[Article title] Gender Differences in Personality Predictors of Counterproductive Behavior

Author Details:

[Author 1 Name] Erik Gonzalez-Mulé
[Author 1 Affiliation] Department of Management and Organizations; The University of Iowa; Iowa City, Iowa; United States

[Author 2 Name] David S. DeGeest
[Author 2 Affiliation] Department of Management and Organizations; The University of Iowa; Iowa City, Iowa; United States

[Author 3 Name] Christa E. Kiersch
[Author 3 Affiliation] Department of Management; University of Wisconsin-La Crosse; La Crosse, WI; United States

[Author 4 Name] Michael K. Mount
[Author 4 Affiliation] Department of Management and Organizations; The University of Iowa; Iowa City, Iowa; United States

Corresponding author: [Name] Erik Gonzalez-Mulé
[Corresponding Author's Email] erik-gonzalez-mule@uiowa.edu

NOTE: affiliations should appear as the following: Department (if applicable); Institution; City; State (US only); Country. No further information or detail should be included

Acknowledgments (if applicable):

Biographical Details (if applicable):

[Author 1 bio] Erik is a PhD student in the Department of Management and Organizations at the University of Iowa. His research interests include individual differences, counterproductive work behaviors, work design, and career success.

[Author 2 bio] David is a PhD student in the Department of Management and Organizations at the University of Iowa. His interests include individual differences, organizational deviance, and managerial development. He has recently published articles in the Journal of Research Synthesis Methods and Human Resources Development Quarterly.

[Author 3 bio] Professor Kiersch is an Assistant Professor of Management at the University of Wisconsin-La Crosse. Her research interests include leadership, preventing experiences of organizational injustice and enhancing employee well-being, and psychometrics. Recent publications include an empirical review of performance-contingent rewards and stress to be published in the Journal of Organizational Behavior Management (Ganster, Kiersch, Marsh, & Bowen, in press), and two chapters to appear in the practitioner-oriented book series The New Faces of Organizations in the 21st Century (Byrne, Kiersch, Smith, & Weidert, in press; 2011). Christa has taught several courses at the undergraduate and graduate levels, including courses on psychological testing and measurement, statistics, organizational development, and research methodology.

[Author 4 bio] Professor Mount has published numerous journal articles, book chapters, and convention papers on a variety of human resource management topics. His research examines the...
processes by which Five–Factor Model personality dimensions relate to job performance and counterproductive work behaviors. Professor Mount is a Fellow in both the Society for Industrial/Organizational Psychology (SIOP) and the American Psychological Association (APA). In 2010 he was awarded (with M. Barrick) the Distinguished Scientific Contribution Award by SIOP.

Structured Abstract: Purpose – The purpose of this study is to examine gender differences in personality predictors of a specific form of workplace aggression: counterproductive work behaviors directed at individuals (CWBI).

Design/methodology/approach – Students (n = 212) who were part-time employees working at least 15 hours per week completed a measure of the Five-Factor Model (FFM) personality traits and two circumplex personality traits (Calmness and Pleasantness), as well as a measure of CWBI. Hierarchical regressions and tests of mean differences were used to examine hypotheses pertaining to gender differences in personality predictors of interpersonal aggression.

Findings – Results generally supported the hypotheses as shown by the significant interactions between gender and personality traits in predicting CWB-I. Agreeableness and Pleasantness significantly (negatively) predicted CWB-I among males, but not females. Emotional Stability significantly (negatively) predicted CWB-I among females, but not males.

Research limitations/implications – The use of self-report surveys may impact the results of this study. However, as this is the first study to explore the complex interactions between gender and personality in predicting workplace aggression, we hope that future research tests these relationships with alternate samples and methodologies.

Practical implications – The results show that personality traits predict interpersonal workplace aggression differentially for males and females. Results also show that circumplex intersection traits are a useful supplement to the FFM traits in explaining interpersonal aggression in the workplace.

Originality/value – To the authors’ knowledge, this is the first study to 1) show that personality traits differentially predict interpersonal aggression for males and females, and 2) to demonstrate the incremental validity of circumplex traits over FFM traits in predicting interpersonal aggression.

Keywords Gender differences; Personality; Counter-productive work behaviors

Paper type Research paper

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Running Heads:
Gender Differences in Personality Predictors of Counterproductive Behavior

Introduction

It is clear that interpersonal aggression is costly to organizations and their members. It is estimated that the typical Fortune 1000 executive spends as much as 13% of his/her work time, or nearly seven work weeks per year per executive, resolving interpersonal disputes among supervisees and other workers (Pearson and Porath, 2005). Further, Pearson and Porath (2005) found in a large-scale survey study that nearly one in eight survey respondents who experienced workplace incivility left an organization due to that incivility. Given the high costs of unproductive time and turnover (Cascio, 2000), organizations are keenly interested in reducing these forms of interpersonal aggression among their members. In addition to financial costs, negative interpersonal behavior at work affects the physical and psychological health of organizational members (Cortina and Magley, 2003; Hershcovis and Barling, 2010; Robinson and Greenberg, 1998). Clearly, these intentional negative behaviors can be deleterious to both individuals’ and organizations’ overall health and performance.

The purpose of this study is to further our understanding of interpersonal workplace aggression by investigating the interaction between gender and personality in predicting CWB-I, addressing theoretical questions about antecedents of deviance, and integrating sexual selection theory (SST) and social role theory (SRT) into a discussion about workplace deviance. In addition to examining interactions between gender and theoretically relevant traits in the commonly used Five-Factor Model (FFM) of personality, we use the circumplex model of personality (Hofstee et al., 1992) to examine gender differences in the intersection of two theoretically relevant personality traits, Agreeableness and Emotional Stability, as well as their interaction with gender in predicting CWB-I. By establishing empirical evidence of the antecedents of interpersonal aggression for men and women, we hope to aid managers in understanding these negative behaviors and preventing them from occurring.

Defining workplace aggression and counterproductive work behaviors
Although numerous constructs have been used to describe negative behaviors at work (Griffin and Lopez, 2005), two commonly used terms are workplace aggression and counter-productive work behaviors (CWB). Definitions of these two concepts in the literature are highly similar. Aggression has been defined as behavior performed by individuals in an attempt to harm others at work or their organizations (Neuman and Baron, 1998), while CWB are defined as behaviors employees engage in that run contrary to the legitimate interests of an organization or behaviors harmful to an organization and its members (Sackett, 2002). To avoid construct confusion, we will use the term CWB to refer to this broad class of negative workplace behaviors and to frame our theoretical arguments and hypotheses.

Bennett and Robinson’s (1995) typology of deviant workplace behaviors focuses on two different forms. Organization-based deviance (CWB-O) targets the organization of which the perpetrator is a member and includes behaviors such as theft, falsifying expense reports, and withholding effort. Interpersonal deviance (CWB-I) targets other members of the organization of which the perpetrator is a member and includes making ethnic slurs, ridiculing others, and playing mean pranks. While all forms of CWB have been associated with pervasive negative consequences for individuals and organizations (for a review, see Sackett and DeVore, 2001), we have chosen to focus on CWB-I because these behaviors tie more closely with the broad framework of interpersonal aggression.

Theoretical background and hypotheses

FFM personality traits as predictors of CWB-I

In the past decade, growing evidence has accumulated in support of personality traits as important and useful predictors of workplace aggression, bullying, and CWB more generally (Douglas and Martinko, 2001; Berry et al., 2007). For example, Douglas and Martinko (2001) helped to spark interest in this topic by showing a combination of personality traits (including trait anger and trait attribution style) was able to account for 62% of the variance in aggressive acts. Since then, numerous meta-analytic studies and theoretical models have linked Conscientiousness, Agreeableness, and Emotional Stability to CWB (Cullen and Sackett, 2003; Ones et al., 1993; Berry et al., 2007; Salgado, 2002; Sackett et al., 2006). Of these traits, Agreeableness has been shown to be the best predictor of CWB-I (Berry et al.,
Because individuals low in Agreeableness are inconsiderate, vengeful, and insulting (Goldberg, 1999), their interpersonal relationships are characterized by conflict and discord (Jensen-Campbell and Graziano, 2001). Emotional Stability has also been shown to correlate with negative interpersonal behaviors such as CWB-I (Barrick et al., 2001; Salgado, 2002; Hurtz and Donovan, 2000; Mount et al., 2006; Mount et al., 1998). Conceptually, Emotional Stability is linked to CWB-I due to its role in regulating impulses, volition, and desires. Individuals low on Emotional Stability are stress-prone, anxious, have poor self-concepts, and are generally unpleasant to interact with. Thus, these two FFM traits have clear theoretical and empirical linkages with CWB-I.

Circumplex personality traits as predictors of CWB-I

Researchers investigating the relationship between FFM personality traits and work behaviors have recommended that additional research is needed to examine the joint effects or interplay among personality traits (e.g., Barrick et al., 2001; Oswald and Hough, 2010). For example, Hogan et al. (1996, p. 470) argue that interpreting a single personality scale value absent other information is an ill-advised “article of faith in traditional personality assessment.” Several studies have looked at the interplay of personality traits by examining the multiplicative interaction of FFM traits and have shown that trait x trait statistical interactions explain variability in behavior beyond the main effects of the traits (e.g., Witt, 2002; Witt et al., 2002). For example, hiring conscientious people lacking interpersonal competence can lead to dysfunctional outcomes (Goleman, 1998; Van Scotter and Motowildo, 1996; McManus and Kelly, 1999).

An alternative to multiplicative interactions is to examine the interplay of traits through circumplex models of personality (e.g., Hofstee et al., 1992). Circumplex models capture the intersection between pairs of FFM personality traits rather than multiplicative interactions between them. As Judge and Erez (2007) note, although both intersections and statistical interactions can measure the “constellation” quality of traits (Hogan et al., 1996; Organ, 1996), or how combinations of personality traits influence each other in non-additive ways, each concept uses a different methodology. Empirical research on circumplex models of the FFM traits (AB5C; Hofstee et al., 1992; Johnson and Ostendorf,
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1993; Judge and Erez, 2007) uses items that have dual loadings on FFM constructs. Using the factor loadings of items on a two-dimensional plane, the personality items map into a circular configuration (Goldberg, 1999). The circumplexes are divided such that each item bears a primary and secondary loading, creating two subsets in each circumplex. Figure 1 (adapted from Bäckström et al., 2009) depicts the mapping of the circumplex for Agreeableness and Emotional Stability, the two FFM traits most closely related to interpersonal deviance (Salgado, 2002; Sackett and Devore, 2001; Dalal, 2005; Mount et al., 2006; Barrick et al., 2001). One set of items loads primarily on Emotional Stability and secondarily on Agreeableness: this is the IV+/II+ circumplex, referred to as Calmness. The other set of items loads primarily on Agreeableness and secondarily on Emotional Stability: this is the II+/IV+ circumplex, or Pleasantness.

Despite the endorsements made for the AB5C by prominent personality researchers in the organizational psychology domain (e.g. Barrick et al., 2001; Hurtz and Donovan, 2000; Judge and Erez, 2007; Witt, 2002), to our knowledge only Judge and Erez (2007) have examined their validity in predicting work behaviors. They found that after controlling for the main effects of the FFM, the intersection of Extraversion and Emotional Stability positively predicted job performance in a sample of fitness center workers. In explaining their results, Judge and Erez concluded that the circumplex traits capture criterion-related “fuzzy” construct space in between the main FFM traits. Therefore, we believe that studying the relationship between a different set of trait intersections with a different dependent variable is a useful avenue of research towards gaining a better understanding of the dispositional antecedents of workplace behaviors. Accordingly, we believe the Pleasantness and Calmness circumplex traits should demonstrate utility in explaining variance in CWB-I incrementally over the FFM because of the compatibility principle: the circumplex traits are conceptually closer related to the criterion of CWB-I than either of the FFM traits from which they are derived. For example, individuals low on Calmness (IV-/II-) are often in a bad mood and ill-tempered. Individuals low on Pleasantness frequently insult and are quick to judge others. As indicated by these trait descriptors which are derived from a sample of the items used to assess the traits, these traits are closely related to CWB-I and should predict CWB-I over the
Gender differences in personality

Although numerous studies have examined gender differences in personality traits, none to our knowledge have explored gender differences in circumplex traits. In studies of gender and FFM traits, empirical evidence supports relatively consistent gender differences on two traits: Emotional Stability and Agreeableness. In Feingold’s (1994) meta-analysis on gender differences in the FFM, results showed that males score higher than females on Emotional Stability ($\delta = -.28$), and females score higher than males on Agreeableness ($\delta = .61$). Primary studies conducted after this meta-analysis have replicated this difference across multiple cultures (Costa et al., 2001; Schmitt et al., 2008) and in very large single-sample studies (Lippa, 2010a) using both direct (Lippa, 1995) and indirect personality measures (Lippa, 2010a). A summary of the past relevant results from meta-analytic and large-sample studies can be found in Table 1.

These gender-based differences in personality are likely a result of a complex interaction between biological and cultural factors (Lippa, 2005, 2010a). What is important for purposes of the present study is that the research in both Western and non-Western cultures consistently shows gender-based differences in these two FFM personality traits, whereby females are more Agreeable than males and males are more Emotionally Stable than females. We expect our results to be congruent with the existing research and propose the following hypotheses:

$H1a$: Males will score significantly lower than females on Agreeableness.

$H1b$: Females will score significantly lower than males on Emotional Stability.

The Calmness intersection term (IV+/II+) is the intersection of personality items that load primarily on Emotional Stability and secondarily on Agreeableness. As discussed above, females score lower on Emotional Stability than males and higher than men on Agreeableness; therefore, we expect females will score lower on Calmness than males. Pleasantness is the intersection of personality items that load primarily on Agreeableness and secondarily on Emotional Stability (II+/IV+). Because men
tend to score lower on Agreeableness and higher on Emotional Stability than Females, we expect that men will score lower on Pleasantness.

\[ H2a \]: Males will score significantly lower than females on Pleasantness.

\[ H2b \]: Females will score significantly lower than males on Calmness.

*Gender differences in aggressive behavior and CWB-I*

Reports of gender-based differences in interpersonally aggressive behavior can be traced to the 1920’s, while empirical reviews showing a main effect of gender appeared over 25 years ago (e.g., Hyde, 1984). Results from this research have led to a general consensus that males are more aggressive than females (Archer, 2000; 2004; Hershcovis et al., 2007). In an attempt to understand why men behave (on average) more aggressively than females, two major theoretical paradigms have served as frameworks for these findings: social role theory (SRT) and sexual selection theory (SST).

*Social Role Theory (SRT)*. This theory posits that sex differences in social behavior are the result of historical gender-based divisions of labor into work done at home and work pursued outside the home (Eagly, 1987). This division creates strong gender roles, which create expectations about behaviors, and in turn, these roles and behaviors are endorsed and perpetuated across generations through socialization processes (Eagly, 1987, 1997; Eagly et al., 2000). According to SRT, males learn that aggressive behaviors are socially acceptable, that agentic and aggressive behaviors are related to status (Eagly, 1987), and that status and the pursuit of status facilitate the use of aggression (Archer, 2004). SRT also predicts that there will be an overall gender difference in aggression such that males engage in more aggressive behaviors (Archer, 2004). In sum, according to Archer (2004), SRT makes three major predictions. First, sex differences in aggression will be modest but clearly observable. Second, there is consistency in this gender-based difference across a variety of aggressive behaviors and situations, and third, that the largest differences will be observed for types of physical aggression.

*Sexual selection theory (SST)*. This theoretical model suggests that evolutionary mechanisms are responsible for the development of gender-based differences in levels of aggression (Archer, 2004). These mechanisms are driven through the unequal parental investment for humans (Trivers, 1972), where
greater competition among males for reproductive opportunities leads to more displays of overt aggression. Proponents of SST also note that increased aggression may be linked to physiological characteristics of males such as increases in testosterone that occur at maturity (Archer, 1988; Book et al., 2001). Archer (2004) succinctly sums up sexual selection theory by noting four central predictions of this theoretical viewpoint. First, sex differences in aggression emerge early in childhood. Second, these differences are expected to be found across cultures. Third, these differences are maximized during peak years of sexual activity, and fourth, these differences are greater when there is a degree of risk involved. Both SRT and SST predict a main effect of gender on aggressive behavior, such that in general males will be more aggressive than females.

Empirical research on aggression in work settings consistently supports the predictions of SRT and SST. Specifically, males are more likely to engage in aggressive behaviors at work (e.g., Björkqvist et al., 1994; Kaukiainen et al., 2001; Rutter and Hine, 2005), bullying (e.g., Simpson and Cohen, 2004), and CWB-I (Hershcovis et al., 2007). These empirical findings are often explained by the differences in power and status commonly experienced by men and women in business contexts (e.g., Lee and Brotheridge, 2011; Simpson and Cohen, 2004). Consistent with the principles of SRT, males are thought to value (and often possess) higher levels of status and power than females in traditional business contexts, and to engage in CWB-I in order to achieve or maintain their high status and power. Thus, in line with the theoretical arguments and cumulative empirical findings, we propose the following hypothesis:

\[ H3: \text{Males will engage in significantly more CWB-I than females.} \]

Differential prediction of CWB-I based on gender

Although there is consistent support for gender and personality as predictors of CWB-I and other aggressive behaviors, little is known about how gender and personality might interact in predicting such behaviors. The primary reason why personality traits may exhibit differential relationships with CWB-I for different genders stems from nascent research showing that males and females engage in aggressive behaviors (of all types) for qualitatively different reasons. Specifically, females report they most often...
engage in aggressive behaviors when they lack self-control or the ability to inhibit natural aggressive tendencies, while males report they engage in aggressive behaviors chiefly to more successfully compete with others or dominate a situation (Campbell and Muncer, 2008). This would indicate that males and females could be engaging in CWB-I for starkly different reasons. It would then follow that personality traits indicative of low self-control might predict CWB-I for females (but not males), and personality traits indicative of a combative disposition and need to assert control might predict CWB-I for males (but not females). Relating these characteristics to the FFM traits, we propose that Emotional Stability will predict CWB-I for females because individuals low on this trait are likely to have low inhibitory control (Goldberg, 1999), and that Agreeableness will predict CWB-I for males because individuals low on this trait are more likely to be combative, competitive and control-oriented (Goldberg, 1999). Further, we expect each trait to predict unique variance in CWB-I, beyond the other FFM traits.

H4a: After controlling for the other FFM traits, Emotional Stability will negatively predict CWB-I for females but not males.

H4b: After controlling for the other FFM traits, Agreeableness will negatively predict CWB-I for males but not females.

Following our previous theorizing related to Agreeableness and Emotional Stability, coupled with existing research by Judge and Erez (2007) demonstrating that the circumplex traits do predict work behavior by accounting for criterion-relevant “fuzzy” space situated between traits, we also extend our hypotheses to the circumplex traits of Calmness and Pleasantness. Because Calmness loads primarily on Emotional Stability, we propose this circumplex trait will predict CWB-I for females but not males. Similarly, because Pleasantness loads primarily on Agreeableness, we propose this trait will predict CWB-I for males but not females. In addition, drawing on the compatibility principle, we believe these circumplex traits will predict CWB-I even after controlling for the FFM.

H5a: After controlling for the FFM and Pleasantness, Calmness will negatively predict CWB-I for females but not males.
H5b: After controlling for the FFM and Calmness, Pleasantness will negatively predict CWB-I for males but not females.

Method

Participants

The participants were 244 undergraduate students enrolled in a human resources management class in a large Midwestern university. In order to be included in the study, participants must have been working at least 15 hours per week throughout the semester. This reduced the final sample to 212, which was about 87% of the total class. Of the 212 participants, 137 (65%) were male and 75 (93%) were white. The average age of the participants was 21 years old and most were employed in entry-level service occupations such as restaurant servers, retail sales, and administrative assistants. All the students who filled out the survey received class credit.

Measures

Personality Measures: FFM constructs were measured via the 44-item Big Five Inventory (BFI; John et al., 1991). The BFI is a personality inventory that researchers have used in numerous studies and is accepted as a valid measure of the FFM traits (Judge and Erez, 2007). For each statement respondents indicated their level of agreement on a 5-point Likert scale (from 1 = strong disagree to 5 = strongly agree). Internal consistency reliabilities for the sample for males and females, respectively, were: Conscientiousness ($\alpha = .72, .75$), Extraversion ($\alpha = .80, .84$), Agreeableness ($\alpha = .77, .85$), Emotional Stability ($\alpha = .83, .80$), and Openness to Experience ($\alpha = .83, .75$).

Pleasantness (II+/IV+): The Pleasantness intersection trait was measured via the IPIP-AB5C inventory (Goldberg, 1999). This 12-item scale measures items that load primarily on Agreeableness and secondarily on Emotional Stability and includes items such as “I am on good terms with everyone” and “I find it hard to forgive others” (negatively keyed). Alpha was .79 for females in our sample and .83 for males.
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**Calmness (IV+/II+):** The calmness intersection trait was also measured via the IPIP-AB5C inventory (Goldberg, 1999). This 12-items scale uses items that load primarily on Emotional Stability and secondarily on Agreeableness and includes items such as “I rarely get irritated” and “I am often in a bad mood” (negatively keyed). Alpha was .79 for females in our sample and .83 for males.

**CWB-I:** Interpersonal counterproductive work behaviors were measured via Bennett and Robinson’s (2000) 7-item measure of interpersonal deviance, which included items such as “I acted rudely toward someone at work” and “I publicly embarrassed someone at work.” Responses were assessed on a 5-point Likert scale about the relative frequency of the behaviors over the past year. Alpha was .77 for the females in our sample and .86 for the males.

**Factor analysis.** We conducted a confirmatory factor analysis (CFA) using LISREL 8.8 (Jorsekog and Sorbom, 2006) to confirm the proposed four-factor structure of Emotional Stability, Agreeableness, Pleasantness, and Calmness. In order to conserve statistical power, we created item parcels made up of three randomly selected items from each of the traits’ scales (Williams and O’Boyle, 2008). Because Emotional Stability and Calmness had a total number of items not evenly divisible by three, they contained one and two 2-item parcels, respectively. The CFA confirmed the presence of a four-factor structure ($\chi^2 = 139.38, \text{RMSEA} = .067, \text{SRMR} = .057, \text{GFI} = .91$). The fit of the four-factor structure was superior to a two-factor structure where Pleasantness and Calmness were constrained to be equivalent to their respective primary FFM trait: Agreeableness for Pleasantness and Emotional Stability for Calmness, respectively. The fit statistics and chi square difference test for the two-factor model were as follows: $\chi^2 = 252.14, \text{RMSEA} = .10, \text{SRMR} = .076, \text{GFI} = .86, \Delta\chi^2 = 112.76, p < .001$.

**Results**

Table 2 shows the means (M), standard deviations (SD), and observed correlations among the variables used in the study for the male and female groups. As shown, for males in our sample, Agreeableness ($r = -.36, p < .01$), Openness ($r = -.21, p < .05$), Pleasantness ($r = -.42, p < .01$), and Calmness ($r = -.31, p < .01$) were significantly correlated with CWB-I. For females, Agreeableness ($r = -$
Conscientiousness ($r = -0.29, p < 0.01$), Emotional Stability ($r = -0.38, p < 0.01$), Pleasantness ($r = -0.29, p < 0.05$), and Calmness ($r = -0.47, p < 0.01$) were significantly correlated with CWB-I.

Table 3 summarizes the gender differences between males and females on personality traits and behaviors. As shown, the means for males and females on Agreeableness were 3.77 and 4.06, respectively. This difference was statistically significant ($F = 10.59, p < .001$). Cohen’s $d$ for these two groups on Agreeableness is .48, which is a medium effect size (Cohen, et al., 2003). These results support Hypothesis 1a, indicating that females are more agreeable than males.

On the personality trait of Emotional Stability, the means for males and females were 3.55 and 3.32, respectively. This difference was statistically significant ($F = 5.84, p < .017$). Cohen’s $d$ for these two groups is .34, again indicating a medium effect. These results support Hypothesis 1b, indicating that males scored higher than females on Emotional Stability.

For the circumplex measure of Pleasantness (loading primarily on Agreeableness and secondarily on Emotional Stability), the means for males and females were 3.58 and 3.88, respectively. This difference is statistically significant ($F = 16.31, p < .000$). Cohen’s $d$ for Pleasantness was 0.58, indicating a medium effect. These results provide support for Hypothesis 2a, indicating that females score higher than males on Pleasantness.

Males and females differed on Calmness (primary loading on Emotional Stability, secondary loading on Agreeableness) as well, with means of 3.62 and 3.87, respectively. However, the results ran counter to our expectations: females scored higher than males on Calmness. The differences were statistically significant ($F = 8.13, p < .005$). Cohen’s $d$ for Calmness was 0.41, a medium effect. Thus, Hypothesis 2b was not supported.

Males and females also differed on the dependent measure of CWB-I. The means for males and females were 1.69 and 1.33, respectively. This difference was statistically significant ($F = 18.86, p < .000$). Cohen’s $d$ for this measure is -.67, again indicating a medium effect size. These results provide support for Hypothesis 3, indicating that males scored higher on interpersonal workplace deviance than females.
We tested Hypotheses 4a through 5b using hierarchical regression analyses (Cohen, et al., 2003). Before our analyses, we standardized all continuous variables to reduce multicollinearity between the main effects and interaction terms. To test the differential prediction hypotheses for Emotional Stability and Agreeableness (4a and 4b, respectively), Gender was entered in the first step, followed by the FFM traits in the second step, and the interactions between Gender and Emotional Stability and Agreeableness in the third step. To test the differential prediction hypotheses for Calmness and Pleasantness (Hypotheses 5a and 5b), we entered the two circumplex constructs after Gender and the FFM traits as a first step, followed by the interactions between Gender and Calmness and Pleasantness in the second step.

Table 4 presents the results of the regression analyses. Column 1 shows that Gender was a significant predictor of CWB-I ($\beta = .29, p < .01$). Column 2 shows that the first two steps consisting of gender and the FFM significantly predicted CWB-I ($R^2 = .23, p < .01$). Of the FFM traits, only Emotional Stability was not a significant predictor of CWB-I ($\beta = -.01, n.s.$). Hypothesis 4a stated that Emotional Stability would negatively predict CWB-I in women but not men while Hypothesis 4b stated that Agreeableness would negatively predict CWB-I in men but not women. Column 3 shows that the block of variables consisting of the two interaction terms (Gender x Emotional Stability, Gender x Agreeableness) accounted for statistically significant incremental variance ($\Delta R^2 = .03, p < .05$). In addition, we found support for the hypotheses with statistically significant interactions between Gender and Agreeableness ($\beta = -.31, p < .05$) and between Gender and Emotional Stability ($\beta = .22, p < .05$). The interactions are depicted in Figures 2 and 3; both were in the hypothesized direction. Figure 2 illustrates that Emotional Stability was a strong negative predictor of CWB-I for women, but not men. Figure 3 shows that Agreeableness was a strong negative predictor of CWB-I for men, but not women. As an additional test, we calculated simple slopes for males and females and tested for their statistical significance with 95% confidence intervals (CI; Cohen et al., 2003). For the Gender x Emotional Stability interaction, the female simple slope was -.20 and its CI did not include zero (95% CI: -.31, -.09), whereas the male simple slope was .02 and its CI did include zero (95% CI: -.05, .09). Therefore, Hypothesis 4a was supported. For the
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Gender x Agreeableness interaction, the female simple slope was -.04 and its CI did include zero (95% CI: -.21, .13), whereas the male simple slope was -.35 and its CI did not include zero (95% CI: -.48, -.22). Therefore, Hypothesis 4b was also supported.

Hypothesis 5a stated that Calmness would negatively predict CWB-I for females but not males, while Hypothesis 5b stated that Pleasantness would negatively predict CWB-I for males but not for females. The tests for these hypotheses are presented in columns 4 and 5 of Table 4. As shown in column 4, the addition of Pleasantness and Calmness accounted for incremental variance in predicting CWB-I over that accounted for by gender and the FFM ($\Delta R^2 = .06, p < .01$). In addition, Pleasantness ($\beta = -.29, p < .01$) and Calmness ($\beta = -.19, p < .05$) had statistically significant individual effects. In the final step, the interaction terms were entered. As shown in Column 5, the Gender x Pleasantness interaction (H5b) was significant ($\beta = -.31, p < .05$) but the Gender x Calmness interaction was not ($\beta = .19, p < .05$). The Gender x Pleasantness interaction is depicted graphically in Figure 4. The simple slopes test revealed that the slope of the male line was -.38 and its 95% CI did not include zero (-.54, -.22) while the female line’s slope was -.07 and its 95% CI did include zero (-.24, .10). Therefore, Hypothesis 5a was not supported but Hypothesis 5b was.

Because a secondary interest of this study was to examine the efficacy of utilizing the personality circumplex to predict CWB-I, we conducted some additional regression analyses. In the first step, we regressed CWB-I on gender and the FFM, followed by the statistical interaction between Agreeableness and Emotional Stability in the second step, and the two circumplex traits, Calmness and Pleasantness, in the third step.\(^1\) Results of the regressions indicated that both circumplex traits provide incremental validity over the Agreeableness x Emotional Stability interaction ($\Delta R^2 = .05, p < .01$) and both were statistically significant after controlling for gender, the FFM, and the Agreeableness x Emotional Stability interaction (Pleasantness: $\beta = -.27, p < .01$; Calmness: $\beta = -.15, p < .10$). These results demonstrate the utility of the circumplex traits beyond that afforded by a statistical interaction of the primary traits.

**Discussion**

\(^1\) We would like to thank an anonymous reviewer for suggesting this analysis.
Understanding the antecedents of workplace aggression can provide organizational leaders with a substantial advantage in decreasing the incidence of these negative behaviors in the workplace. Previous studies have examined the role of main and joint effects of personality on interpersonal aggression (e.g. Mount et al., 2006), the role of gender in interpersonal aggression (e.g. Lee and Brotheridge, 2011), gender-based differences in personality (e.g. Feingold, 1994) and intersection models of personality predicting work outcomes (Judge and Erez, 2007). This study uniquely contributes to and integrates these literatures with four primary findings.

First, our findings show gender differences in mean levels of CWB-I, supporting SST and SRT while extending previous research by showing that men are more likely to engage in aggressive interpersonal behaviors. Second, our study contributes to the literature on gender differences in personality traits by showing there are gender differences in Pleasantness and Calmness; we found that females scored significantly higher than males on both traits. Third, our results contribute to existing literature on the relationship between personality and CWB-I by demonstrating how the intersection traits Pleasantness and Calmness provide statistically significant incremental validity in predicting interpersonal deviance over the effects of the FFM traits. Researchers have examined the interplay of personality traits in predicting work outcomes with multiplicative interactions, but little research has examined the intersection of FFM personality traits in the management field using the circumplex model. Fourth, our results further contribute to the literatures on gender differences and antecedents of workplace aggression by demonstrating that the predictive effects of Emotional Stability, Agreeableness, and Pleasantness on CWB-I differ based on gender.

The mean differences between men and women on Agreeableness and Emotional Stability found in our study complement past research (e.g. Lippa, 2005) that showed men are more emotionally stable and less agreeable than women. As an extension to these previous findings, we found that the Pleasantness circumplex trait (loading primarily on Agreeableness and secondarily on Emotional Stability) mirrors these findings, with women being more pleasant than men. However, the Calmness trait intersection term (loading primarily on Emotional Stability and secondarily on Agreeableness) provided
perplexing results, as females scored higher than males on this trait. It is difficult to explain this
counterintuitive mean difference; however, past research has shown that Emotional Stability sometimes
has unusual, idiosyncratic relationships with other traits (Hofstee et al., 1992). Another important
contribution of this study is that the findings enhance our understanding of personality predictors of
interpersonal deviance. Drawing on the promising yet infrequently used structure of personality the AB5C
circumplex provides (Hofstee et al., 1992; Johnson and Ostendorf, 1993), we found that Pleasantness and
Calmness significantly predicted interpersonal deviance across the entire sample even after controlling for
the FFM traits.

Moreover, a noteworthy and previously unreported finding is that Pleasantness negatively
predicted CWB-I for males but not females. Conversely, we did not find that the relationship between
Calmness and CWB-I differed across genders. Because individuals low on Calmness are short-tempered,
upset, and usually in a bad mood, it is possible that this trait predicts CWB-I for all individuals, regardless
of gender or the specific motivation underlying engaging in aggressive behavior. Yet another unique
finding in this same vein is the differential prediction of CWB-I by Emotional Stability and
Agreeableness. Our results indicate that Emotional Stability negatively predicted CWB-I for females but
not males, and that Agreeableness negatively predicted CWB-I for males but not females. These findings
provide support for theories indicating that aggression expressed by males and females has different
dispositional antecedents (Campbell and Muncer, 2008; Archer, 2004) and are differentially motivated.
For example, low Emotional Stability is related to a disposition toward impulsivity and lack of inhibitory
control (Whiteside and Lynam, 2001; Miller, Flory, Lynam, and Leukefeld, 2004), and impulsivity is
linked to deviant behaviors across a variety of situations (Miller and Lynam, 2001). Conversely, low
Agreeableness is associated with a tendency to engage in destructive relationship tactics (Jensen-
Campbell, et al., 2003) as well as a lack of motivation to maintain positive interpersonal relationships
with others (Gleason, et al., 2004; Jensen-Campbell and Graziano, 2001). This same logic applies to the
differential prediction of CWB-I by Pleasantness. As Pleasantness has a strong conceptual link to
Agreeableness, it follows that it would predict better than Calmness, primarily composed of Emotional
Stability, in predicting CWB-I for men. Thus, our study demonstrates that unpleasant, combative men and moody, anxious women are most likely to engage in CWB-I.

Limitations

Like any other research study, our study has several limitations. First, all of the measures in our study were self-report, which may affect the nature of correlations among study variables due to common method variance (CMV). However, self-reports are the most accepted ways to measure both personality traits and counterproductive work behavior (Raver and Nishii, 2010; Berry et al., 2007; Berry et al., 2011). In addition, some research suggests that problems related to common method variance are overstated (e.g. Lindell and Whitney, 2001; Spector, 1994). For example, research (e.g. Berry et al., 2011; Raver and Nishii, 2010) has shown that self-reports with potential CMV problems and studies with reports from multiple sources produce similar results. Second, it is possible that respondents filled out the CWB-I survey in a socially desirable fashion. However, a recent meta-analysis found that individuals actually self-report more CWBs than observers report (Berry et al., 2011). Of course, this fact does not rule out that individuals respond in a socially desirable fashion, but should help to allay some concerns.

Practical Implications

Our findings have several practical implications for management practice. First, they illustrate that the same personality trait scores may lead to different frequencies of interpersonal deviance among men and women, and different personality trait scores may lead to the same frequencies of interpersonal deviance among men and women. Further, by combining male and female samples, it may mask the real relationships of personality traits to interpersonal aggression.

Second, as the circumplex construct measures in our study had statistically significant incremental validity on interpersonal workplace deviance over the FFM traits, it may be time to consider adopting the use of personality tests for selection that assess intersection traits. A main advantage of the use of circumplex models of personality is that intersection terms provide a direct and psychometrically sound way to measure the interplay between personality traits. However, before such steps can be taken
there is a need for future research (discussed below) to further understand the value of utilizing the circumplex model of personality.

Third, this study emphasizes the need for managers to be sensitive to possible gender differences in reasons for engaging in CWB-I. As demonstrated by the currently nascent extant theory and research literatures, as they relate to interpersonal aggression, personality traits are enacted differently by males and females. Understanding these differences between males and females could help managers more effectively manage their employees with the goal of reducing CWB-I.

**Future Research Directions**

Given the promising findings in this study, we believe it would be fruitful for future studies to examine the Pleasantness and Calmness circumplex traits as well as other circumplex traits in predicting work behaviors and outcomes. It is possible that FFM traits examined singularly and independently do not predict a particular criterion, but that the circumplex intersections of the two traits may be significant predictors. Additionally, it would be worthwhile to explore whether the gender differences in Calmness and Pleasantness have relationships to other work behaviors or outcomes such as performance or citizenship behaviors.

An additional future research direction is to examine not only different motivations for workplace aggression in men and women but also different *forms* of workplace aggression in men and women. According to Campbell and Muncer (2008), males engage in more direct forms of aggression such as arguing or insulting, whereas females engage in more indirect forms of aggression, such as gossiping or spreading rumors. Future research should explore personality antecedents of direct and indirect forms of CWB-I to expand upon gender differences apparent in our results. The scale used in this study does not make such distinctions, and due to its short length (7 items) it was impossible for us to extract psychometrically sound, distinct dimensions of CWB-I. Future research should be sensitive to these differences and seek to develop and validate scales made to specifically measure them.
REFERENCES


*Aggressive Behavior*, 34: 282-293.


Figure 1. The Agreeableness/Emotional Stability Circumplex.

Loading plot of a two-factor circumplex model. The x-axis represents the level of loading on IV, Emotional Stability, while the y-axis represents the level of loading on II, Agreeableness.
Figure 2. The Interaction Between Emotional Stability and Gender in Predicting CWB-I
Figure 3. The Interaction Between Agreeableness and Gender in Predicting CWB-I
Figure 4. The Interaction Between Pleasantness and Gender in Predicting CWB-I
Table 1. Summary of Differences in Personality Traits. Adapted from Lippa (2010b).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N &gt; 22,000</td>
<td>N = 17,637</td>
<td>N &gt; 200,000</td>
<td>N = 105,742</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>d = .27</td>
<td>d = .15</td>
<td>d = .56</td>
<td>d = .61</td>
</tr>
<tr>
<td>Emotional Stability*</td>
<td>d = -.26</td>
<td>d = -.40</td>
<td>d = -.41</td>
<td>d = -.28</td>
</tr>
</tbody>
</table>

Note: a positive score indicates that women scored higher than men. A negative effect size indicates men scored higher than women.

*If a study reported Neuroticism, the positive or negative sign was reversed.
Table 2. Zero-Order Correlations for Females (above diagonal) and Males (below diagonal) between Personality Variables and CWB-I

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean¹</th>
<th>S.D.¹</th>
<th>r_{xx}¹</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extraversion</td>
<td>3.69</td>
<td>3.46</td>
<td>.66</td>
<td>.69</td>
<td>.80</td>
<td>.84</td>
<td>.19</td>
<td>.36*</td>
<td>.27*</td>
<td>.17</td>
<td>.27*</td>
</tr>
<tr>
<td>2. Agreeableness</td>
<td>4.06</td>
<td>3.77</td>
<td>.52</td>
<td>.65</td>
<td>.77</td>
<td>.85</td>
<td>.29*</td>
<td>.30**</td>
<td>.45**</td>
<td>.29*</td>
<td>.70**</td>
</tr>
<tr>
<td>3. Conscientiousness</td>
<td>3.96</td>
<td>3.77</td>
<td>.49</td>
<td>.55</td>
<td>.72</td>
<td>.75</td>
<td>.26*</td>
<td>.25**</td>
<td>.38**</td>
<td>.31**</td>
<td>.27*</td>
</tr>
<tr>
<td>4. Emotional Stability</td>
<td>3.32</td>
<td>3.55</td>
<td>.72</td>
<td>.65</td>
<td>.83</td>
<td>.80</td>
<td>.38**</td>
<td>.30**</td>
<td>.29**</td>
<td>.21</td>
<td>.34**</td>
</tr>
<tr>
<td>5. Openness</td>
<td>3.33</td>
<td>3.36</td>
<td>.61</td>
<td>.54</td>
<td>.83</td>
<td>.75</td>
<td>.28**</td>
<td>.19*</td>
<td>.11</td>
<td>.07</td>
<td>.27*</td>
</tr>
<tr>
<td>6. Pleasantness (II+/IV+)</td>
<td>3.88</td>
<td>3.58</td>
<td>.49</td>
<td>.54</td>
<td>.79</td>
<td>.83</td>
<td>.32**</td>
<td>.80**</td>
<td>.23*</td>
<td>.37**</td>
<td>.18*</td>
</tr>
<tr>
<td>7. Calmness (IV+/II+)</td>
<td>3.87</td>
<td>3.62</td>
<td>.57</td>
<td>.65</td>
<td>.79</td>
<td>.83</td>
<td>.31**</td>
<td>.66**</td>
<td>.26**</td>
<td>.56**</td>
<td>.23*</td>
</tr>
<tr>
<td>8. CWB-I</td>
<td>1.33</td>
<td>1.69</td>
<td>.39</td>
<td>.68</td>
<td>.77</td>
<td>.86</td>
<td>.04</td>
<td>-.36**</td>
<td>-.10</td>
<td>-.01</td>
<td>-.21*</td>
</tr>
</tbody>
</table>

Note: *Statistically significant at a \(p<.05\) level (two-tailed); ** statically significant at a \(p<.01\) level (two-tailed)

¹: Females’ values are presented first, followed by males’.

N=75 for females, N=137 for males
Table 3. Gender differences on Personality Traits and CWB-I

<table>
<thead>
<tr>
<th>Variable</th>
<th>95% CI for Males</th>
<th>95% CI for Females</th>
<th>Cohen’s $d$</th>
<th>Test Statistic $(F)$ and Significance values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreeableness</td>
<td>(3.67, 3.88)</td>
<td>(3.92, 4.19)</td>
<td>0.48 (F &gt; M)</td>
<td>10.58, $p &lt; .001$</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>(3.44, 3.67)</td>
<td>(3.17, 3.47)</td>
<td>-0.34 (M &gt; F)</td>
<td>5.84, $p &lt; .017$</td>
</tr>
<tr>
<td>CWB-I</td>
<td>(1.59, 1.79)</td>
<td>(1.19, 1.46)</td>
<td>-0.67 (M &gt; F)</td>
<td>18.86, $p &lt; .000$</td>
</tr>
<tr>
<td>Pleasantness</td>
<td>(3.49, 3.67)</td>
<td>(3.77, 3.99)</td>
<td>0.41 (F &gt; M)</td>
<td>16.37, $p &lt; .000$</td>
</tr>
<tr>
<td>Calmness</td>
<td>(3.51, 3.73)</td>
<td>(3.74, 4.00)</td>
<td>0.58 (F &gt; M)</td>
<td>8.13, $p &lt; .005$</td>
</tr>
</tbody>
</table>

Note: Cohen’s $d$ was calculated using the female mean as the first mean in the equation and using the pooled standard deviation, calculated by the square root of the pooled variances. So, a negative number means that males scored higher on that trait/behavior and a positive number means females scored higher. See Table 2 for the means used.
Table 4. Hierarchical Regression Analyses for Gender, the Big Five, the Intersection Traits, and the Hypothesized Interactions Predicting CWB-I

<table>
<thead>
<tr>
<th>Variables/Step</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
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<tbody>
<tr>
<td>Gender</td>
<td>.29**</td>
<td>.24**</td>
<td>.29*</td>
<td>.18**</td>
<td>.19**</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.21**</td>
<td>.20**</td>
<td>.23*</td>
<td>.23**</td>
<td></td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>-.11*</td>
<td>-.11*</td>
<td>-.09</td>
<td>-.11*</td>
<td></td>
</tr>
<tr>
<td>Agreeableness (II+)</td>
<td>.32**</td>
<td>-.04</td>
<td>-.03</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.11*</td>
<td>-.11</td>
<td>-.10</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Emotional Stability (IV+)</td>
<td>-.01</td>
<td>-.20*</td>
<td>.08</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Pleasantness (II+/IV+)</td>
<td></td>
<td></td>
<td>-.29**</td>
<td>-.07</td>
<td></td>
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<tr>
<td>Calmness (IV+/II+)</td>
<td></td>
<td></td>
<td>-.19*</td>
<td>-.32*</td>
<td></td>
</tr>
<tr>
<td>Gender x Emotional Stability (H4a)</td>
<td></td>
<td></td>
<td>.22*</td>
<td></td>
<td></td>
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<tr>
<td>Gender x Agreeableness (H4b)</td>
<td></td>
<td></td>
<td>-.31*</td>
<td></td>
<td></td>
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<tr>
<td>Gender x Calmness (H5a)</td>
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<td>.19</td>
<td></td>
</tr>
<tr>
<td>Gender x Pleasantness (H5b)</td>
<td></td>
<td></td>
<td></td>
<td>-.31*</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>.29**</td>
<td>.48**</td>
<td>.51**</td>
<td>.54**</td>
<td>.56**</td>
</tr>
<tr>
<td>R²</td>
<td>.08</td>
<td>.23</td>
<td>.26</td>
<td>.29</td>
<td>.31</td>
</tr>
<tr>
<td>Δ R²</td>
<td></td>
<td>.15**</td>
<td>.03*</td>
<td>.06**</td>
<td>.02*</td>
</tr>
</tbody>
</table>

Notes: All beta values in the table are standardized regression coefficients. Gender was coded 0 = Female, 1 = Male. Δ R² = unique variance explained by (2) the FFM over gender, (3) the interactions between gender and the hypothesized FFM traits over the FFM and gender, (4) the intersection traits over gender and the FFM, and (5) the interactions between gender and the intersection traits over the intersection traits, FFM, and gender. * p< .05. ** p< .01. N = 212.