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Lukasz Baka*

Can job control be counterproductive? The moderation effect of the Dark Triad and job control on job stressor – counterproductive work behavior link

Abstract: Drawing on the stressor–emotion model, the study examines the mechanisms of counterproductive work behavior (CWB) development: specifically (1) the direct effect of job stressor (bullying at work); (2) the moderation effect of the Dark Triad (DT) and job control (JC); and (3) the moderated moderation effect (DT x JC) on the job stressor–CWB link. Data were collected among 763 white- and blue-collar workers. The hypotheses were tested by means of the PROCESS method. As expected in the hypotheses, high job stressor was directly related to high CWB, and DT moderated (increased) the link. JC also moderated the job stressor–CWB link, but the moderation effect was in a direction opposite to expectations. High job control participants were more likely to report CWB when they reported a high level of the stressors. The moderated moderation effect was supported. JC increases the moderation effect of DT on the job stressor–CWB link. The highest level of CWB was observed when DT and JC were high. The findings provide further insight into processes leading to the development of CWB.

Keywords: job control, Dark Triad, CWB, stressor-emotion model, bullying at workplace

Introduction

Counterproductive work behavior (CWB) consists of intentional employee actions that harm or are intended to harm the organization and its members (Spector & Fox, 2005). The stressor–emotion model (S–E) describes how environmental and personal factors lead to this behavior through the mediating processes of perception and emotion (Spector & Fox, 2005). The S–E model perceives job stressors as the primary sources of CWB but the effect of job stressors can be modified by personality traits (Zhou, Meier, & Spector, 2014) and job control (Fox, Spector, & Miles, 2001). The moderating role of personality (contrary to the moderating role of job control) is documented very well (see Spector, 2011). For example, employees with high negative affectivity (Penney & Spector, 2005) as well as low self-control (Marcus & Schuler, 2001), low agreeableness and conscientiousness (Bowling & Eschleman, 2010; Salgado, 2003; Sulea, Fine, Fischmann, Sava et al., 2013), and low self-efficacy (Fida, Paciello,

Tramontano, Barbaranelli et al., 2015) are more often involved in different types of CWB, when occupational stress is high. Recently, the moderating role of “the dark side of personality” has been tested in the context of CWB (O’Boyle, Forsyth, Banks, & McDaniel, 2012; Spain, Harms, & Lebreton, 2014; Wu & Lebreton, 2011). The majority of the research has focused on three traits commonly referred to as the Dark Triad (DT) – Machiavellianism, subclinical narcissism and subclinical psychopathy (Paulhus & Williams, 2002).

Previous studies have found that DT is manifested more strongly among employees with high authority (O’Boyle et al., 2012), and in organizations where organizational transparency is low, internal security controls and security norms are loose, the work environment is unstructured and the settings less organized (Cohen, 2015). Both high authority as well as the mentioned organizational factors may promote high job control for employees – e.g. a high sense of autonomy and high level of decision latitude. On the one hand, high job control (JC)

* Akademia Pedagogiki Specjalnej im. Marii Grzegorzewskiej w Warszawie, Zakład Psychologii Społecznej

Corresponding author: e-mail: lukbaka@gmail.com

is perceived as a buffer to occupational stress (Karasek, 1979). On the other hand, it may favor the emergence of harmful organizational behaviors (Tucker, Sinclair, Mohr, Adler et al., 2009), especially among employees with a high level of the Dark Triad. The current study investigated: (1) the direct effect of job stressors on CWB; and (2) the moderation effects of the Dark Triad and job control; as well as (3) the moderated moderation effects of the two factors (DT x JC) on job stressors–CWB link (Figure 1).

The direct effect of job stressors on CWB

In accordance to the S–E model, engaging in CWB may be guided by two different motives (Spector, Fox, Penney, Bruursema et al., 2006). The first is the motive to protect and retain resources under stressful conditions (Krischer, Penney, & Hunter, 2010). This may reflect attempts by employees to cope with chronic stress by means of limiting their exposure to prolonged stressful situations and prevention of subsequent strain. This is consistent with the Conservative of Resources Theory (COR; Hobfoll, 1989). Indeed, numerous studies have found that different kinds of chronic job stressors, such as organizational constraints, workload and role conflict (Spector & Fox, 2005), job insecurity (Van den Broeck, Sulea, Vander Elst, Fischmann, Iliescu, & De Witte, 2014) and work-family conflict (Ferguson, Carlson, Hunter, & Whitten, 2012) are predictors of high levels of CWB. The second motive of CWB refers to the need to retaliate (Skarlicki & Folger, 1997) or exact revenge (Bies & Tripp, 2005) for mistreatment in the organization. Several studies confirm strong connections among CWB and different forms of organizational mistreatment, including injustice (Skarlicki & Folger, 1997), incivility (Penney & Spector, 2005), psychological contract breach (Chao, Cheung, & Wu, 2011), abusive supervision (Sulea et al., 2013; Wei & Si, 2013) and experience of work aggression (Baka, 2013). In the current study, bullying at work was taken into account as a source of occupational stress. Bullying is defined as the systematic persecution of a colleague, a subordinate or a superior, which, if continued, may cause severe social, psychological and psychosomatic problems for the victim (Einarsen, 1999). In **H1**, a positive direct link between bullying and CWB is expected.

The moderation effect of the Dark Triad on the job stressors–CWB link

The Dark Triad is a constellation of three theoretically separable, albeit empirically overlapping, personality constructs that are typically construed as interpersonally maladaptive: Machiavellianism, narcissism and psychopathy (Smith & Lilienfeld, 2013). Machiavellianism is characterized by cynical, pragmatic, misanthropic and immoral beliefs, emotional detachment, agentic and self-serving motives, strategic long-term planning, manipulation and exploitation (Christie & Lehman, 1970; Rauthmann & Will, 2011). Narcissism includes an inflated view of self, fantasies about control, success and admiration, and the desire to have self-love reinforced

by others (Kernberg, 1989; Morf & Rhodewalt, 2001). Psychopathy is marked by a lack of concern for both other people and social regulatory mechanisms, impulsivity, and lack of guilt or remorse for harming others (Hare & Neumann, 2009). Despite many researchers treating the constructs comprising the Dark Triad as singular traits (e.g. psychopathy), it is more appropriate to conceptualize these constructs as multi-dimensional, composed of multiple attributes (Cohen, 2015). This is because, while the traits that constitute the Dark Triad overlap, they are nonetheless relatively independent (Paulhus & Williams, 2002).

A positive link between the Dark Triad and CWB has been supported in several studies (Cohen, 2015; DeShong, Grant, & Mullins-Sweat, 2014; Jonason, Slomski, & Partyka, 2012; Piotrowski, 2018; Spain, Harms, & Lebreton, 2014; O’Boyle et al., 2012; Scherer, Baysinger, Zolynsky, & LeBreton, 2015; Wu & Lebreton, 2011). For instance, in a meta-analysis study, CWB was correlated strongly with Machiavellianism ($\rho = .25$), narcissism ($\rho = .43$), and weakly with psychopathy ($\rho = .06$). The Dark Triad explained in total 28% variance of CWB (O’Boyle et al., 2012).

Previous studies have also found that employees with high Machiavellianism are willing to do whatever is needed to achieve their organizational goals (Cohen, 2015) and are more prone to being morally disengaged and exploit others (Moore, Detert, Baker, Trevino et al., 2002). Psychopaths not only gain satisfaction from harming others but they also use aggression or the threat of aggression to achieve their own goals (Wu & Lebreton, 2011). They also believe that organizational norms and regulations do not apply to them and, therefore, they often violate them (Boddy, 2014). In addition, psychopaths are impulsive, have low self-control and do not experience anxiety and guilt to the same extent as others (Wu & Lebreton, 2011). Narcissists, in turn, tend to perceive themselves as victims, attribute negative intentions during interpersonal interactions and, thus, react with stronger negative emotions and aggression to minor malice, injustice and information that threatens their ego (Meurs, Fox, Kessler, & Spector, 2013; Penney & Spector, 2002). Based on the cited studies above, it can be expected that employees with high level of the Dark Triad are more strongly engaged in different forms of CWB when exposed to organizational mistreatment. CWB may perform different functions for “dark personalities”. For example, it can be a way to achieve personal goals, a way of coping with negative emotions, a way to punish a person who is the source of “infringement” of self-esteem, a way to demonstrate one’s own domination and strength, and a way to restore a sense of control in job stress conditions.

Indeed, few studies support the moderating effect of separate traits belonging to the Dark Triad in the job stressors–CWB link. For instance, narcissism intensified the negative effect of organizational constraints (Penney & Spector, 2002), lack of reciprocity (Meier & Semmer, 2012) and interpersonal conflict at work (Meurs et al., 2013) on CWB. Boddy (2014) has found, in turn, that employees with a high level of psychopathy, under conditions of high interpersonal conflicts and bullying, are more engaged

in CWB in comparison with others. To the best of my knowledge, no study has tested for the moderating effects of the global index of the Dark Triad in the relationship between job stressors and CWB. It is expected that the Dark Triad will intensify the negative effects of bullying at work on CWB (**H2**).

Moderation effect of job control on the job stressors–CWB link

Apart from the modifying function of personality, the S–E model emphasized the importance of job control in the development of CWB (Spector, 2011). Job control refers to employees' ability to control their work activities (Karasek, 1979). In the work setting, it is one of the most frequently investigated kinds of resources, which help to cope with occupational stress (e.g. Häusser et al., 2010). Job control includes two components, skill discretion and decision authority, but these components were usually combined in one measure. Fox & Spector (2006) point out two moments when job control is of great importance in the job stressor–behavior relation chain. The first is the moment of event perception and interpretation. The volume of control greatly determines if the event will be interpreted as a challenge or a hazard. The event interpretation method entails specific emotions. The other moment applies to the reaction upon experiencing negative emotions, and the ways to reduce them. Employees with high job control often tend to search for positive ways to relieve negative emotions, while employees with low job control would rather modify their work environment and restore their sense of control by means of acts of destruction (Allen & Greenberg, 1980). Earlier studies have not confirmed the buffering function of job control in the context of CWB development (Fox et al., 2001; Smoktunowicz, Baka, Cieślak, Nichols et al., 2015; Tucker et al., 2009). For example, one of them found that job control moderates the negative effects of interpersonal conflict at work and injustice on CWB, but both moderation effects were in a direction opposite to expectations (Fox et al., 2001). High job control participants were more likely to report CWB when they reported high levels of the stressors. Similar findings were obtained in a cross-lagged study on soldiers performing a peace mission. Soldiers who perceived job control as high, after 6 months of increasing work overload exhibited high levels of indiscipline (Tucker et al., 2009). In the current study, it is expected that individuals perceiving high job control are more likely to respond to CWB in conditions of high occupational stress (**H3**).

The moderated moderation effect of the Dark Triad and job control on the job stressors–CWB link

According to the person – organization fit theory, people look for a work environment that will meet their needs, desires and preferences, as well as one that will remain in line with their values system (Edwards, Kaplan, & Harrison, 1998). It can be assumed that certain types of work environment and organizational culture are particularly attractive for “dark personalities” and

that these attract them more strongly than other types of personality. As noted by Cohen (2015), employees with high level of the Dark Triad feel more comfortable in a work setting that has much to offer them in terms of their need for prestige, resources and independence. They also seek organizations where the probability of them being caught is lower because of the absence of clear policies and standards, as well as control mechanisms. To a large extent, this has been confirmed empirically (O'Boyle et al., 2012; Cohen, 2015; Grijalva & Newman, 2015). For example, Cohen (2015) found that the link between the Dark Triad and CWB is mediated by perceptions of organizational politics and moderated, among other things, by organizational transparency. It may be expected that employees high on the Dark Triad feel more comfortable in a workplace, where they have the ability to influence their work environment, and where they have freedom in decision-making and autonomy in actions. In other words, the manifestation of “dark traits” should be stronger in organizations where employees have a higher level of job control. Therefore, it may be expected that high job control increases the moderating effect of the Dark Triad on the bullying–CWB link. Employees with high level of Dark Triad, who experience mistreatment and have a high level of job control, are expected to be engaged in CWB more than workers with low job control (**H4**). To the best of my knowledge, no available studies have investigated the joint effect of the Dark Triad and job control in the context of CWB' development.

The control effect of need for social approval

With regard to the fact that data concerning both “dark personality traits” and non-ethical behavior constitutes information that people do not confess to, one should expect a strong fear of assessment and the related self-presentation motivation (Rosenberg, 1991). This is why the social approval effect was controlled in the presented study. The need for social approval applies to the self-presentation tendencies of the studied population to present themselves favorably. There can be several causes accounting for the trend, such as lack of self-reflection, conformism or pure inclination to lying and “pretending to be better” (Birenbaum & Montag, 1989). The self-presentation issues usually apply to two kinds of deformations. Firstly, members of the studied population may intentionally deny their weaknesses and vices, even if they are common in society. Secondly, they can attribute to themselves some advantages or virtues, which are very rare in society making it highly unlikely for them to possess them (Birenbaum & Montag, 1989). The role of using social approval inventories, then, controls the degree to which the studied person gives a positive answer aimed at making a positive impression, while avoiding answers which describe the person just as he/she is.

Method

Participants

The study was conducted on a sample of 763 Polish workers. The sample includes white-collar workers,

e.g. HR specialists, IT specialists, accountants, financiers ($n = 398$), and blue-collar workers, e.g. machine operators, equipment fitters, production line employees ($n = 365$). The questionnaires were distributed at randomly selected state-owned companies in six regions. Potential respondents received a hard copy of the questionnaires along with a letter, which explained the purpose of the study. Full confidentiality of data and anonymity were secured. Those who provided informed consent were asked to fill out the questionnaires and seal them in envelopes, which were subsequently collected by the research assistants. Out of 1023 distributed questionnaires, 807 (79%) were returned and 763 (75% of the original pool) were filled out at least 75%. These were subsequently used for the data analysis. The analyzed group consisted of 445 (58.5%) women and 316 (41.5%) men, aged between 20 and 63 years of age ($M = 39.84$; $SD = 9.21$), with work experience ranging from 1 to 40 years ($M = 15.11$; $SD = 10.63$).

Measures

Job Stressor

The measure of job stressor was bullying at work. This variable was measured with the Negative Acts Questionnaires (Einarsen & Rakness, 1997). This tool reflects typical bullying behaviors (e.g. giving unachievable tasks, unkindly gestures, spreading rumors). The participants indicated the degree to which they had suffered such behaviors during the last six months on a 5-point Likert type rating scale, ranging from 1 (*never*) to 5 (*daily*). The questionnaire was made up of 22 items, each one drawn up behaviorally. The scale has shown high reliability in the study ($\alpha = .86$).

Job control

Job control was measured with the subscale of the Job Content Questionnaire (Karasek, 1985). This includes 9 items, of which 6 are related to skill discretion and 3 are related to decision authority. Each item on the subscale is evaluated on a 5-point response scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The aggregated index of job control was taken into account in this study. Good internal reliability of the tools was shown with a Cronbach's α coefficient of .77 for job control.

Dark Triad

To measure for the DT, the Dirty Dozen Scale was used (Jonason & Webster, 2010). This is composed of 12 items (4 items per subscale). Participants were asked to what extent they agreed (1 = Strongly Disagree; 5 = Strongly Agree) with the given statements. Corresponding items were averaged to create indices for narcissism ($\alpha = .83$), Machiavellianism ($\alpha = .79$) and psychopathy ($\alpha = .81$) along with a composite of all 12 items ($\alpha = .83$).

Counterproductive Work Behaviors

CWB were measured with the short version of the Counterproductive Work Behavior-Checklist (CWB-C32; Spector et al., 2006). CWB-C consists of 32 items, which refer to five types of harmful behavior (subscales): abuse

(e.g. harmful behaviors that affect other people), sabotage (e.g. destroying the physical environment), production deviance (e.g. the purposeful failure to perform job tasks effectively), theft (e.g. appropriation of property), and withdrawal (e.g. avoiding work by being absent or late). The general index of the CWB-C32 ($\alpha = .90$) was used in this study.

Need for social approval

This was measured with the Social Approval Questionnaire (Drwal & Wilczynska, 1995). The questionnaire is based on a classical lie scale, taking into account socially non-approved but very common patterns of behavior, thus, not considered as pathological (e.g. *There were instances when I cheated somebody*), as well as socially desired but very unlikely behavior (e.g.: *When I make a mistake I am always ready to admit it*). The questionnaire consists of 29 statements with two possible answers (1 – true; 2 – false). High results indicate a strong need for social approval. The tool reliability amounted to $\alpha = .79$ in minor studies.

Analytical Procedure

All variables were z-standardized. The missing data pattern was analyzed using Little's MCAR test, which confirmed that data was missing completely at random, $\chi^2(51) = 49.78$, $p = .684$. Confirmatory factor analysis (CFA) was conducted to examine structure of the data. One-factor structures of bullying, DT, job control and CWB were hypothesized. As data were self-reported, common method variance (CMV) was checked by means of Harman one-factor test. The research model was tested by means of regression analysis with bootstrapping, using the PROCESS macros (Hayes, 2013). Model 3 was applied (the moderated moderation effect). Through the application of bootstrapping (1000 samples), PROCESS calculates direct, moderation and moderated moderation effects for low ($-1 SD$), mean (M) and high ($+1 SD$) levels of the moderators, as well as their confidence intervals (CIs). This means that a type of CWB was regressed on bullying, the DT and job control (direct effects), and then on interactional effects: (1) bullying x DT, (2) bullying x job control, (3) DT x job control, (4) bullying x DT x job control. The test of slope differences was performed if the interaction was significant (Dawson, 2013). The effects of demographic variables and need for social approval were controlled in the regression model.

Results

Confirmatory factor analyses

CFA was used to examine the structure of the data. The obtained results of CFA are presented in Table 1. The hypothesized one-factor models of the four measures yielded a good fit to the data. Thus, the distinctiveness of the four constructs is supported.

Common method bias testing

The use of self-report and high correlations among analyzed variables increases the likelihood of common

Table 1. Confirmatory factor analysis of measurement models: fit indices

	CMIN	RMSEA	CFI	TLI	SRMR
Bullying at workplace	2,694.72**	.052	.979	.950	.067
Job Control	1,938.54**	.057	.859	.841	.071
Dark Triad	2,082.28**	.067	.862	.849	.080
Counterproductive Work Behavior	2,922.70**	.060	.901	.889	.069
One-factor model (Harman test)	6,628.64**	.090	.674	.616	.094
Hypothesized four-factor model	4,745.93**	.076	.915	.881	.081

Notes. CMIN – chi-square fit index; RMSEA – root-mean-square error of approximation; CFI – comparative fit index; TLI – Tucker-Lewis index; SRMR – standardized root-mean-square residual. ** $p < 0.01$, two-tailed.

method bias (CMB) and questions construct multidimensionality. First, the Harman one-factor test yielded a poor fit to the data (Table 1; CMIN = 6,628.64, RMSEA = .090, CFI = .674, TLI = 0.881, SRMR = .094). Second, a model that included an orthogonal CMV factor on which all items had an additional loading yielded a better fit than the hypothetical model ($\Delta\chi^2 = 19.24$, $p < .05$). However, the CMV factor accounted for only 6.5 percent of the total variance. Correlations among substantive latent factors were also virtually the same whether generated by the CFA with the CMV factor or without it. Thus, CMV is limited in the data.

Descriptive Statistics

Means, standard deviations, Cronbach alpha coefficients, as well as Pearson’s correlations are displayed in Table 2. Age and job seniority were shown to correlate negatively with bullying, DT and CWB. Gender was found to be positively related to DT and CWB, and negatively related to job control, with men displaying higher DT ($t = -6.77$, $p < .001$), more often CWB ($t = -2.44$, $p < .05$) and lower job control ($t = 2.98$; $p < .01$) than women. Need for social approval correlated negatively with bullying at

work, DT and CWB. CWB was related to high bullying, high DT but not to job control. Bullying at work was correlated positively with DT and CWB, and negatively with job control.

Testing hypothesis

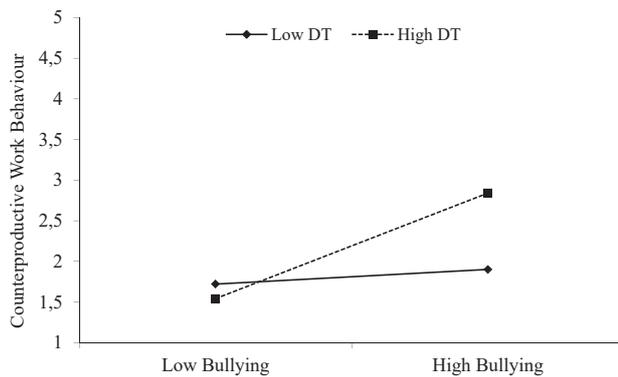
Table 3 displays the results of regression analyses testing the direct effect of bullying at work, the DT and job control on CWB, as well as the two- and three-way interactional effects. In these analyses the effects of age, gender, job seniority and need for social approval were controlled. The findings showed that a high level of bullying at work ($B = .39$; 95% CI: .34, .44) and DT ($B = .26$; 95% CI: .20, .31) are predictors of CWB. Job control did not predict CWB ($B = -.01$; 95% CI: -.06, .04). Age and gender were not predictors of CWB, while need for social approval predicted these behaviors ($B = .17$; 95% CI: .13, .23). The DT was found to moderate the negative effect of bullying at work on CWB ($B = .29$; 95% CI: .24, .33). More specifically, the higher the level of bullying the higher the level of CWB was, but mainly when DT was high. A similar moderation effect was observed in the case of the second moderator – job control ($B = .09$;

Table 2. Descriptive statistics, reliability and correlations for study variables

	1	2	3	4	5	(a)	(b)	(c)	6	7	M	SD	α
1. Age	–										39.84	9.21	–
2. Gender	-.03	–									–	–	–
3. Job seniority	.92***	.05	–								14.43	7.62	–
4. Bullying	-.09*	.03	-.14***	–							28.99	8.93	.86
5. Dark Triad	-.11**	.24***	-.10**	.13***	–						23.96	8.63	.83
(a) Machiavellianism	-.09*	.24***	-.08*	.16***	.84***	–					7.30	3.31	.79
(b) Narcissism	-.11**	.18***	-.10**	.10**	.86***	.64***	–				8.84	3.46	.83
(c) Psychopathy	-.14***	.23***	-.13***	.19***	.91***	.74***	.53***	–			7.60	3.16	.81
6. Job Control	-.01	-.11**	-.03	-.08*	-.09*	-.16***	.02	-.08*	–		34.01	4.86	.83
7. CWB	-.09*	.10**	-.09*	.48***	.37***	.39***	.32***	.35***	.07	–	37.74	7.43	.90
8. Social Approval	.11**	-.02	.02	-.14***	-.23***	-.28***	-.24***	-.20***	.06	-.19***	.44	4.79	.79

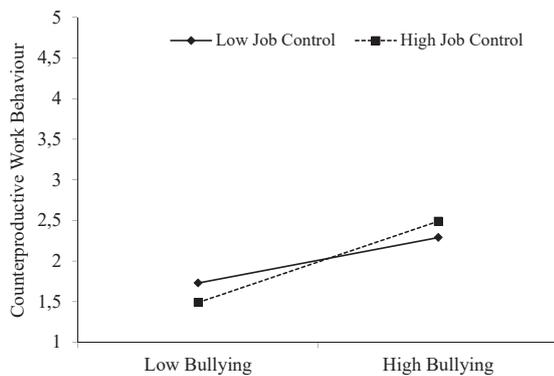
* $p = .05$; ** $p < .01$; *** $p < .001$.

Figure 1. The two-way interaction effect of bullying and Dark Triad on counterproductive work behaviour



Note. Counterproductive work behaviour was measured on a scale ranging from 1 (*never*) to 5 (*every day*).

Figure 2. The two-way interaction effect of bullying and job control on counterproductive work behaviour

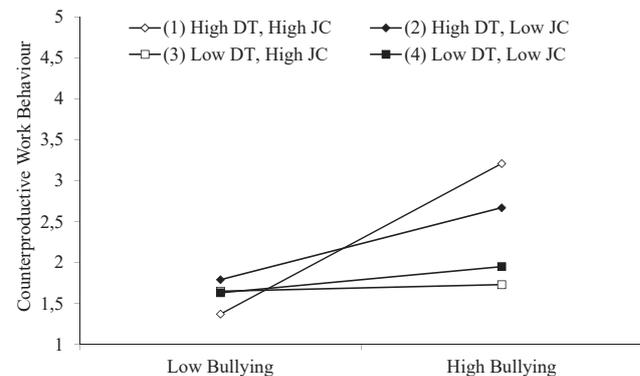


Note. Counterproductive work behaviour was measured on a scale ranging from 1 (*never*) to 5 (*every day*).

95% *CI*: .03, .15). Figures 1 and 2 illustrate the moderation effects of the DT and job control on bullying–CWB link. The obtained results fully confirm **H1**, **H2**, and **H3**.

The three-way interaction effect was also supported. A three-way interaction between bullying, the DT and job control predicted CWB ($B = .15$; 95% *CI*: .10, .20). The moderated moderation effects were confirmed by means of *F*-test for significant change in R^2 values: $F(1,655) = 34.99$; $p < .001$; $\Delta R^2 = .03$. Figure 3 shows that CWB increased along with the increase of bullying at work but the effect turned out to be the strongest when the DT and job control were high. The test of slope differences (Dawson, 2013) indicated that in conditions of high bullying, CWB was more frequent for individuals with high DT and high job control compared with individuals with low DT and high JC ($t = 2.77$; $p < .01$), as well as low DT

Figure 3. The three-way interaction effect of bullying, Dark Triad and job control on counterproductive work behaviour



Note. Counterproductive work behaviour was measured on a scale ranging from 1 (*never*) to 5 (*every day*).

Table 3. Results of regression analyses testing the research hypotheses: Dark Triad and job control as the moderators of the relationship between job stressor and CWB

	Counterproductive Work Behavior		
	<i>B</i>	<i>SE</i>	95% <i>CI</i>
Constant	.16	.06	[−.06; .38]
Age	.01	.02	[−.03; .06]
Gender	.05	.05	[−.06; .15]
Job seniority	.03	.03	[−.03; .08]
Need of Approval	.17***	.03	[.13; .23]
Bullying (BUL)	.39***	.03	[.34; .44]
Dark Triad (DC)	.26***	.03	[.20; .31]
Job Control (JC)	−.01	.03	[−.06; .04]
BUL x DT	.29***	.02	[.24; .33]
BUL x JC	.09**	.03	[.03; .15]
DT x JC	.04	.03	[−.01; .09]
BUL x DT x JC	.15***	.02	[.10; .20]

* ; ** ; *** .

and low job control ($t = 3.04; p < .01$). For individuals with high DT, the level of CWB was not different regardless of whether job control was low or high ($t = 1.18; p = .24$). The findings fully confirmed **H4**.

Discussion

The purpose of the study was to learn the mechanisms of CWB development, considering both organizational and personality factors. The importance of an interactive approach combining features of the work environment and personality traits to explain harmful behavior in an organization has been emphasized for several years now, e.g. in the “popcorn hypothesis” (Folger & Skarlicki, 1998), or in a more general S–E model (Spector & Fox, 2005). In the majority of previous studies on CWB, researchers focused on the job stressors’ interaction with job resources (Fox et al., 2001), or the job stressors’ interaction with personality traits (e.g. Bowling & Eschleman, 2010), slightly neglecting the interaction of the following three factors: job stressors x job resources x personality traits. The presented study was aimed at filling this gap. Earlier studies on the S–E model indicated that social stressors are a really strong predictor of CWB (Bruk-Lee & Spector, 2006), while job control is the basic resource at work moderating CWB, and that is why the study takes bullying at the workplace into account as a stressor and job control as an organizational resource. The Dark Triad covering Machiavellianism, narcissism and psychopathy was included in the study as personality traits. Although Spector and Fox did not refer directly to the “dark side of personality” in their model, studies by other authors reveal that it is an important indicator of non-ethical behavior in an organization (e.g. O’Boyle et al., 2012). The main objective of the presented studies was to test the direct effect of bullying, as well as the moderation effects of DT, job control and DT x job control on CWB.

The results of the studies showed that employees who experience organizational mistreatment and have a high level of the DT are more often involved in CWB. The obtained results comply with the results of previous tests revealing the relationship between CWB and abusive supervision (e.g. Sulea et al., 2013; Wei & Si, 2013), as well as high DT (e.g. O’Boyle et al., 2012; Wu & Lebreton, 2011). Job control was not directly related to CWB. It also turned out that the DT moderate a negative impact of job stressors on CWB. More precisely, employees who experienced bullying at work tended to behave in a counterproductive way but only when their DT level was high. More detailed analyses conducted for the three traits separately showed that each of them moderates negative effect of bullying in similar way. The obtained results correspond to previous studies where a “dark personality trait” – e.g. narcissism (Penney & Spector, 2002) and psychopathy (Boddy, 2014) intensified the negative effect of job stressors on CWB. Getting involved in harmful activities, in the case of bad treatment in an organization, can be a particularly efficient way to cope with stress

for people with exacerbated Dark Triad characteristics, and to some extent has a “therapeutic” effect. The health promoting impact of counterproductive behavior was observed in several research studies (Krischer et al., 2010; Shoss et al., 2015; Wilson et al., 2015), but the Dark Triad features were not taken into account.

According to the Spector and Fox model, job control buffers the negative effect of job stressors and reduces CWB (e.g. Spector, 2011; Spector & Fox, 2005). According to their suggestion, human aggression, whether against other people or inanimate objects, tends to be a response to a sense of helplessness. Allen and Greenberg (1980) argue that under stressful conditions, individuals with a lower sense of job control tend to modify their environment and restore control through destructive acts. Empirical findings have not supported this hypothesis. To the contrary, a few studies reveal that high job control intensifies the negative effect of job stressors (e.g. Fox et al., 2001; Smoktunowicz, Baka, Cieślak, Nichols et al., 2015; Tucker et al., 2009). The results obtained in these studies were in agreement with the results of the abovementioned studies. Employees with a sense of job control often get more involved in organizationally harmful behavior in cases of organizational mistreatment than employees with a low sense of job control. The moderating effect of job control turned out to be much weaker than the moderating effect of “dark personality”.

The data are quite interesting as they show that a high sense of job control, which according to many theories is a factor facilitating the effective coping with stress, under some circumstances can have negative effects for the organization. A stronger sense of control can be linked to fewer organizational constraints and a greater leeway for action, which creates more opportunities for engagement in CWBs and decreases the risk that such behavior will be detected and punished. This is supported by some studies, which show a positive correlation between job control and CWB (Wilson et al., 2015). As Fox and Spector argue (2006), in order to affect the perception of stressors, there is a need to maintain control over the environmental stressor itself. Having autonomy, for instance, in setting workloads may be effective in reducing the perception of workload as a stressor, but it will be unlikely to have much impact on social stressors. This is an important issue because there has been little attempt to assess control that is directly relevant to stressors. In most cases, control instruments measure a limited range of control, focused mainly on autonomy in doing the job.

An alternative explanation of the obtained result refers to Warr’s Vitamin Model (1990). This assumes that the relationship between the sense of control and outcomes has a curvilinear nature – stress may occur under insufficient or excessive control. One can then assume that under stressful situations, excessive job control may exacerbate stress. High job control begins to act as a stressor and not as a resource. CWB can be a way to cope with stress. Employees’ freedom of action fosters resorting to this kind of measures and reduces the probability of negative consequences of such measures.

The most interesting part of the study concerns the moderated moderation effect. The results of the study showed that a combination of a high level of organizational mistreatment, high level of the Dark Triad features and a strong job control results in a higher level of CWB. The results confirm the rule suggested by some researchers that people with a “dark personality” feel well in organizations with poor hierarchy, a fuzzy structure and with no clear rules of process (Grijalva & Newman, 2015; Cohen, 2016; O’Boyle et al., 2012). In such organizational structures it is often the case that the transparency of staff actions is low, the possibility to identify non-ethical behavior and the potential consequences of such behavior is minor, while the level of autonomy and freedom of action is high. Such a combination of factors may contribute to dysfunctional behavior becoming a behavioral response to organizational mistreatment in employees with high DT and high job control.

It should be highlighted that the social approval effect was controlled in the conducted analyses. An analysis of the correlation indicated that social approval is negatively related to counterproductive behavior, as is the Dark Triad features. This means that the more the studied population was concerned about their image, the more rarely they admitted to performing organizationally harmful actions and the less prone they were to admit having personality traits socially perceived as undesirable. One can then suspect that the relationship between the job stressor/DT and CWB is partly modified by the impact of variable social approval. Conversely, despite the existence of a direct relationship between the need for social approval and counterproductive behavior, after introducing the index of the need for social approval (as a controlled variable), both the direct relationships between job stressor/Dark Triad characteristics, and counterproductive behavior and moderation effects were still statistically significant.

Limitations and future directions

To conclude, it is worthwhile mentioning the limitations of the current study. One has to do with the measurement method. The self-reporting tool has been repeatedly criticised for measuring declarations rather than concrete behaviour, or, to be more precise, the frequency with which respondents admit to engaging in counter-productive work behaviour. Respondent declarations are affected by many variables (Fox, Spector, Goh, Bruursema & Kessler, 2012).

Researchers also point out that the mean levels obtained for most items in CWB questionnaires tend to be low. The reason for this is that respondents are unlikely to admit that they engage in such behaviour (Sackett & DeVone, 2001). Certain CWBs (e.g. theft) are regulated by law and employees tend to deny them for fear of punishment; in other cases, however, they simply find it difficult to admit to wrongdoing, even to themselves. To do so, would probably involve the rise of negative thoughts about themselves and, as a consequence, experiencing various unpleasant emotions.

Conversely, the alternative CWB measurement method, based on reports by superiors and colleagues, also has its limitations. As stated by Fox et al. (2007), superiors and

colleagues are likely to detect only some counterproductive acts, since these are mostly carried out in secret. In a meta-analysis study, Berry et al. (2012) compared CWB data obtained from self-reports and evaluations by superiors and colleagues. The mean corrected correlation coefficient for CWBs measured by these two methods was shown to be high and equal to $\rho = .38$. In addition, mean values for CWBs measured by self-reporting scales proved higher than those reported by other employees (Berry et al., 2012). This seems to suggest that superiors and colleagues tend to underestimate the occurrence of CWB. The figures can be treated as an argument to support the greater validity of self-reports as compared to external evaluation.

Another limitation has to do with the fact that the analysis of mediation and moderation in the current study was based on cross-sectional surveys, rather than longitudinal research or the experimental model. Negative organisational behaviours are very dynamic and emerge as a result of long-term job stressors, resources and the emotions that they engender. Longitudinal research is needed to capture that dynamic, and a break of at least several months is recommended between individual measurements. Such studies would be particularly called for in any future research into the mechanisms behind the development of CWB. In future research it would be useful to investigate also which kinds of CWB are taken by employees with high levels of DT and job control in conditions of high occupational stress. It is likely that they will more engage in active forms of CWB (e.g. abuse sabotage and theft) than passive ones (e.g. withdrawal and production deviance).

References

- Allen, V. L., & Greenberg, D. B. (1980). Destruction and perceived control. In A. Baum & J. E. Singer (Eds.), *Applications of personal control* (pp. 85–109). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Baka, L. (2015). How do negative emotions regulate the effects of workplace aggression on counterproductive work behaviours? *Polish Psychological Bulletin*, *46*, 325–336. doi: 10.1515/ppb-2015-0040
- Berry, C. M., Carpenter, N. C., & Barratt, C. L. (2012). Do other-reports of counterproductive work behavior provide an incremental contribution over self-reports? A meta-analytic comparison. *Journal of Applied Psychology*, *97*(3), 613–636. doi: 10.1037/a0026739
- Birenbaum, M., Montag, J. (1989). Style and substance in social desirability scales. *European Journal of Personality*, *3*, 47–59. doi: http://dx.doi.org/10.1027//1015-5759.17.3.222
- Boddy, C. R. (2014). Corporate Psychopaths, Conflict, Employee Affective Well-Being and Counterproductive Work Behaviour. *Journal of Business Ethics*, *121*, 107–121. doi: 10.1007/s10551-013-1688-0
- Bowling, N. A., & Eschleman, K. J. (2010). Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. *Journal of Occupational Health Psychology*, *12*, 91–103. doi: 10.1037/a0017326
- Bruk-Lee, V., & Spector, P. E. (2006). The social stressors-counterproductive work behaviors link: Are conflicts with supervisors and co-workers the same? *Journal of Occupational Health Psychology*, *11*, 145–156. doi: http://dx.doi.org/10.1037/1076-8998.11.2.145
- Chao, J. M. C., Cheung, F. Y. L., & Wu, A. M. S. (2011). Psychological contract breach and counterproductive workplace behaviors: Testing moderating effect of attribution style and power distance. *International Journal of Human Resource Management*, *22*(4), 763–777. doi: http://dx.doi.org/10.1080/09585192.2011.555122
- Christie, R., & Lehmann, S. (1970). The structure of Machiavellian orientations. In R. Christie & F. L. Geis, *Studies in Machiavellianism*. New York: Academic Press.

- Cohen, A. (2016). Are they among us? A conceptual framework of the relationship between the dark triad personality and counterproductive work behaviors (CWBs). *Human Resources Management, 26*, 69–85. <http://dx.doi.org/10.1016/j.hrmr.2015.07.003>
- Dawson, J. F. (2013). Moderation in management research: What, why, when and how. *Journal of Business and Psychology*. Advance online publication.
- DeShong, H. L., Grant, D. M., & Mullins-Sweatt, S. N. (2015). Comparing models of counterproductive workplace behaviors: The five-factor model and the dark triad. *Personality and Individual Differences, 74*, 55–60. doi: <https://doi.org/10.1016/j.paid.2014.10.001>
- Drwal, R. L., & Wilczynska, J. (1995). Social Approval Questionnaire. In R. L. Drwal, P. Brzozowski, & P. Oles (Eds.), *Adaptation of Personality Questionnaires* (pp. 57–66). Warsaw: Polish National Publishing House PWN.
- Edwards, J. R., Caplan, R. D., & Harrison, R. V. (1998). Person-environment fit theory: Conceptual foundations, empirical evidence, and directions for future research. In C. L. Cooper (Eds.), *Theories of organizational stress* (pp. 28–67). Oxford: Oxford University Press.
- Einarsen, S. (1999). The nature and causes of bullying at work. *International Journal of Manpower, 20*, 16–27. doi: <http://dx.doi.org/10.1108/01437729910268588>
- Einarsen, S., & Raknes, B. (1997). Harassment in the workplace and the victimization of men. *Violence and Victims, 12*, 247–263.
- Ferguson, M., Carlson, D., Hunter, E. M., & Whitten, D. (2012). A two-study examination of work-family conflict, production deviance and gender. *Journal of Vocational Behavior, 81*, 245–258. doi: [10.1016/j.jvb.2012.07.004](http://dx.doi.org/10.1016/j.jvb.2012.07.004)
- Fida, R., Paciello M., Tramontano, C., Barbaranelli, C., & Farnese, M. L. (2015). “Yes, I Can”: The Protective Role of Personal Self-Efficacy in Hindering Counterproductive Work Behavior Under Stressful Conditions. *Anxiety, Stress & Coping, 5*, 479–99. doi: [10.1080/10615806.2014.969718](http://dx.doi.org/10.1080/10615806.2014.969718)
- Folger, R., & Skarlicki, D. P. (1998). A popcorn metaphor for employee aggression. In R. W. Griffin, A. O’Leary-Kelly, & J. M. Collins (Eds.), *Dysfunctional Behavior in Organizations: Violent and Deviant Behavior*. Stamford, CT: JAI Press.
- Fox, S., & Spector, P. E. (2006). The many roles of control in a stressor – emotion theory of counterproductive work behavior. In P. L. Perrewe, D. & C. Ganster (Eds.), *Employee Health, Coping and Methodologies*. Amsterdam: Elsevier.
- Fox, S., Spector, P. E., Goh, A., & Bruursema, K. (2007). Does your co-worker know what you’re doing? Convergence of self and peer-reports of counterproductive work behavior. *International Journal of Stress Management, 14*, 41–60.
- Fox, S., Spector, P., Goh, A., Bruursema, K., & Kessler, S. (2012). The deviant citizen: Measuring potential positive relations between counterproductive work behaviour and organizational citizenship behavior. *Journal of Occupational and Organizational Psychology, 85*, 199–220. doi: [10.1111/j.2044-8325.2011.02032.x](http://dx.doi.org/10.1111/j.2044-8325.2011.02032.x)
- Fox, S., Spector, P. E., & Miles, D. (2001). Counterproductive work behavior (CWB) in response to job stressors and organizational justice: Some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behavior, 59*, 1–19. doi: <https://doi.org/10.1006/jvbe.2001.1803>
- Grijalva, E., & Harms, P. D. (2014). Narcissism: An integrative synthesis and dominance complementarity model. *Academy of Management Perspectives, 28*, 108–127. doi: <http://dx.doi.org/10.5465/amp.2012.0048>
- Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the Job Demand-Control-Support model and psychological well-being. *Work & Stress, 24*, 2, 1–35. doi: <http://dx.doi.org/10.1080/02678371003683747>
- Hare, R. D., & Neumann, C. S. (2009). Psychopathy: Assessment and forensic implications. *Canadian Journal of Psychiatry, 54*(12), 791–802.
- Hayes, A. F. (2013). *An introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513–524. doi: [10.1037/0003-066X.44.3.513](http://dx.doi.org/10.1037/0003-066X.44.3.513)
- Jonason, P. K., Slomski, S., & Partyka, J. (2012). The Dark Triad at work. How toxic employees get their way. *Personality and Individual Differences, 52*, 449–453. doi: [10.1002/job.1894](http://dx.doi.org/10.1002/job.1894)
- Jonason, P., & Webster, G. (2010). The dirty dozen: A concise measure of the Dark Triad. *Psychological Assessment, 22*, 420–432. doi: [10.1037/a0019265](http://dx.doi.org/10.1037/a0019265)
- Karasek, R. (1985). *Job Content Questionnaire and user’s guide*. Lowell, MA, USA: Department of Work Environment: University of Massachusetts.
- Karasek, R. A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285–308.
- Kernberg, O. F. (1989). An ego psychology object relations theory of the structure and treatment of pathologic narcissism: An overview. *Psychiatric Clinics of North America, 12*, 723–729.
- Kryschner, M. M., Penney, L. M., & Hunter, E. M. (2010). Can counterproductive work behaviors be productive? CWB as emotion – focused coping. *Journal of Occupational Health Psychology, 15*, 154–166. doi: [10.1037/a0018349](http://dx.doi.org/10.1037/a0018349)
- Marcus, B., & Schuler, H. (2004). Antecedents of counterproductive behavior at work: A general perspective. *Journal of Applied Psychology, 89*, 647–660. doi: [10.1037/0021-9010.89.4.647](http://dx.doi.org/10.1037/0021-9010.89.4.647)
- Meier, L. L., & Semmer, N. K. (2013). Lack of reciprocity, narcissism, anger, and instigated workplace incivility: A moderated mediation model. *European Journal of Work & Organizational Psychology, 22*(4), 461–475. doi: <http://dx.doi.org/10.1080/1359432X.2012.654605>
- Meurs, J. A., Fox, S., Kessler, S., & Spector, P. E. (2013). It’s all about me: The role of narcissism in exacerbating the stressor-counterproductive work behavior relationship. *Work & Stress, 27*, 368–382. doi: <http://dx.doi.org/10.1080/02678373.2013.849776>
- Moore, C., Detert, J. R., Trevino, L. K., Baker, V. L., & Mayer, D. M. (2012). Why employees do bad things: Moral disengagement and unethical organizational behavior. *Personnel Psychology, 65*, 1–48. doi: [10.1111/j.1744-6570.2011.01237.x](http://dx.doi.org/10.1111/j.1744-6570.2011.01237.x)
- Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry, 12*, 177–196. doi: http://dx.doi.org/10.1207/S15327965PLI1204_1
- O’Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-analysis of the Dark Triad and work behavior. A social exchange perspective. *Journal of Applied Psychology, 97*, 557–579. doi: [10.1037/a0025679](http://dx.doi.org/10.1037/a0025679)
- Paulhus, D. L., & Williams, K. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and Psychopathy. *Journal of Research in Personality, 36*, 556–568. doi: [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Penney, L. M., & Spector, P. E. (2005). Job stress, incivility, and counterproductive work behavior (CWB): The moderating role of negative affectivity. *Journal of Organizational Behavior, 26*, 777–796. doi: [10.1002/job.336](http://dx.doi.org/10.1002/job.336)
- Penney, L. M., & Spector, P. E. (2002). Narcicism and counterproductive work behavior (CWB). Do bigger egos mean bigger problems? *International Journal of Selection Assessment, 10*, 126–134. doi: [10.1111/1468-2389.00199](http://dx.doi.org/10.1111/1468-2389.00199)
- Piotrowski, C. (2018). The Dark Triad in Leadership Research. The Adult Bully Syndrome. *Psychology and Education. An Interdisciplinary Journal, 55*, 3–4.
- Rauthmann, J. F., & Will, T. (2011). Proposing a multidimensional Machiavellianism conceptualization. *Social Behavior and Personality, 39*, 391–404. doi: <https://doi.org/10.2224/sbp.2011.39.3.391>
- Sackett, P. R., & DeVore, C. J. (2001). Counterproductive behaviors at work. In N. Anderson, D. S. Ones, H. K. Sinangil, & C. Viswesvaran (Eds.), *Handbook of industrial, work and organizational psychology Vol. 1*. Thousand Oaks, CA: Sage.
- Salgado, J. (2002). *The Big Five personality dimensions and counterproductive behavior*. *International Journal of Selection and Assessment, 10*, 117–125. doi: [10.1111/1468-2389.00198](http://dx.doi.org/10.1111/1468-2389.00198)
- Scherer, K. T., Baysinger, M., Zolynsky, D., & LeBreton, J. M. (2013). Predicting counterproductive work behaviors with sub-clinical psychopathy. Beyond the five factor model of personality. *Personality and Individual Differences, 55*, 300–305. doi: <http://dx.doi.org/10.1016/j.paid.2013.03.007>

- Shoss, M. K., Jundt, D. K., Kobler, A., & Reynolds, C. (2015). Doing Bad to Feel Better? An Investigation of Within and Between-Person Perceptions of Counterproductive Work Behavior as a Coping Tactic. *Journal of Business Ethics, 137*, 571–587. doi: 10.1007/s10551-015-2573-9
- Skarlicki, D. P., & Folger, R. (1997). Retaliation in the workplace: The roles of distributive, procedural, and interactional justice. *Journal of Applied Psychology, 82*, 434–443. doi: 10.1037/0021-9010.82.3.434
- Smoktunowicz, E., Baka, L., Cieslak, R., Nichols, C. F., Benight, C. C., & Luszczynska, A. Explaining Counterproductive Work Behaviors Among Police Officers: The Indirect Effects of Job Demands are Mediated by Burnout and Moderated by Job Control and Social Support. *Human Performance, 28*, 332–350. doi: 10.1080/08959285.2015.1021045
- Spain, S. M., Harms, P. D., & Lebreton, J. M. (2014). The dark side of personality at work. *Journal of Organizational Behavior, 1*, 1–20. doi: 10.1002/job.1894
- Spector, P. E. (2011). The relationship of personality to counterproductive work behavior (CWB): An integration of perspectives. *Human Resource Management Review, 21*, 342–352. doi: https://doi.org/10.1016/j.hrmr.2010.10.002
- Spector, P. E., & Fox, S. (2005). The Stressor-Emotion Model of Counterproductive Work Behavior (CWB). In S. Fox & P. E. Spector (Eds.), *Counterproductive Work Behavior: Investigations of Actors and Targets*. Washington, DC: APA Press. doi: https://doi.org/10.1016/j.hrmr.2010.10.002
- Spector, P. E., Fox, S., Penney, L. M., Bruursema, K., Goh, A., & Kessler, S. (2006). The dimensionality of counterproductivity: Are all counterproductive behaviors created equal? *Journal of Vocational Behavior, 68*, 446–460. doi: 10.1016/j.jvb.2005.10.005
- Sulea, C., Maricutoiu, L., Zaborila Dumitru, C., & Pitariu, H. D. (2010). Predicting counterproductive work behaviors: a meta-analysis of their relationship with individual and situational factors. *Psychology of Human Resources, 8*(1), 66–81. doi: http://dx.doi.org/10.1007/s10551-012-1326-2
- Sulea, C., Fine, S., Fischmann, G., Sava, F. A., & Dumitru, C. (2013). Abusive supervision and counterproductive work behaviors: The moderating effects of personality. *Journal of Personnel Psychology, 12*, 196–200. doi: 10.1027/1866-5888/a000097
- Tucker, J. S., Sinclair, R. R., Mohr, C. D., Adler, A. B., Thomas, J. L., & Salvi, A. D. (2009). Stress and counterproductive work behavior: Multiple relationships between demands, control, and soldier indiscipline over time. *Journal of Occupational Health Psychology, 14*, 257–271. doi: 10.1037/a0014951
- Van den Broeck, A., Sulea, C., Vander Elst, T., Fischmann, G., Iliescu, D., & De Witte, H. (2014). The mediating role of psychological needs in the relation between qualitative job insecurity and counterproductive work behavior. *Career Development International, 19*, 525–547. doi: http://dx.doi.org/10.1108/CDI-05-2013-0063
- Wei, F., & Si, S. (2013). Tit for tat? Abusive supervision and counterproductive work behaviors. The moderating effects of locus of control and perceived mobility. *Asian Journal of Management, 30*, 281–296. doi: 10.1007/s10490-011-9251-y
- Wilson, R. A., Perry, S. J., Witt, L. A., & Griffeth, R. W. (2015). The exhausted short-timer: Leveraging autonomy to engage in production deviance. *Human Relations, 68*(11), 1693–1711. doi: 10.1177/0018726714565703
- Wu, J., & LeBreton, J. M. (2011). Reconsidering the dispositional basis of counterproductive work behavior: The role of aberrant personality traits. *Personnel Psychology, 64*, 593–626. doi: 10.1111/j.1744-6570.2011.01220.
- Zhou, Z. E., Meier, L. L., & Spector, P. (2014). The role of personality and job stressors in predicting counterproductive work behavior: A three-way interaction. *International Journal of Selection and Assessment, 9*, 286–296. doi: 10.1111/ijsa.12077