A meta-analysis of the relations between personality and workplace deviance: Big Five versus HEXACO

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ABSTRACT

We present a comprehensive meta-analysis of the relations between personality and workplace deviance. More specifically, we compared the validities of the Big Five domains with those of the HEXACO domains for predicting workplace deviance. We found that HEXACO Honesty-Humility shows the strongest relation with workplace deviance, followed by Conscientiousness (Big Five and HEXACO) and Agreeableness (Big Five and HEXACO). Big Five Neuroticism (positively) and HEXACO Emotionality (negatively) also correlate with workplace deviance. However, HEXACO and Big Five Openness to Experience and Extraversion do not contribute substantially to the prediction of workplace deviance. For the most part, these results support the conceptual differences between the Big Five and the HEXACO personality models. We also found that the HEXACO domains (31.97%) explain more variance in workplace deviance than the Big Five domains (19.05%). Consequently, the HEXACO model appears to be a viable alternative to the Big Five model when predicting and explaining levels of workplace deviance. Theoretical and practical implications of the findings as well as limitations and future research ideas are discussed.

1. Introduction

The prevention and prediction of workplace deviance has been a major focus for researchers and practitioners due to its high (financial) costs for organizations (e.g., Henle et al., 2005). An important predictor of workplace deviance is personality (e.g., Berry, Ones, & Sackett, 2007), which is usually captured with the Big Five (B5) or the Five-Factor Model of personality (FFM).[1] Previous meta-analyses have shown that the personality domains of Conscientiousness, Agreeableness, and Neuroticism are the best predictors of workplace deviance (Berry, Carpenter, & Barratt, 2012; Berry, Ones, & Sackett, 2007; Salgado, 2002). However, many unresolved issues remain in examining the

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[1] The B5 is based on the lexical approach to personality, whereas the FFM is based on a factor analytic examination of personality using the NEO Personality Inventory (McCrae & Costa, 1992). Because of these different approaches, some differences exist between the B5 and the FFM about how to best name and interpret the personality domains and about which facets belong to which personality domain. Nevertheless, most scholars agree that they are overall highly similar (e.g., Ashton & Lee, 2005). In this meta-analysis, we will therefore treat the B5 and the FFM interchangeably to represent research on personality which assumes that personality is best represented using five separate domains (from here on referred to as B5).

relations between personality domains and workplace deviance, and the current meta-analysis aims to resolve these. First, these previous meta-analyses (Berry et al., 2012; Berry, Ones, et al., 2007; Salgado, 2002) were focused on other research questions (e.g., comparing the validity of self- and other-ratings of workplace deviance; Berry et al., 2012), included only a limited number of effect sizes, and found substantially different effect sizes for some of the B5 personality domains. For example, Salgado (2002) found only a small correlation for Conscientiousness ($r = -0.16$), whereas Berry, Ones, et al. (2007) and Berry et al. (2012) report a moderate correlation with self-rated workplace deviance ($r = -0.31$). Such unstable findings are not surprising given the small number of effect sizes that were used in these previous meta-analyses, but they can lead to ambiguities for researchers and practitioners about which personality domains to choose when predicting workplace deviance. The current meta-analysis will resolve these inconsistencies by including more effect sizes that will result in more precise and conclusive meta-analytic effect size estimates. Second, whereas the B5 has been the dominating model of personality for the past decades, considerable evidence has accumulated in favor of an alternative representation of the personality structure, known as the HEXACO model (e.g., Ashton, Lee, & De Vries, 2014; Lee & Ashton, 2004). Although primary studies have used the HEXACO domains to predict workplace deviance (e.g., Chirumbolo, 2015; Louw, Dunlop, Yeo, & Griffin, 2016), the present meta-analysis is the first to include the HEXACO domains to compare their predictive validities to those of the B5 domains.

The goal of the present meta-analysis therefore is to provide a comprehensive meta-analytic review of the relations between B5 and HEXACO personality domains and workplace deviance, including a larger number of studies compared to previous meta-analyses (Berry et al., 2012; Berry, Ones, et al., 2007; Salgado, 2002) that allow for more reliable and valid conclusions. More specifically, the current meta-analysis contributes to the literature in four ways. First, we extend the personality and workplace deviance literature by providing the first meta-analytic overview and comparison of the validities of the B5 and the HEXACO personality domains. As such, our findings will help researchers and practitioners optimize the prediction and prevention of workplace deviance. Second, based on a priori expectations, we provide a higher-powered test of important moderators of the relations between personality and workplace deviance as compared to previous meta-analyses (i.e., workplace deviance facets and the source of the workplace deviance rating). Third, as previous meta-analyses were mostly descriptive in nature, we extend the field by providing a theoretical discussion of the findings based on multiple theoretical accounts that can explain the relations between personality and workplace deviance. And last, to the best of our knowledge, our study is the first to test the conceptual similarities and differences between the B5 and the HEXACO personality model based on their relations with a specific external outcome, thus carrying important implications for personality theory. Taken together, the current meta-analysis extends previous meta-analyses by providing more precise effect size estimates and higher-powered tests of important moderators, by including the HEXACO and comparing its relations with workplace deviance to those of the B5, and by providing a theoretical discussion of the findings.

1.1. Workplace deviance

Workplace deviance (or counterproductive work behavior) has been defined as "voluntary behavior that violates significant organizational norms and in so doing threatens the well-being of an organization, its members, or both" (Robinson & Bennett, 1995, p. 556). Such behavior has severe negative effects on the well-being and success of organizations and their employees (e.g., Barling, Dupré, & Kelloway, 2009; Bowling, Burns, Stewart, & Gruys, 2011). Workplace deviance is often divided into two facets: Organizational workplace deviance (OD) and interpersonal workplace deviance (ID) (Bennett & Robinson, 2000). OD consists of behaviors directed toward the organization, such as stealing, damaging company property, or intentionally working slowly. ID consists of behaviors directed toward members of the organization, such as gossiping, bullying, or harassing coworkers. Both forms are costly and detrimental for the organization and can vary in severity (Henle et al., 2005; Sackett, 2002). Workplace deviance can be caused by the organizational environment (e.g., by abusive supervision; Mitchell & Ambrose, 2007) and by stable individual differences (e.g., personality; Hastings & O'Neill, 2009). Although various individual differences have been examined as predictors of workplace deviance (e.g., age, gender, work experience), personality is the most prominent individual difference predictor of workplace deviance (e.g., Berry et al., 2012; Ng, Lam, & Feldman, 2016). As such, personality questionnaires are a useful tool in job selection to screen an applicant's proneness to workplace deviance (e.g., Ones, Dilchert, Viswesvaran, & Judge, 2007).

1.2. Personality

Personality describes "the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptations to, the intrapsychic, physical, and social environments" (Larsen & Buss, 2005, p. 4). The most common approach to study the structure of personality is through the so-called lexical approach, which posits that important human personality differences are encoded in sufficiently encompassing dictionaries in all natural languages (Goldberg, 1982; Goldberg, 1990). Up until recently, consensus existed among personality scholars that five domains capture most of the personality variance. The B5 divides personality into the following five domains: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.[2]

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[2] Although Emotional Stability is the official term used in the Big Five personality model, we will refer to it as Neuroticism, which is the opposite pole of the Emotional Stability domain, to better align it directionally with HEXACO Emotionality. Whenever studies reported correlations for the relation between Emotional Stability and workplace deviance, we reversed those to reflect correlations for Neuroticism (e.g., $r = -0.23$ for the relation between Emotional Stability and workplace deviance was reversed to $r = 0.23$ for the relation between Neuroticism and workplace deviance). This also holds for all effect size estimates from previous meta-analyses presented below.

Although the B5 is the predominant model of personality, re-analyses of lexical data that have become available from at least a dozen languages, including English, offer support for six cross-culturally replicable factors of personality (Ashton et al., 2014; De Raad et al., 2014; Saucier, 2009), which are commonly known by the HEXACO acronym: Honesty-Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to Experience. The HEXACO domains Extraversion, Conscientiousness, and Openness to Experience are highly similar to their B5 counterparts. The other three domains – Honesty-Humility, Emotionality, and Agreeableness – differ in important ways from the Neuroticism and Agreeableness domains of the B5 (Ashton & Lee, 2008). More specifically, HEXACO Emotionality and Agreeableness are rotated variants of B5 Neuroticism and Agreeableness. This re-rotation is accompanied by a shift in the content of these domains. For example, the irritability and anger content that is included in B5 Neuroticism is part of Agreeableness in the HEXACO model. On the other hand, B5 Agreeableness captures some of the sentimentality content that is part of the HEXACO Emotionality factor. These conceptual differences may influence their relations with workplace deviance. Furthermore, Honesty-Humility reflects the tendency to be fair and genuine in dealing with others (Ashton & Lee, 2007), and low levels of Honesty-Humility are associated with harmful effects upon individuals and upon society and humanity as a whole, such as theft, fraud, workplace delinquency, and vandalism (Ashton & Lee, 2008). It has been suggested that this factor, which is not captured by any of the B5 domains, is especially important in predicting workplace deviance (Ashton et al., 2014; Ashton, Lee, & Son, 2000).

1.3. Personality and workplace deviance

Given that the B5 and HEXACO personality domains of Extraversion, Conscientiousness, and Openness to Experience are conceptually very similar, we expect similar relations between these three personality domains and workplace deviance. In line with previous meta-analytic results, we do not expect Openness to Experience (Salgado, 2002[3]: $r = 0.10$; Berry, Ones, et al., 2007[4]: $r = -0.06$) and Extraversion (Salgado, 2002: $r = 0.01$; Berry, Ones, et al., 2007: $r = -0.03$) to relate to workplace deviance. Because individuals scoring high on Conscientiousness are hard-working, disciplined, and responsible, and because previous meta-analytic results indicated a negative relation between Conscientiousness and workplace deviance (Salgado, 2002: $r = -0.16$; Berry, Ones, et al., 2007[4]: $r = -0.31$), we expect Conscientiousness to negatively relate to workplace deviance. However, the exact magnitude of this effect remains ambiguous, rendering a comprehensive meta-analysis of this relation necessary.

Agreeableness is expected to relate negatively to workplace deviance because individuals scoring high on this domain are compassionate, patient, and trusting. Meta-analytic evidence indeed indicates that B5 Agreeableness correlates negatively with workplace deviance (Salgado, 2002: $r = -0.13$; Berry, Ones, et al., 2007: $r = -0.35$), but these previous effect size estimates differed substantially. B5 Agreeableness captures some of the variance associated with HEXACO Honesty-Humility (Ashton & Lee, 2005), which has been found to be an important predictor of workplace deviance (Lee, Ashton, & De Vries, 2005). However, compared to HEXACO Agreeableness, B5 Agreeableness lacks a (reversed) anger facet which is part of B5 Neuroticism and which has been shown to correlate positively with workplace deviance (Hastings & O'Neill, 2009). We suspect that the inclusion of Honesty-Humility variance outweighs the exclusion of (reversed) anger-related variance, and therefore expect that B5 Agreeableness exhibits a stronger negative relation with workplace deviance than HEXACO Agreeableness. Previous findings from primary studies are mixed (e.g., Lee, Ashton, & De Vries, 2005), rendering a meta-analytic examination of this relation even more important.

As noted above, B5 Neuroticism contains variance associated with anxiety and depression and variance associated with irritability and anger. Anxiety may be associated with lower levels of workplace deviance, whereas anger may be associated with higher levels of workplace deviance (Hastings & O'Neill, 2009). Previous meta-analyses remain ambiguous about the relation between Neuroticism and workplace deviance as well, reporting either a non-significant (Salgado, 2002: $r = 0.04$) or a positive relation between B5 Neuroticism and workplace deviance (Berry, Ones, et al., 2007: $r = 0.23$). A new meta-analysis on this relation is therefore necessary to determine the exact magnitude and direction of the relation between Neuroticism and workplace deviance. Individuals scoring high on HEXACO Emotionality combine higher fearfulness and anxiety with a higher need for emotional support and a tendency to form strong bonds with others. Therefore, we expect that HEXACO Emotionality shows a moderately strong negative association with workplace deviance. This aligns with the finding that individuals scoring high on HEXACO Emotionality are less likely to be deviant because they are more likely to be afraid of retributions (Van Gelder & De Vries, 2012).

Last, we expect HEXACO Honesty-Humility to show the strongest negative correlation with workplace deviance out of all included personality domains because individuals scoring high on this trait tend to be honest, fair-minded, and to lack greed. These individuals have also been found to be more cooperative (Thielmann & Hilbig, 2014), less likely to sexually harass someone (Lee, Gizzarone, & Ashton, 2003), and less likely to be delinquent and criminal (De Vries & Van Gelder, 2013, 2015).

1.4. Moderating variables

There are two methodological moderators that have important implications for our understanding of the relations between personality and workplace deviance: workplace deviance facets and the source of the workplace deviance ratings.

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[3] The signs for the results reported in Salgado (2002) are reversed because this meta-analysis measured the relations between personality and a *lack of* deviant behavior. Salgado (2002) reports correlations that are corrected for range restriction.

[4] These correlations refer to those with self-rated workplace deviance and are based on data from Berry, Ones, et al. (2007) but are reported in Berry et al. (2012).

1.4.1. Workplace deviance facets

Meta-analytic evidence indicates that ID and OD correlate strongly, but not too strongly with each other ($r = 0.52$) and that they show different correlations with external variables (Berry, Ones, et al., 2007). In the current meta-analysis, we will examine if ID and OD correlate differently with personality domains, indicating the usefulness of separating ID and OD when using personality to predict workplace deviance. We expect to find different correlations with ID and OD for Agreeableness and Conscientiousness.

Agreeableness forms one of the dimensions of Wiggins' (1979) interpersonal circumplex model, and this domain is suggested to directly determine the quality of interpersonal, as opposed to impersonal, interactions (McCrae & Costa, 1989). Accordingly, research has shown that Agreeableness is a valid predictor of prosocial behavior (Habashi, Graziano, & Hoover, 2016), and of performance in jobs involving interpersonal interactions and team work (Mount, Barrick, & Stewart, 1998). Indeed, Berry, Ones, et al. (2007)[5] found Agreeableness to be more strongly correlated with ID ($r = -0.36$, $k = 10$) than with OD ($r = -0.25$, $k = 8$). However, Berry and colleagues did not formally test whether the difference between these correlations was significant. In the present meta-analysis, we provide a high-powered test. Based on the above arguments and the findings of Berry, Ones, et al. (2007), we expect Agreeableness to be more strongly related to ID than OD.

Conscientiousness is an important trait when it comes to behaviors directed at the organization. Conscientious employees are more likely to follow rules, to work hard, to take initiatives (McCrae & Costa, 1992), and to adhere to organizational norms (Marcus & Schuler, 2004; Mount, Ilies, & Johnson, 2006). As Conscientiousness is not intrinsically interpersonal (McCrae & Costa, 1989), we expect its relation with OD to be stronger than its relation with ID. Indeed, findings of Berry, Ones, et al. (2007) hint at this direction: they found Conscientiousness to correlate more strongly with OD ($r = -0.34$, $k = 8$) than with ID ($r = -0.19$, $k = 11$).

1.4.2. Rating source

The measurement of workplace deviance using either self- or other-ratings of workplace deviance has been of major concern to researchers in the past. Berry, Ones, et al. (2012) demonstrated that self-ratings seem to be a valid alternative to other-ratings of workplace deviance, but also showed that the personality domains of Conscientiousness, Agreeableness, and Neuroticism correlate more strongly with self-ratings than with other-ratings of workplace deviance. Such stronger correlations with self-rated workplace deviance may be reflective of same-source biases. However, same-source biases would result in stronger correlations of all personality domains with workplace deviance when self-ratings are used than when other-ratings are used. Another possibility is that especially those domains that are susceptible to socially desirable responding (i.e., Conscientiousness, Agreeableness, Neuroticism; Berry, Page, & Sackett, 2007; Li & Bagger, 2006) will show dissimilar relations with self- and other-ratings of workplace deviance because self-ratings of those personality domains will be inflated while self-ratings of workplace deviance will be deflated to appear socially desirable. We will therefore examine if the personality domains correlate differently with self- and other-ratings of workplace deviance.

2. Method

2.1. Systematic literature search & coding

A systematic literature search was conducted on several scientific databases, including *EBSCO*, *Web of Science*, and *Google Scholar*, in December 2016. The keywords used to find articles were: *Personality*, *Big 5*, *Big Five*, *Five-factor-model*, *FFM*, *HEXACO*, *Agreeableness*, *Extraversion*, *Openness to Experience*, *Neuroticism*, *Emotional Stability*, *Emotionality*, *Conscientiousness*, *Intellect*, *Honesty-Humility*, *Workplace Deviance*, *Interpersonal Deviance*, *Organizational Deviance*, or *Counterproductive Work Behavior*. The keywords had to be mentioned in the abstract or title of the study. After removing duplicates, 739 scientific articles were identified. By examining previous meta-analyses on personality or workplace deviance (Berry et al., 2012; Berry, Ones, et al., 2007, Dalal, 2005, Grijalva & Newman, 2014, Salgado, 2002, Spector, 2011, Woo, Chernyshenko, Stark, & Conz, 2014), six additional scientific articles were found. In addition, some authors were contacted for more data or articles on the topic, which resulted in four additional articles. Thus, the final number of scientific articles was 749. All articles were fully examined.

For the inclusion or exclusion of studies in this meta-analysis, several criteria had to be met. First, the correlation coefficient (r) between at least one domain of personality and workplace deviance had to be reported, along with the sample size (N). Second, the personality measure used in the study had to be based either on the B5/FFM model or on the HEXACO model. Third, workplace deviance had to be measured on an individual and not on a group level. We also excluded one study (Spector & Zhou, 2014) because the data seemed to overlap with the data of another study included in this meta-analysis (Zhou, Meier, & Spector, 2014). The inclusion criteria resulted in a final sample of 55 individual studies for the B5 and 15 individual studies for the HEXACO with a total of almost 500 effect sizes. The articles were published between 1998 and 2016, with a median publication year of 2011. All effect sizes and study characteristics were independently coded by the first and second author. The agreement among the independent raters was 98%. All inconsistencies in the codings were resolved after discussion. The codings for each included effect size and their

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[5] The correlations reported here and further below from Berry, Ones, et al. (2007) are mean sample-size weighted correlations. Berry, Ones, et al. (2007) did not test if the effect sizes for the personality domains differ in their relationship with ID and OD. We tested the difference between the two correlation coefficients for each personality domain and found a significant difference for Conscientiousness (ID: $r = -0.19$, OD: $r = -0.34$; $z = -6.44$, $p < .001$), Agreeableness (ID: $r = -0.36$, OD: $r = -0.25$; $z = 4.80$, $p < .001$), and Extraversion (ID: $r = 0.02$, OD: $r = -0.07$; $z = 2.89$, $p < .01$), but not for Neuroticism (ID: $r = 0.20$, OD: $r = 0.19$; $z = 0.37$, $p = .711$) and Openness (ID: $r = -0.07$, OD: $r = -0.03$; $z = 1.27$, $p = .204$) (all p-values are two-tailed).

references are listed in the Supplementary materials.

2.2. Definition of variables

2.2.1. Big Five model

The B5 model measures five personality domains: Openness to Experience (k = 27), Conscientiousness (k = 49), Extraversion (k = 28), Agreeableness (k = 41), and Neuroticism (k = 38).

2.2.2. HEXACO model

The HEXACO model measures six personality domains: Honesty-Humility (k = 15), Emotionality (k = 12), eXtraversion (k = 12), Agreeableness (k = 12), Conscientiousness (k = 13), and Openness to Experience (k = 12).

2.2.3. Workplace deviance

Workplace deviance can be measured as an overall construct or divided into two separate constructs, OD (k for B5 domains = 15–33; k for HEXACO domains = 3–5) and ID (k for B5 domains = 15–29; k for HEXACO domains = 2–4; Bennett & Robinson, 2000). Overall workplace deviance usually describes the combination of these two types. Studies that assessed only one specific form of deviant workplace behavior, such as stealing, were not included.

2.2.4. Source of workplace deviance rating (self vs. other)

To rate workplace deviance, studies used either self-rating measures (k for B5 domains = 23–42) or other-rating measures (k for B5 domains = 7–12). When a study reported correlations for both self- and other-ratings of workplace deviance (e.g., Spector & Che, 2014), we excluded the correlation involving other-ratings and only included the correlation involving self-ratings in the overall analysis to guarantee the independence of effect sizes. For completeness sake, we also report the overall meta-analytic results with only other-ratings of workplace deviance included instead of self-ratings for studies that measured both. For the HEXACO, no study included other-ratings of workplace deviance.[6]

2.3. Data analysis

We followed Hunter and Schmidt's (2014) method for meta-analyses of correlation coefficients with a random-effects model. The Pearson product moment correlation coefficient (r) between one of the B5 or HEXACO domains and workplace deviance was used as the effect size. We used correlations weighted by sample size to account for differential sampling error in the input correlations. We corrected all weighted correlation coefficients for unreliability in both the predictor and the criterion using internal reliabilities (i.e., Cronbach's alpha). If a range of reliabilities was given for all personality domains (e.g., reliabilities ranged between 0.67 and 0.82), we coded the reliability that would result in the most conservative estimate (i.e., 0.82). If an average of reliabilities across different domains was provided, we coded this average. If no reliabilities were provided (e.g., Flaherty & Moss, 2007), we corrected this correlation using the average reliability estimate across all other studies for this specific variable (see Supplementary materials). We applied composite formulas (Hunter & Schmidt, 2014) to the dependent effect sizes for ID and OD if a study measured these workplace deviance facets but did not report a correlation for overall workplace deviance. We corrected this composite using Mosier's reliability formula for composites (Hunter & Schmidt, 2014).

For all effect sizes, we report 95% confidence intervals and 95% credibility intervals. We also report the percentage of variance explained by statistical artifacts (Hunter & Schmidt, 2014). If this percentage is higher than 75%, moderators likely exist. To assess whether the variation between observed correlations was due to real heterogeneity between studies and not because of within-study error, an I^2 index was computed using the Hunter and Schmidt (2014) estimator. The I^2 is the proportion of the observed variance that reflects real, rather than chance, differences between effect sizes. Higgins, Thompson, Deeks, and Altman (2003) provided benchmark values for the interpretation of I^2: 25%, 50%, and 75% might be considered as low, moderate, and high, respectively.

Studies that report significant results are more likely to be published than studies that report non-significant results (Borenstein et al., 2009). Such publication bias can result in an overestimation of the true effect size. Publication bias would be present if precision and the study effect sizes differ significantly according to a rank correlation test (Begg & Mazumdar, 1994) or according to a regression test for funnel plot asymmetry (Egger et al., 1997).

The moderating effect of ID versus OD and of self- versus other-ratings of workplace deviance were tested using subgroup analyses in a mixed-effects model with correlations corrected for unreliability. All analyses were conducted using the *metafor* package in R (Viechtbauer, 2010).

2.3.1. Two-stage meta-analytical structural equation modeling

A two-stage random-effects meta-analytical structural equation modeling (MASEM) was conducted to calculate the variance in

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[6] In addition, we exploratorily examined the moderating effect of the workplace deviance questionnaire (Bennett & Robinson's, 2000, questionnaire versus others), B5 personality questionnaire (B5 versus FFM), the number of personality questionnaire items, the average age of the samples in the included studies, and the percentage of women in the included studies. The results of these moderator analyses can be found in the Supplementary materials.

workplace deviance explained by the B5 and the HEXACO personality model (Cheung, 2014, 2015). For all studies measuring the correlations between overall workplace deviance and all five B5 personality domains ($k = 20$, $N = 6731$) or all six HEXACO personality domains ($k = 12$, $N = 3177$), the correlations between the personality domains were coded as well. When the sample size differed per correlation, the lowest (most conservative) number of participants was coded. All studies included in the MASEM analysis and their corresponding coded effect sizes (sample size weighted and corrected for unreliability) are listed in the Supplementary materials. MASEM combines meta-analysis with structural equation modeling and consists of two stages: in the first stage, the corrected correlations between all variables from all primary studies are synthesized into an overall corrected correlation matrix weighted by sample size. In the second stage, this meta-analytic correlation matrix is subjected to a structural equation model to calculate the explained variance in workplace deviance. We also conduct a relative weights analysis (RWA) to gain a better understanding of the relative contribution of each personality domain to the amount of explained variance in workplace deviance (Tonidandel & LeBreton, 2011).

3. Results

3.1. Personality predicting overall workplace deviance

Results for the meta-analytic relations between the B5 and HEXACO personality domains and workplace deviance are shown in Table 1. Consistent with our expectation, HEXACO Honesty-Humility ($\rho = -0.482$) showed the strongest correlation with workplace deviance out of all examined personality domains. Both Conscientiousness (B5 $\rho = -0.372$; HEXACO $\rho = -0.403$) and Agreeableness (B5 $\rho = -0.362$; HEXACO $\rho = -0.194$) were also significant predictors of workplace deviance. B5 Neuroticism ($\rho = 0.192$) and HEXACO Emotionality ($\rho = -0.140$) correlated significantly with workplace deviance, but in opposite directions. The correlations between Extraversion and workplace deviance (B5 $\rho = -0.045$; HEXACO $\rho = -0.014$) and Openness to Experience and workplace deviance (B5 $\rho = -0.082$; HEXACO $\rho = -0.044$) were nonsignificant or negligible.[7]

In line with our expectations, we did not find differences in effect sizes between B5 and HEXACO Openness to Experience, Conscientiousness, and Extraversion (see Table 1 for the Q-values statistically comparing the two effect sizes with each other). For Agreeableness, the effect size was significantly more negative for the B5 compared to the HEXACO, $Q(1) = 30.119$, $p < .001$. The correlations of B5 Neuroticism and HEXACO Emotionality with workplace deviance also differed significantly, $Q(1) = 58.086$, $p < .001$.[8]

The results of the publication bias analyses for all B5 and the HEXACO personality domains can be found in Table 1 as well. For the B5, the regression test was significant for all domains. The rank correlation test was significant for B5 Conscientiousness, Agreeableness, and Neuroticism, but not for Openness to Experience and Extraversion. Overall, publication bias likely influenced the results for B5 Conscientiousness, Agreeableness, and Neuroticism, but the results remain inconclusive for B5 Openness to Experience and Extraversion. For the HEXACO, the rank correlation test was nonsignificant for all domains. The regression test was significant only for Conscientiousness. Overall, it is very unlikely that publication bias strongly influenced the results for the HEXACO personality domains.

3.2. Differential prediction of ID and OD

As can be seen in Table 2, subgroup analyses revealed that B5 Openness to Experience, Extraversion, and Neuroticism did not correlate differently with ID or OD. B5 Agreeableness correlated more strongly with ID ($\rho = -0.363$) than with OD ($\rho = -0.285$), $Q(1) = 4.766$, $p = .029$. B5 Conscientiousness showed a stronger correlation with OD ($\rho = -0.401$) than with ID ($\rho = -0.260$), $Q(1) = 15.653$, $p < .001$. These moderator analyses for the HEXACO included a relatively small number of studies ($k = 2–5$), and therefore had low statistical power to detect significant relations and might have been influenced by second order sampling error (Schmidt & Oh, 2013). We therefore only present these analyses in the Supplementary materials.

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[7] As mentioned in the Method section, we included the self-rating in the overall analysis if a study reported correlations between personality and both self- and other-ratings of workplace deviance to guarantee the independence of effect sizes. However, the results do not substantially change if the other-rating of workplace deviance of a given study is included in the overall analyses instead. The results with other-ratings of workplace deviance included instead are as follows: B5 Openness: $r = -0.061$, 95% CI (-0.117, -0.006), $\rho = -0.077$, 95% CI (-0.147, -0.007), $p = .032$; B5 Conscientiousness: $r = -0.293$, 95% CI (-0.331, -0.256), $\rho = -0.357$, 95% CI (-0.402, -0.311), $p < .001$; B5 Extraversion: $r = -0.044$, 95% CI (-0.108, 0.021), $\rho = -0.052$, 95% CI (-0.129, 0.026), $p = .190$; B5 Agreeableness: $r = -0.282$, 95% CI (-0.318, -0.246), $\rho = -0.347$, 95% CI (-0.390, -0.304), $p < .001$; B5 Neuroticism: $r = 0.157$, 95% CI (0.123, 0.192), $\rho = 0.190$, 95% CI (0.149, 0.231), $p < .001$. For the HEXACO, no study included both self- and other-ratings of workplace deviance.

[8] These results might be questioned because some of the observed differences between the B5 and the HEXACO relations with workplace deviance could be attributed to differential relations of self- and other-ratings of workplace deviance with the B5 domains (none of the included HEXACO studies used other-ratings of workplace deviance). We therefore compared the B5 and HEXACO relations again only including studies with self-rated workplace deviance. The results remain qualitatively the same: We do not find differences in effect sizes between B5 and HEXACO Openness to Experience, Conscientiousness, and Extraversion. B5 Agreeableness exhibits a stronger relation with workplace deviance ($\rho = -0.377$) than HEXACO Agreeableness ($\rho = -0.194$), $Q(1) = 34.338$, $p < .001$. HEXACO Emotionality correlates negatively with workplace deviance ($\rho = -0.140$), whereas B5 Neuroticism correlates positively with workplace deviance ($\rho = 0.200$), and the difference between the two is statistically significant, $Q(1) = 56.736$, $p < .001$.

Table 1
Meta-analytic results for overall workplace deviance.

Domain	Overall effect size											Heterogeneity		Publication bias		Comparison	
	k	N	r	SEr	ρ	$SE\rho$	%var	CI_{LL}	CI_{UL}	Cr_{LL}	Cr_{UL}	I^2	T	Reg_p	$Rank_p$	$Q_{between}$	p for Q
B5 Openness	27	7309	−0.065	0.029	−0.082	0.036	18.93	−0.153	−0.011	−0.410	0.247	82.09	0.164	0.016	0.482	0.362	0.547
H Openness to Experience	12	3177	−0.039	0.043	−0.044	0.052	18.06	−0.146	0.058	−0.374	0.287	82.33	0.160	0.226	0.841		
B5 Conscientiousness	49	15,773	−0.306	0.018	−0.372	0.022	19.10	−0.416	−0.328	−0.642	−0.102	84.28	0.136	0.001	0.012	0.432	0.511
H Conscientiousness	13	3466	−0.331	0.038	−0.403	0.041	20.52	−0.483	−0.322	−0.666	−0.139	79.97	0.128	0.014	0.306		
B5 Extraversion	28	7645	−0.038	0.033	−0.045	0.040	13.51	−0.124	0.034	−0.430	0.340	87.62	0.192	< 0.001	0.298	0.279	0.597
H Extraversion	12	3177	−0.014	0.036	−0.014	0.042	27.93	−0.097	0.069	−0.269	0.240	73.35	0.123	0.073	0.545		
B5 Agreeableness	41	12,860	−0.294	0.018	−0.362	0.022	24.47	−0.404	−0.320	−0.591	−0.134	77.91	0.115	< 0.001	0.001	30.119	< 0.001
H Agreeableness	12	3177	−0.157	0.020	−0.194	0.022	84.83	−0.237	−0.152	−0.246	−0.142	4.25	0.016	0.404	0.545		
B5 Neuroticism	38	11,740	0.160	0.020	0.192	0.024	22.97	0.145	0.240	−0.054	0.439	77.79	0.124	0.028	0.023	58.086	< 0.001
H Emotionality	12	3177	−0.115	0.030	−0.140	0.036	38.04	−0.211	−0.069	−0.345	0.065	63.58	0.098	0.518	0.381		
H Honesty-Humility	15	4206	−0.394	0.021	−0.482	0.024	52.38	−0.529	−0.436	−0.616	−0.349	51.96	0.064	0.768	0.923		

Note. B5 = Big Five, H = HEXACO; k = number of statistically independent samples; N = cumulative sample size; r = sample-size weighted mean observed correlation; SEr = standard error for r; ρ = r corrected for unreliability in the predictor and in the outcome; %var. = percentage of variance attributable to unreliability; CI_{LL} and CI_{UL} = lower and upper bounds of the 95% confidence interval for ρ; Cr_{LL} and Cr_{UL} = lower and upper bounds of the 95% credibility interval for ρ; T = estimated amount of total heterogeneity for ρ; I^2 = total heterogeneity/total variability for ρ; Reg_p = p-value for the regression test for funnel plot asymmetry; $Rank_p$ = p-value for the rank correlation test for funnel plot asymmetry; $Q_{between}$ = comparison of ρ between B5 and HEXACO.

Table 2
Results of the moderating effect of the workplace deviance form for the Big Five.

		k	N	r	SEr	ρ	SEρ	CI$_{LL}$	CI$_{UL}$	Cr$_{LL}$	Cr$_{UL}$	$Q_{between}$	p for Q
B5 Openness	ID	15	3606	−0.037	0.027	−0.047	0.035	−0.115	0.021	−0.247	0.153	0.136	0.712
	OD	15	3606	−0.048	0.019	−0.063	0.025	−0.111	−0.014	−0.154	0.028		
B5 Conscientiousness	ID	29	8446	−0.213	0.022	−0.260	0.027	−0.313	−0.207	−0.501	−0.019	15.653	< 0.001
	OD	33	9567	−0.324	0.019	−0.401	0.023	−0.447	−0.355	−0.624	−0.178		
B5 Extraversion	ID	15	3606	0.011	0.024	0.012	0.030	−0.046	0.071	−0.146	0.171	1.823	0.177
	OD	15	3606	−0.042	0.030	−0.053	0.038	−0.127	0.022	−0.291	0.185		
B5 Agreeableness	ID	29	8252	−0.294	0.022	−0.363	0.026	−0.413	−0.314	−0.589	−0.138	4.766	0.029
	OD	29	8423	−0.227	0.021	−0.285	0.026	−0.335	−0.235	−0.507	−0.063		
B5 Neuroticism	ID	22	6158	0.153	0.020	0.187	0.024	0.140	0.235	0.025	0.349	0.380	0.538
	OD	24	6624	0.171	0.024	0.211	0.030	0.152	0.269	−0.031	0.452		

Note. ID = interpersonal workplace deviance; OD = organizational workplace deviance; k = number of statistically independent samples; N = cumulative sample size; r = sample-size weighted mean observed correlation; SEr = standard error for r; ρ = r corrected for unreliability in the predictor and in the outcome; SEρ = standard error of ρ; CI$_{LL}$ and CI$_{UL}$ = lower and upper bounds of the 95% confidence interval for ρ; Cr$_{LL}$ and Cr$_{UL}$ = lower and upper bounds of the 95% credibility interval for ρ; $Q_{between}$ = comparison of ρ between ID and OD.

Table 3
Results of the moderating effect of self- versus other ratings for the Big Five.

		k	N	r	SEr	ρ	SEρ	CI$_{LL}$	CI$_{UL}$	Cr$_{LL}$	Cr$_{UL}$	$Q_{between}$	p for Q
Openness	Self	23	6704	−0.057	0.031	−0.071	0.039	−0.148	0.006	−0.402	0.260	1.089	0.297
	Other	7	1101	−0.116	0.047	−0.145	0.059	−0.261	−0.029	−0.409	0.119		
Conscientiousness	Self	42	13,566	−0.327	0.017	−0.398	0.022	−0.440	−0.356	−0.633	−0.163	26.915	< 0.001
	Other	12	3056	−0.181	0.025	−0.217	0.028	−0.271	−0.164	−0.332	−0.103		
Extraversion	Self	24	7040	−0.037	0.037	−0.044	0.045	−0.131	0.043	−0.443	0.356	0.307	0.580
	Other	7	1101	−0.064	0.030	−0.075	0.035	−0.145	−0.006	−0.145	−0.006		
Agreeableness	Self	36	12,147	−0.306	0.019	−0.377	0.022	−0.421	−0.333	−0.601	−0.153	9.720	0.002
	Other	8	1209	−0.199	0.031	−0.248	0.035	−0.316	−0.181	−0.330	−0.167		
Neuroticism	Self	31	9533	0.173	0.021	0.209	0.025	0.160	0.257	−0.015	0.433	1.696	0.193
	Other	11	2849	0.122	0.035	0.146	0.041	0.065	0.227	−0.075	0.367		

Note. k = number of statistically independent samples; N = cumulative sample size; r = sample-size weighted mean observed correlation; SEr = standard error for r; ρ = r corrected for unreliability in the predictor and in the outcome; SEρ = standard error of ρ; CI$_{LL}$ and CI$_{UL}$ = lower and upper bounds of the 95% confidence interval for ρ; Cr$_{LL}$ and Cr$_{UL}$ = lower and upper bounds of the 95% credibility interval for ρ; $Q_{between}$ = comparison of ρ between self- and other-ratings.

3.3. Source of workplace deviance ratings

The source of the workplace deviance rating significantly moderated the relation of B5 Conscientiousness and Agreeableness with workplace deviance (see Table 3). B5 Conscientiousness showed a significantly stronger correlation with self-ratings ($\rho = -0.398$) than with other-ratings of workplace deviance ($\rho = -0.217$), $Q(1) = 26.915$, $p < .001$. The same held for B5 Agreeableness, which correlated more strongly with self-ratings ($\rho = -0.377$) than with other-ratings of workplace deviance ($\rho = -0.248$), $Q(1) = 9.720$, $p = .002$. For the other three B5 personality domains, the source of the workplace deviance rating did not moderate the relation of interest. This moderation effect could not be tested for the HEXACO because no study measured the relations with other-ratings of workplace deviance.

3.4. Explained variance in workplace deviance: B5 versus HEXACO

We conducted a two-stage MASEM to compare the variance that is explained by the B5 and the HEXACO in workplace deviance. The overall corrected correlation matrices synthesized in the first step can be found in the Supplementary materials. In the second stage, we fitted a structural equation model with all personality domains predicting workplace deviance. Results show that the B5 personality domains explained 19.05% of the variance in workplace deviance, $k = 20$, $N = 6731$, $R^2 = 0.1905$, 95% CI for R^2 (0.1421; 0.2481),[9] whereas the HEXACO personality domains explained 31.97% of the variance in workplace deviance, $k = 12$, $N = 3177$, $R^2 = 0.3197$, 95% CI for R^2 (0.2642; 0.3847). Hence, the HEXACO explained approximately 13% more workplace deviance variance than the B5.[10]

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[9] When excluding four studies from this analysis that measured workplace deviance with other-ratings (Bernerth, Taylor, Walker, & Whitman, 2012; Hitlan & Noel, 2009; Kluemper, Mclarty, & Bing, 2015; Richards & Schat, 2011), the explained variance in workplace deviance using the B5 domains slightly increased, $k = 16$, $N = 5663$, $R^2 = 0.2261$, 95% CI for R^2 (0.1661; 0.2988).

[10] When using only sample size weighted correlations, the B5 personality domains explained 13.27% of variance in workplace deviance, $k = 20$, $N = 6731$, $R^2 = 0.1327$, 95% CI for R^2 (0.1002; 0.1704). The HEXACO personality domains then explained 22.35% of variance in workplace deviance, $k = 12$, $N = 3177$, $R^2 = 0.2235$, 95% CI for R^2 (0.1844; 0.2695). Using sample size weighted correlations, the HEXACO therefore explained 9.16% more workplace deviance variance than the B5.

Table 4
Results of the relative weights analysis.

	Raw Weight	Relative Weight
Big Five		
Openness	0.25	1.30
Conscientiousness	10.13	53.19
Extraversion	0.24	1.26
Agreeableness	7.14	37.49
Neuroticism	1.29	6.76
HEXACO		
Honesty-Humility	18.21	56.95
Emotionality	1.36	4.26
eXtraversion	0.07	0.22
Agreeableness	1.68	5.25
Conscientiousness	10.55	32.99
Openness to Experience	0.10	0.33

Note. Raw Weight = raw weight of a predictor from RWA in percentages; Relative Weight = rescaled relative weight in percentages.

The results of the RWA can be found in Table 4. For the B5, Conscientiousness (53.19%), Agreeableness (37.49%), and Neuroticism (6.76%) contributed most to the explained variance in workplace deviance, whereas the contribution of Openness to Experience (1.30%) and Extraversion (1.26%) was negligible. For the HEXACO, Honesty-Humility (56.95%) and Conscientiousness (32.99%) contributed most to the amount of explained variance in workplace deviance, whereas the contribution of Agreeableness (5.25%) and Emotionality (4.26%) was relatively low. Openness to Experience (0.33%) and eXtraversion (0.22%) hardly contributed to the explained variance.

4. Discussion

In an effort to provide a comprehensive overview of the relations between personality and workplace deviance, the current study is the first to meta-analytically compare the B5 with the HEXACO in predicting workplace deviance, or—for that matter—any organizational outcome. Our results indicate that when predicting workplace deviance, the HEXACO model outperforms the B5 model, and researchers and practitioners might therefore want to prioritize the HEXACO over the B5 when trying to predict workplace deviance. Honesty-Humility was the strongest predictor of workplace deviance out of all personality domains examined in this meta-analysis. This finding underlines the importance of a personality domain which taps directly into individual differences in the propensity for exploitation and deception (i.e., Honesty-Humility) (Ashton et al., 2000; Lee, Ashton, & Shin, 2005; Ashton et al., 2000), at least in the prediction of workplace deviance. Considering the ubiquity of personality questionnaires in employee selection contexts (Ryan et al., 2015) and the fact that supervisor's overall job performance ratings depend heavily on workplace deviance ratings (as much as task performance ratings and more than OCB ratings; Dunlop & Lee, 2004; Rotundo & Sackett, 2002), this meta-analysis suggests that it is important to capture variance associated with Honesty-Humility in employee selection contexts. The current results also suggest that Conscientiousness and Agreeableness (Agreeableness somewhat weaker in the HEXACO model), and to a lesser extent B5 Neuroticism and HEXACO Emotionality, are important predictors of workplace deviance. Openness to Experience and Extraversion (for both B5 and HEXACO) do not play a substantial role in the prediction of workplace deviance.

4.1. Theoretical explanations

These findings can be explained using multiple theoretical accounts. The strong negative relation between Honesty-Humility and workplace deviance can be best understood using theories of reciprocal altruism (Ashton & Lee, 2007), which hold that individuals scoring high on Honesty-Humility avoid acting deviantly at work because of their own internal beliefs that such behavior is wrong, even if others act this way or when others could potentially exploit them. Future research might examine if individuals who score high on Honesty-Humility are immune to bystander effects of workplace deviance (Ferguson & Barry, 2011) and refrain from acting deviantly even in an environment that is permissive of or even encourages such behavior.

The negative relation between Conscientiousness and workplace deviance can be explained using activity regulation theory (Zijlstra, Roe, Leonora, & Krediet, 1999) and action theory (Zohar, 1999), which suggest that individuals avoid activities that interfere with goal attainment. Especially individuals scoring high on Conscientiousness, who are goal-driven, hard-working, and disciplined, should therefore refrain from acting deviantly because it interferes with goal attainment (Barrick, Mitchell, & Stewart, 2003). Similarly, conservation of resources theory (Hobfoll, 1989) argues that individuals are motivated to obtain resources and to avoid resource losses. Especially individuals scoring high on Conscientiousness want to accomplish their tasks and might therefore refrain from acting deviantly because such behaviors require resources that could otherwise be spent on achieving work tasks. Future research could examine if the relation between Conscientiousness and workplace deviance is mediated by an individual's motivation to attain goals.

Group-value theory (Lind & Lissak, 1985), which holds that individuals value group belonging and behave in ways that enforce such belonging, can be used to explain the negative relation between Agreeableness and workplace deviance. Especially agreeable individuals, who are compassionate, patient, trusting, and generally more likely to get along with others, should value group belonging and therefore refrain from acting deviantly because such behavior would threaten their status in the group. This is furthermore reflected in the finding that B5 Agreeableness correlates more strongly with workplace deviance than HEXACO Agreeableness, because B5 Agreeableness contains more interpersonally oriented variance—which is part of Emotionality in the HEXACO model—than HEXACO Agreeableness (Ashton & Lee, 2005). The negative relation between HEXACO Emotionality and workplace deviance can therefore be understood from the same theoretical perspective because individuals who score high on Emotionality are characterized by a high need for emotional support and a tendency to form strong bonds with others and might therefore be less likely to act deviantly at work. To a lesser extent, group-value theory (Lind & Lissak, 1985) can also explain the positive relation between Neuroticism and workplace deviance because neurotic individuals seem to function less well in teams (Barrick, Neubert, Mount, & Stewart, 1998) and might therefore be less inclined to refrain from acting deviantly. Future research could examine if the relations of Agreeableness and Emotionality/Neuroticism with workplace deviance are mediated by a sense of group belonging.

It is important to note that the current meta-analysis could not test the theoretical explanations for the relations between personality and workplace deviance because these accounts have not been tested in previous studies. We therefore recommend future research to examine mediating mechanisms based on these theoretical explanations. Doing so will contribute to a better understanding about how stable traits determine behavior at work.

4.2. Comparison of B5 and HEXACO personality domains

The current findings also carry important implications for personality theory. As expected, no significant differences in relations with workplace deviance between the B5 and HEXACO personality domains of Openness to Experience, Conscientiousness, and Extraversion were observed because these personality domains are conceptually similar in the B5 and the HEXACO model (Lee & Ashton, 2004). B5 Agreeableness correlated more strongly with workplace deviance than HEXACO Agreeableness. In addition to the interpretation of this finding offered above in light of group-value theory (Lind & Lissak, 1985), this finding might also reflect the fact that B5 (and especially FFM) Agreeableness captures some variance associated with HEXACO Honesty-Humility, which correlates most strongly with workplace deviance. This apparently outweighs the effect of a missing (reversed) anger facet in B5 Agreeableness, which correlates positively with workplace deviance (Hastings & O'Neill, 2009) and which is part of HEXACO Agreeableness.

Some may see in the above results confirmation of the position, advocated by some B5 researchers (DeYoung, 2015; Visweswaran & Ones, 2016), that Honesty-Humility is not much more than a facet of Agreeableness. However, such a view is challenged by the findings of this meta-analysis that HEXACO Honesty-Humility already explains > 10% more variance in workplace deviance than B5 Agreeableness (i.e., 23.23% versus 12.96% using corrected correlations). Such a position is also challenged by findings in this and other studies that a) HEXACO Honesty-Humility and Agreeableness are only moderately related (i.e., $\rho = 0.37$ in this study and $r = 0.28$ between Honesty-Humility and B5 Agreeableness in Ashton et al., 2014) and that b) HEXACO Honesty-Humility and Agreeableness have significantly different predictive validities for a great number of important other variables, such as values and political orientations (Lee et al., 2009; Lee, Ashton, Ogunfowora, Bourdage, & Shin, 2010), the Dark Triad (Lee et al., 2013; Lee & Ashton, 2014), and several economic (public good and social dilemma) games (Hilbig, Thielmann, Klein, & Henninger, 2016; Hilbig, Zettler, Leist, & Heydasch, 2013; Zhao & Smillie, 2015). This, together with the finding that the most recent large-scale cross-cultural lexical studies offer support for separate Agreeableness and Honesty-Humility dimensions (Ashton et al., 2004; De Raad et al., 2014; Saucier, 2009), seems to indicate that the B5 model omits a highly important and consequential variable.

The relations of B5 Neuroticism and HEXACO Emotionality with workplace deviance differed significantly and in direction, offering support for the conceptual distinction between these two domains. B5 Neuroticism includes content associated with anger, which has been found to be positively related to workplace deviance (Hastings & O'Neill, 2009), whereas HEXACO Emotionality includes content associated with anxiety and sentimentality which correlates negatively with (workplace) deviance (e.g., Van Gelder & De Vries, 2012).

Overall, these findings provide criterion-related support for the conceptual similarities *and* differences between the B5 and the HEXACO. While the current results suggest that the B5 personality model is useful in the prediction of workplace deviance, the results also suggest that practitioners and researchers might like to use the HEXACO instead of the B5 personality model because of the inclusion of the Honesty-Humility domain and the resulting higher level of explained variance in workplace deviance. In particular, practitioners and researchers are advised to include the personality domains of Honesty-Humility, Conscientiousness, Agreeableness, and Emotionality when their goal is to predict workplace deviance. These findings also align with previous findings suggesting that the HEXACO personality model, compared to the B5 personality model, better predicts various criteria in- and outside the workplace, such as cooperation (Thielmann & Hilbig, 2014), unethical leadership (De Vries, 2012), and delinquent and criminal behaviors (De Vries & Van Gelder, 2013, 2015).

4.3. Comparison with previous meta-analytic findings

Three previous meta-analyses have examined the relations between B5 personality domains and workplace deviance (Berry et al., 2012; Berry, Ones, et al., 2007; Salgado, 2002), and Table 5 shows a comparison of their results with those of the current meta-analysis. The most notable difference is that the magnitude of the overall weighted correlations for B5 Conscientiousness ($r = -0.31$ compared to Salgado, 2002: $r = -0.16$) and Agreeableness ($r = -0.29$ compared to Salgado, 2002: $r = -0.13$) are much stronger in

Table 5

Comparison of sample size weighted correlations of the current meta-analyses with previous meta-analyses (only for B5).

B5 domain	This study (k)	Salgado (2002) (k)*	Berry et al. (2012) self-reported WD[a]	This study		Berry, Ones, et al. (2007)	
				ID (k)	OD (k)	ID (k)	OD (k)
O	−0.07 (27)	0.10 (8)	−0.06	−0.04 (15)	−0.05 (15)	−0.07 (8)	−0.03 (5)
C	−0.31 (49)	−0.16 (13)	−0.31	−0.21 (29)	−0.32 (33)	−0.19 (11)	−0.34 (8)
E	−0.04 (28)	0.01 (12)	−0.03	0.01 (15)	−0.04 (15)	0.02 (8)	−0.07 (5)
A	−0.29 (41)	−0.13 (9)	−0.35	−0.29 (29)	−0.23 (29)	−0.36 (10)	−0.25 (8)
N	0.16 (38)	0.04 (15)	0.23*	0.15 (22)	0.17 (24)	0.20* (10)	0.19* (7)

Note. WD = Workplace Deviance; O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism. k = number of studies included in meta-analysis. [a]The correlations between personality domains and self-reported workplace deviance are reported in Berry et al. (2012) but are based on data from Berry, Ones, et al. (2007). The number of studies per effect size (k) is not reported in this article. These correlations are uncorrected, mean sample-size weighted correlations. *Note that we reversed the correlations for Salgado (2002) because in this meta-analysis the relations between personality and a *lack of* deviant behavior was measured (this does not apply to Neuroticism, because Salgado (2002) measured Emotional Stability), and for B5 Neuroticism from Berry, Ones, et al. (2007) and Berry et al. (2012).

the current meta-analysis than in Salgado's (2002) meta-analysis. This difference might be due to the narrower focus of deviant behaviors applied by Salgado (2002). This difference does not hold when comparing the current results to the effect sizes found by Berry et al. (2012) for self-rated workplace deviance (B5 Conscientiousness: $r = -0.31$ compared to Berry et al., 2012: $r = -0.31$; B5 Agreeableness: $r = -29$ compared to Berry et al., 2012: $r = -0.35$). However, the magnitude of the overall weighted correlation for Neuroticism ($r = 0.16$ compared to Salgado, 2002: $r = 0.04$ and Berry et al., 2012: $r = 0.23$) is substantially different in the current meta-analysis, whereas the effect sizes are relatively similar to the previous estimates for Openness to Experience ($r = -0.07$ compared to Salgado, 2002: $r = 0.10$ and Berry et al., 2012: $r = -0.06$) and Extraversion ($r = -0.04$ compared to Salgado, 2002: $r = 0.01$ and Berry et al., 2012: $r = -0.03$).

Two other findings in the current meta-analysis also deserve to be compared to previous meta-analyses (Berry et al., 2012; Berry, Ones, et al., 2007; Salgado, 2002). First, B5 Conscientiousness correlated more strongly with OD ($\rho = -0.401$) than with ID ($\rho = -0.260$), whereas B5 Agreeableness correlated more strongly with ID ($\rho = -0.363$) than with OD ($\rho = -0.285$). Using a larger number of studies, these results confirm findings by Berry, Ones, et al. (2007). Regarding Conscientiousness, these results confirm our expectation that this domain is more predictive of OD than of ID, probably because of the increased norm adherence that char-acterizes individuals scoring high on Conscientiousness (Marcus & Schuler, 2004). For B5 Agreeableness, the results support our expectation that the interpersonal aspect of this domain makes it more predictive of ID than of OD. Thus, the distinction between ID and OD makes sense when using Conscientiousness or Agreeableness as predictors. However, even those domains still significantly predict both ID and OD, which reflects the fact that personality traits generally incline individuals to exhibit or refrain from deviant behavior.

Second, Berry et al. (2012) found differential relations for Conscientiousness, Agreeableness, and Neuroticism with self- and other-rated workplace deviance. In the current meta-analysis, B5 Conscientiousness and B5 Agreeableness showed a stronger cor-relation with self- ($\rho = -0.398$ and $\rho = -0.377$, respectively) than with other-ratings of workplace deviance ($\rho = -0.217$ and $\rho = -0.248$, respectively). B5 Openness, Extraversion, and Neuroticism did not correlate differently with self- or other-ratings of workplace deviance. These findings offer only weak support for the idea that common method variance inflates the relations between personality and self-rated workplace deviance because if common method variance would be a pervasive problem, the correlations with self-rated workplace deviance would have been stronger for *all* personality domains. However, the results may be interpreted as showing support for the idea that those personality domains that are more susceptible to socially desirable responding show stronger relations with self- than with other-ratings of workplace deviance, as participants may have realized that Conscientiousness and Agreeableness are the strongest predictors of workplace deviance and of future job performance among those personality domains prone to socially desirable responding (Schmidt & Hunter, 1998). Altogether, our findings indicate that personality domains are generally valid predictors of self- and other-rated workplace deviance, but that some of the effect sizes might be inflated by socially desirable responding of participants.

4.4. Practical implications

Although task performance is usually the main criterion in employee selection contexts, research indicates that workplace de-viance is one of the most detrimental behaviors for organizational success (Dunlop & Lee, 2004), making the prediction of this criterion very important. The prediction of deviant behavior at work even enjoys one advantage over the prediction of task per-formance because the propensity to act deviantly at work is not limited to a specific job, but, just like OCB, cuts across tasks, jobs, and work environments (Podsakoff, Whiting, Podsakoff, & Blume, 2009). The current meta-analysis clearly outlines that organizations are at an advantage if they can use personality questionnaires to select employees who lack a proneness for deviant behavior (Podsakoff et al., 2009). Whereas previous research has positioned Conscientiousness and Agreeableness as the main predictors of task per-formance and workplace deviance (Barrick, Mount, & Judge, 2001; Berry, Ones, et al., 2007; Ilies, Fulmer, Spitzmuller, & Johnson, 2009), the current meta-analysis suggests that these two personality domains in combination with Honesty-Humility and

Emotionality (Neuroticism in the B5) are the most important domains in the prediction and prevention of workplace deviance. Research indicates that the predictive validity of personality for workplace deviance is especially pronounced in unstructured jobs for which the validity of personality for job performance seems to be even stronger (Meyer, Dalal, & Hermida, 2010); an effect that might even be enhanced in certain job contexts for certain personality domains (Judge & Zapata, 2015). For example, employees low on Honesty-Humility are more likely to take advantage of a situation to enrich themselves at the cost of others when punishment is unlikely (Hilbig, Zettler, & Heydasch, 2012). This highlights the importance of considering personality domains in job selection contexts especially for unstructured jobs in which applicants have a lot of freedom to make their own decisions. When practitioners can choose between personality questionnaires, they might then opt for the HEXACO personality inventory instead of one of the B5 questionnaires, as the HEXACO personality inventory explains more variance in workplace deviance.

Practitioners can also use the current findings by applying trait activation theory (TAT: Tett & Burnett, 2003). According to TAT, an individual's traits, such as personality, are either activated or inhibited in response to trait-relevant cues in the situation (Tett & Burnett, 2003). An ideal work situation is one that offers cues for trait expression and one where trait-expressive behavior is positively valued by others. Furthermore, evidence indicates that individuals actively seek situations that provide opportunities for expressing those traits that they are rewarded for (e.g., De Vries, Tybur, Pollet, & Van Vugt, 2016; Tett & Christiansen, 2007), and the facilitating effect of negative experiences at work on workplace deviance can be increased or decreased by certain personality traits (Colbert, Mount, Harter, Witt, & Barrick, 2004). To decrease levels of workplace deviance, organizations could think of ways to prevent the expression of low levels of those traits that relate significantly to workplace deviance (i.e., Honesty-Humility, Conscientiousness, Agreeableness, Emotionality; De Vries, 2018).

4.5. Limitations and future research

The current meta-analysis has some limitations. First, publication bias might have inflated the results of the current meta-analysis (especially for the B5 relations), although no consistent pattern emerged across personality domains in the publication bias analyses. In addition, the selective reporting of significant results within primary studies might have inflated the results of the current meta-analysis. Second, the data analyzed here is mostly based on cross-sectional designs, which does not allow causal inferences. However, personality is assumed to be relatively stable (Larsen & Buss, 2005), which makes it unlikely that acting deviantly determines someone's personality. One way to overcome this issue would be to investigate the effects of personality on workplace deviance with longitudinal designs. Furthermore, some of the examined personality domains might exhibit interactive effects on workplace deviance (e.g., Jensen & Patel, 2011; Oh, Lee, Ashton, & De Vries, 2011; Penney, Hunter, & Perry, 2011). For example, Oh et al. (2011) demonstrated that high levels of Extraversion exacerbate the negative effect of low Honesty-Humility on workplace deviance, and Penney et al. (2011) find that the negative effect of Conscientiousness on workplace deviance becomes positive for individuals scoring high on Neuroticism. However, there are only very few studies that have examined such interaction effects between personality domains, and it was therefore not possible to test this meta-analytically. Future research might therefore benefit from a systematic and theory-driven investigation of interaction effects between personality domains when predicting workplace deviance. In addition, using broad personality domains instead of narrow facets to investigate the relations between personality and workplace deviance may suppress the actual effects of those facets. It has been previously argued that broad domains are less strongly correlated with workplace deviance than narrow facets (Ashton, 1998; Hastings & O'Neill, 2009). Combining narrow personality traits into overall personality domains might obscure true effects because some facets of a domain might correlate positively with workplace deviance while other facets of the same domains might correlate less strongly or even negatively with it. For example, Hastings and O'Neill (2009) found that the narrow Anger facet in Neuroticism correlated positively with workplace deviance ($r = 0.28$), whereas the Anxiety facet correlated negatively with it ($r = -0.07$).[11] These facets subsequently suppress each other. It can also be the case that different facets correlate differently with ID and OD. However, not enough data was available to meta-analytically investigate this because barely any studies report facet-level correlations with workplace deviance (Ashton, 1998; Hastings & O'Neill, 2009; Morris, Burns, & Periard, 2015), and those that do apply different personality questionnaires with different facet conceptualizations. In addition, some studies use very short scales that do not even measure personality facets (e.g., Peng, 2012). Future research should therefore investigate facet-level relations with workplace deviance in more detail, use longer scales to measure personality, and might examine if cancellation effects among facets of a domain also exist for the HEXACO.

Two other ideas for future research deserve to be mentioned. First, given the prevalence of personality questionnaires in job selection settings to predict, among other criteria, levels of workplace deviance (Ones et al., 2007) and the ubiquity of response distortion on personality measures by applicants to appear more desirably (Anglim, Marty, Morse, De Vries, & MacCann, 2017; Birkeland, Manson, Kisamore, Brannick, & Smith, 2006; Viswesvaran & Ones, 1999), future research could compare the susceptibility for response distortion and changes in construct and criterion-related validity for the two personality frameworks when administered in such high-stakes situations. Second, although the B5 and the HEXACO present the two most commonly studied personality frameworks of our time, future research might systematically examine relations with workplace deviance of personality traits that are 'interstitial' in these two frameworks (e.g., risk taking). Preliminary evidence seems to suggest that traits that seem to be less well-covered by the B5 explain additional variance in workplace deviance (O'Neill & Hastings, 2011), and future research might examine if this also holds for the HEXACO or if the HEXACO already sufficiently covers the personality traits relevant for workplace deviance.

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[11] This provides further support for the fact that these facets belong to different domains, as is the case in the HEXACO: *Anger* is part of HEXACO Agreeableness, whereas *Anxiety* is part of HEXACO Emotionality.

4.6. Conclusion

The current meta-analysis provides the first comprehensive review of the relations between personality and workplace deviance and demonstrates that the HEXACO explains more variance in workplace deviance than the B5. The Honesty-Humility domain of the HEXACO shows the strongest (negative) relation with workplace deviance out of all HEXACO and B5 personality domains. Conscientiousness, Agreeableness, and Emotionality (Neuroticism) are also important predictors of workplace deviance. Overall, the current meta-analysis provides convincing evidence for the importance of personality in the prediction of workplace deviance.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jvb.2019.04.004.

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