectional in nature. Although students were asked to provide information about their counterproductive tendencies three months after trait mindfulness and personality traits were assessed, this set-up does not allow drawing causal conclusions. A more rigorous test of directions of effects would involve a full two-wave panel design (Zapf et al., 1996) or an experimental design making use of a mindfulness intervention (as e.g., in Hülsheger et al., 2013).

Notably, the magnitudes of the interaction effects were relatively small. However, interaction effects are especially difficult to detect due to statistical issues such as range restriction in the predictor (Aguinis, 1995), and reduced reliability of the product term (Dunlap & Kemery, 1988). Furthermore, the distribution of the dependent variable was skewed towards low ratings which may further limit the probability to detect interaction effects (Hamilton, 1992). This might be due to the fact that master students are usually well-motivated and therefore engage less often in counterproductive behavior as for example undergraduate students. Future research may thus focus on replicating our findings using different types of samples (e.g., undergraduate or college students).

The present study confirmed conscientiousness and honesty–humility as moderators of the mindfulness-counterproductive behavior relationship. This finding does not preclude the possibility that there are other important moderators of this relationship. While we focused on moderators that are related to the individual, situational conditions are also likely to moderate the mindfulness-counterproductive behavior relationship. For instance, mindfulness may be especially important when study conditions are stressful or perceived as unfair and consequently associated with high levels of negative affective experiences. In contrast, the positive potential of mindfulness may unfold to a lesser extent when study conditions are perceived as optimal and trigger few negative affective experiences.

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