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## **TRAIT CORRELATES OF RELATIONAL AGGRESSION IN A NONCLINICAL SAMPLE: DSM-IV PERSONALITY DISORDERS AND PSYCHOPATHY**

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The implications of adult relational aggression in adults for personality pathology are poorly understood. We investigated the association between relational aggression and features of DSM-IV personality disorders and psychopathy in a sample of undergraduates ( $N = 220$ ). In contrast to the childhood literature, we found no significant difference in relational aggression between men and women. Unlike overt aggression, which correlated about equally highly with features of all three personality disorder clusters, relational aggression correlated significantly more highly with features of Cluster B than Clusters A or C. In addition, even after controlling for overt aggression, relational aggression correlated significantly with features of psychopathy, although only with Factor 2 traits. With the exception of sadistic personality disorder features, gender did not moderate the relationship between relational aggression and personality pathology. Further research on the psychopathological implications of relational aggression in more severely affected samples is warranted.

Relational aggression is an interpersonally damaging psychological phenomenon observed commonly in children and adolescents. Although work on relational aggression is plentiful, only a handful of studies has focused on adult samples. Work in younger samples indicates that relationally aggressive individuals fare worse than their less aggressive peers in social contexts (Crick, 1996; Crick & Grotpeter, 1995). Initial work on adult samples supports these claims (Linder, Crick, & Collins, 2002; Werner & Crick, 1999). Nevertheless, despite extensive work on relational aggression's positive correlation with peer status and internalizing symptoms, there is minimal research on the association between relational aggression and personality disorders (Crick et al., 1999).

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### **THE CONSTRUCT OF RELATIONAL AGGRESSION: SEX DIFFERENCES AND CORRELATES**

Crick (1995; Crick & Grotpeter, 1995) introduced the concept of relational aggression to describe a constellation of socially problematic behaviors, such as gossiping and rumor spreading. These actions, which are often viewed as comprising a subtype or variant of covert aggression (Björkqvist, 1994), are presumably performed largely for the purpose of social manipulation. They differ from overtly aggressive actions, such as violence, in being subtler, more indirect, and inherently interpersonal. In a review of the literature, Rose, Swenson, and Waller (2004) found that although relational and overt aggression correlated as highly as 0.6 to 0.7, 60–75% of aggressive youth largely display primarily only one of these two forms of aggression.

Early research suggested that relational aggression differed from overt aggression in being more common in girls than boys (Crick, 1995). Indeed, several popular sources have emphasized the selectivity of relational aggressive actions to girls (Simmons, 2003). Nevertheless, findings concerning gender differences in relational aggression have been mixed, with some studies finding higher levels in females (Crick & Grotpeter, 1995; Crick & Werner, 1998), others finding no significant gender differences (Marsee, Silverthorn, & Frick, 2005; Richardson & Green, 1999), and some even finding higher levels in males (Storch, Bagner, Geffken, & Baumeister, 2004). The reasons for these discrepancies are unclear.

Although the relational aggression construct originated with work on children, recent work has begun to examine the correlates of this construct in adults. Werner and Crick (1999) found that adult male and female relational aggression correlated significantly with negative social outcomes, including peer rejection. In a sample of undergraduates, Storch et al. (2004) found no significant relationship in men between relational aggression and internalizing symptoms or substance use, but a positive relationship between physical aggression and substance use. In women, they found that both relational and physical aggression predicted internalizing symptoms, whereas only relational aggression predicted substance use.

### **RELATIONAL AGGRESSION AND DSM-IV PERSONALITY DISORDER TRAITS**

Relationally aggressive individuals have been described as manipulative, affectively unstable, and unfeeling in their pursuit of social goals (Crick, 1996). These characteristics, which overlap with the traits of several Cluster B personality disorders (American Psychiatric Association, 1994), reflect a pattern of troublesome interpersonal relationships common to these disorders. Indeed, in a sample of undergraduates Werner and Crick (1999) found that relational aggression correlated positively with borderline and antisocial personality disorder traits. Nevertheless, few other researchers have examined the association between relational aggression and features of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) personality disorders.

In addition to the Cluster B DSM-IV personality disorders, sadistic and passive-aggressive personality disorders share significant content overlap with relational aggression, although their empirical overlap has yet to be investigated. Sadistic personality disorder, included in the Appendix of the DSM-III-R (American Psychiatric Association, 1987), is characterized by cruel and demeaning behavior beginning in early adulthood. Passive-aggressive (negativistic) personality disorder, included in the Appendix of DSM-IV (American Psychiatric Association, 1994), is marked by hostile attitudes towards others and passive avoidance of responsibilities beginning in early adulthood.

### **RELATIONAL AGGRESSION AND PSYCHOPATHY**

There is also reason to suspect a close link between relational aggression and psychopathic personality (psychopathy). Given the substantial empirical overlap between Cluster B personality disorders and psychopathy (Cale & Lilienfeld, 2002; Salekin, Rogers, & Sewell, 1997; Warren et al., 2003), relational aggression may be similarly associated with psychopathic features. Nevertheless, virtually all published work on psychopathy and aggression has focused on overt (e.g., physical) aggression (e.g., Salekin, Rogers, & Sewell, 1996; Stafford & Cornell, 2003) rather than on covert forms of aggression, including relational aggression. This emphasis is not surprising given that most previous work on psychopathy has been conducted on offender samples and other groups marked by high levels of violence (Lilienfeld, 1994, 1998). Nevertheless, several authors (e.g., Babiak & Hare, 2006; Hall & Benning, 2006; Lilienfeld, 1992; Widom, 1984) have conjectured that psychopathy may be preferentially manifested in subtler and more indirect forms of aggression, including social manipulation, in relatively high functioning samples (e.g., college students, business leaders, individuals in the community).

In the adult literature, most researchers have found that psychopathy is underpinned by at least two core factors. Factor 1 comprises the interpersonal and affective components of psychopathy and consists of self-centeredness, superficial charm, manipulativeness, lack of empathy and guilt, and weak emotional attachment to others (Hare, 2003). In contrast, Factor 2 comprises a chronic disposition toward antisocial behavior and poor impulse control (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). Nevertheless, the extent to which relational aggression is differentially associated with these two dimensions of psychopathy is unclear. One might anticipate closer ties between relational aggression and Factor 2 given the latter's conceptual and empirical links to aggression-proneness (Harpur, Hare, & Hakstian, 1989). Alternatively, Factor 1's extensive coverage of interpersonal features, including grandiosity, superficial charm, and manipulativeness, might lead one to anticipate a significant association with Factor 1 traits as well.

To our knowledge, only one published study has examined the associa-

tion between relational aggression and psychopathy. Marsee, Silverthorn, and Frick (2005) found that psychopathic personality traits were correlated significantly with relational aggression ( $r = 0.41$ ) in a sample of pre-adolescent girls ( $n = 114$ ) and boys ( $n = 86$ ). They found no significant difference in levels of relational aggression across age or gender. However, the investigators were unable to examine the correlates of the two factor model of psychopathy, as the youth psychopathy instrument administered in their study (Antisocial Process Screening Device; Frick & Hare, 2001) fits a three rather than a two factor model.

### **THE PRESENT STUDY**

In this study, we aimed to better delineate the personality disorder correlates of relational aggression in adults. We examined these issues in a nonclinical (undergraduate) sample, in which the aggressive manifestations of psychopathic traits may be more indirect and relational than in psychiatric or prison samples, in which overt aggression may predominate (Hall & Benning, 2006).

Specifically, we hypothesized that relational aggression would covary markedly with Cluster B's emotional and dramatic traits, but less so with Cluster A's traits of eccentricity or Cluster C's traits of anxiety and fear. In exploratory analyses, we examined the association between relational aggression and sadistic and passive-aggressive personality disorder traits. We also hypothesized that relational aggression would correlate significantly with psychopathic personality traits, especially those of Factor 2. Nevertheless, we also anticipated a positive association, albeit lower in magnitude, between relational aggression and Factor 1 traits.

Finally, we examined gender differences in relational aggression. First, we examined the mean levels of both relational and overt aggression in males and females. Second, we examined whether gender moderated the relationship between relational aggression and traits of DSM-IV personality disorders and psychopathy. These analyses were motivated by suggestions that the phenotypic expression of psychopathy may differ in males and females, with males exhibiting a more direct and females a less direct manifestation of aggressive tendencies (Cale & Lilienfeld, 2002; Hamburger, Lilienfeld, & Hogben, 1996). In light of these conjectures, we predicted that traits of Cluster B personality disorders and psychopathy would be more strongly associated with relational aggression in females than in males.

### **METHOD**

#### **SUBJECTS**

Participants were 220 undergraduate students at a private university in the southeast U.S. The sample consisted of 152 females (69%) and 68 males (31%). The mean age of the sample was 18.9 years ( $SD = 1.0$ , range

= 17–28). The ethnic composition of the sample was 73.6% Caucasian, 14.1% Asian, 6.8% African-American, 2.3% Hispanic, and 2.3% of the sample reported themselves as “Other.” Students completed the battery for partial course credit.

### Measures

*Relational Aggression.* Relationally aggressive tendencies were assessed using the two available measures of this construct in adults. First, we administered the Relational Aggression Scale (RAS; K. Markon, unpublished measure, 2003), a 20-item measure designed to assess general relational aggression. For each item, individuals rate on a 4-point scale how true each statement is when applied to them. The items include “I’ve told lies about someone who upsets me” and “when someone upsets me, I made sure no one else will have anything to do with them.” Cronbach’s alpha for the RAS in this sample was .90.

Second, we administered the relational aggression subscale of the Self-Report of Aggression and Social Behavior (SRASB; Morales, 1999), which focuses substantially on relational aggression within the context of intimate relationships. For each item, individuals rate on a 7-point scale (1 = not at all true to 7 = very true) how true each statement is when applied to them. The items include “If my romantic partner makes me mad, I will flirt with another person in front of him/her” and “I have threatened to break up with my romantic partner in order to get him/her to do what I wanted.” Cronbach’s alpha for the SRASB in this sample was .81.

*Overt Aggression.* To assess overt aggressive tendencies, we administered the Aggression Questionnaire (AQ; Buss & Perry, 1992). This measure has been used widely in aggression research (Eckhardt, Norlander, & Deffenbacher, 2004). For each of the 29 items, individuals rate on a 5-point scale how characteristic each statement is when applied to them. Items include “Once in a while, I can’t control the urge to strike another person” and “I have trouble controlling my temper.” This measure contains four subscales: Anger, Physical aggression, Hostility, and Verbal aggression. The AQ correlates positively with a history of fighting behavior (Archer, Holloway, & McLouglin, 1995) and other self-report measures of aggression, but not with measures of sociability and self-esteem (Buss & Perry, 1992). Cronbach’s alpha for the AQ in this sample was .86.

*Personality Disorder Traits.* We administered two widely used self-report measures of DSM-IV personality disorder traits. The Short Coolidge Axis II Inventory (SCATI; Coolidge & Merwin, 1992) assesses symptoms of the 10 personality disorders of the DSM-IV as well as sadistic and passive aggressive personality disorders. The SCATI is a 70-item measure, scored on 4-point scale. Coolidge and Merwin (1992) found a 50% concordance between clinician’s ratings of Axis II disorders and CATI personality disorder traits.

Second, we administered the Personality Diagnostic Questionnaire, 4th edition (PDQ-IV; Hyler, 1994), an 85 item, True-False measure designed

to assess DSM-IV personality disorder traits. Previous forms of the PDQ (e.g., PDQ-R, Hyler & Reider, 1987), as well as the PDQ-IV, have been used widely in personality disorder research (Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990). Although both the PDQ-R and PDQ-IV produce numerous false-positives (Fossati et al., 1998), as gauged against structured interview measures of personality disorders, they correlate moderately with structured clinical interview dimensional ratings of these disorders (Fossati et al., 1998; Trull & Larson, 1994).

*Psychopathy.* Psychopathic traits were measured using the short form of the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996), a widely used self-report measure developed primarily for nonclinical samples (Benning et al., 2003; Lilienfeld & Fowler, 2006). This 56-item scale asks participants to rate on a 4-point scale how true a statement is when applied to themselves. In contrast to other major measures of psychopathy (e.g., the Psychopathy Checklist-Revised; Hare, 2003), the PPI was designed to exclusively assess the underlying personality dispositions associated with psychopathy. As a consequence, it does not contain items explicitly assessing antisocial or criminal behaviors. In this regard, it is well suited for examining the association between relational aggression and psychopathy, as any correlations between relational aggression and features of PPI-assessed psychopathy (e.g., Factor 2 traits) cannot be readily attributed to largely tautological content overlap across measures (i.e., one set of aggression items correlating with another set of aggression items; see Nichols, Licht, & Pearl, 1982, for a discussion of this broader problem in personality assessment).

Examples of PPI items include: "Frankly, I believe I am more important than most people" and "When I want to, I can usually put fears and worries out of my mind." The PPI consists of eight subscales assessing specific facets of psychopathy: Impulsive Nonconformity, Blame Externalization, Machiavellian Egocentricity, Carefree Nonplanfulness, Fearlessness, Stress Immunity, Social Potency, and Coldheartedness. PPI total scores correlate moderately with self-report, peer-rated, and interviewer-rated measures of psychopathic personality traits in nonclinical (e.g., undergraduate) samples (Lilienfeld & Fowler, 2006).

Factor analyses suggest that the PPI is underpinned by two largely uncorrelated dimensions (Benning, Patrick, Salekin, & Leistico, 2005). Following Benning et al. (2003), Factor 1 scores were calculated by summing the z-transformed scores of the Fearlessness, Stress Immunity, and Social Potency subscales. Factor 2 scores were calculated by summing the z-transformed scores of the Impulsive Nonconformity, Blame Externalization, Machiavellian Egocentricity, and Carefree Nonplanfulness subscales. The Coldheartedness subscale does not load highly on either factor and is excluded from these computations (Benning et al., 2003). In support of previous findings (e.g., Benning et al., 2005), the correlation between the two factors was nonsignificant ( $r = 0.11$ ,  $p = ns$ ) in the present sample.

*Social Desirability.* Finally, we administered the Marlowe-Crowne Social

Desirability Scale (MCSDS; Crowne & Marlowe, 1960), to control for social desirability. This commonly used scale consists of 33 True/False items. Items are either socially desirable but infrequent (e.g., "Before voting I thoroughly investigate the qualifications of all candidates") or socially undesirable but common (e.g., "I like to gossip at times"). Cronbach's alpha for the MCSDS in this sample was .69.

### DATA ANALYSIS

We first computed bivariate correlations between the PDQ-IV and the SCATI personality disorder scales to ensure that the corresponding scales on these two measures correlated moderately to highly. The convergent validity correlations between the two sets of personality disorder scales were all statistically significant, and ranged from  $r = .48$  for dependent personality disorder to  $r = .64$  for antisocial personality disorder. Therefore, to reduce the risk of Type I error given the number of correlational and multiple regression analyses (see below), we formed personality disorder composite scores by summing standardized ( $z$ ) scores on the PDQ-IV and the SCATI. These composite scores were used in all subsequent analyses.

The two relational aggression measures were moderately correlated ( $r = 0.48$ ,  $p < .001$ ). Again, to decrease the chances of Type I error, we computed relational aggression composite scores by summing standardized ( $z$ ) scores on the RAS and the SRASB. These composite scores were used in all subsequent analyses. Nevertheless, subsidiary analyses not reported here indicated that the pattern of correlations between relational aggression, on the one hand, and the DSM-IV and psychopathy trait measures, on the other, were comparable across both relational aggression measures ( $r_{\text{alerting-cv}} = .63$ ; Westen & Rosenthal, 2003).

### RESULTS

Table 1 presents the descriptive statistics for relational aggression, physical aggression, DSM-IV personality disorder features, and psychopathic traits for the overall sample. Males'  $z$ -transformed relational aggression composite scores ( $M = .58$ ,  $SD = 1.69$ ) were significantly higher ( $t = 3.416$ ,  $p = .001$ , Cohen's  $d = .50$ ) than females ( $M = -.26$ ,  $SD = 1.68$ ). In addition, males' ( $M = 78.72$ ,  $SD = 17.87$ ) AQ total aggression scores were significantly higher ( $t = 4.24$ ,  $p < .001$ , Cohen's  $d = .60$ ) than females' ( $M = 67.92$ ,  $SD = 16.58$ ). Males' PPI scores ( $M = 127.54$ ,  $SD = 13.58$ ) were significantly higher ( $t = 6.5$ ,  $p < .001$ , Cohen's  $d = .90$ ) than females' PPI scores ( $M = 115.24$ ,  $SD = 12.71$ ). Taken together, these findings indicate a large effect size between genders on AQ and PPI scores, and a moderate effect size between genders on relational aggression scores.

### RELATIONAL AGGRESSION AND DSM-IV PERSONALITY DISORDER TRAITS

Because controlling statistically for social desirability (MCSDS) scores did not substantially affect the overall pattern of findings, we report correla-

**TABLE 1. Mean Scores and Standard Deviations on the Aggression and Personality Disorder Measures**

Measure	Mean	SD
AQ	71.28	17.67
PPI	119.05	14.15
SRASB	35.78	11.06
RAS	37.43	9.99
SCATI Antisocial PD	8.95	2.72
PDQ Antisocial PD	9.32	1.46
PDQ Borderline PD	10.50	1.55
SCATI Borderline PD	9.67	2.64
SCATI Histrionic PD	12.14	2.37
PDQ Histrionic PD	9.47	1.66
SCATI Narcissistic PD	12.50	2.60
PDQ Narcissistic PD	9.33	1.46
SCATI Passive Aggressive PD	10.28	2.57
SCATI Sadistic PD	6.81	1.80

*Note:* The *n* for each measure ranged from 201–220.

tional findings uncontrolled for MCSDS in the remainder of the manuscript. We first conducted bivariate correlation analyses investigating the relationship between relational aggression and Cluster B DSM-IV personality disorder traits. Sadistic and passive-aggressive personality disorder traits were also analyzed. In addition to analyzing individual Cluster B disorder traits, we calculated composite scores for each DSM-IV personality cluster by summing the standardized (*z*) scores of the individual personality disorder traits within each cluster. Results indicated that composite measures of all three clusters correlated significantly with relational aggression (see Table 2). Nevertheless, only Cluster B traits correlated significantly with relational aggression after controlling for overt aggression.

To test whether relational aggression was more strongly correlated with Cluster B traits than either Cluster A or C traits, we conducted a significance test of the difference between the two dependent correlations. Re-

**TABLE 2. Correlations Between Relational Aggression and DSM-IV Personality Disorders and Partial Correlations Controlling for Overt Aggression**

DSM-IV Personality Disorder	Correlation	Partial Correlation
Antisocial Personality Disorder	0.53**	0.34**
Borderline Personality Disorder	0.38**	0.16*
Histrionic Personality Disorder	0.36**	0.19*
Narcissistic Personality Disorder	0.39**	0.21**
Passive-aggressive Personality Disorder	0.48**	0.21**
Sadistic Personality Disorder	0.59**	0.44**
Cluster A Personality Disorders	0.33**	0.08
Cluster B Personality Disorders	0.53**	0.33**
Cluster C Personality Disorders	0.29**	0.04

*Note.* The *n* for each correlation ranged from 201–220. Cases were excluded pairwise in the analyses, and a two-tailed test of significance was employed.

\**p* < .05 \*\**p* < .01.

sults indicated that Cluster B disorder traits were more strongly correlated with relational aggression than Cluster A disorder traits ( $t = 3.16$ ,  $p < .001$ ). Results also indicated that Cluster B disorder traits were more strongly correlated with relational aggression than Cluster C disorder traits ( $t = 3.73$ ,  $p < .001$ ).

Like relational aggression, overt aggression correlated significantly with traits of all DSM-IV personality disorders (Table 3). A significance test of the difference between two dependent correlations found that Cluster A ( $t = 3.20$ ,  $p < .001$ ) and Cluster C ( $t = 3.68$ ,  $p < .001$ ) traits were more strongly correlated with overt than relational aggression, whereas Cluster B traits ( $t = 1.23$ ,  $p = ns$ ) were not. In contrast to relational aggression, there were no significant differences between Cluster A, B, or C's magnitude of correlation with overt aggression ( $t = 1.38$ ,  $p = ns$ ).

More fine-grained analyses investigated the relationships among overt verbal aggression, physical aggression, and DSM-IV personality disorder features. Results indicated that Cluster A ( $r = .135$ ,  $p = .048$ ) and Cluster B ( $r = .319$ ,  $p < .001$ ) traits significantly correlated with verbal aggression, whereas Cluster C ( $r = .110$ ,  $p = ns$ ) traits did not. Physical aggression significantly correlated with Cluster A ( $r = .311$ ,  $p < .001$ ), Cluster B ( $r = .412$ ,  $p < .001$ ), and Cluster C traits ( $r = .156$ ,  $p = .02$ ).

### RELATIONAL AGGRESSION AND PSYCHOPATHIC TRAITS

We next investigated the relationship between relational and overt aggression and psychopathy using bivariate correlation analyses. Total psychopathy scores, as assessed by the PPI, were significantly correlated with relational aggression ( $r = .31$ ,  $p < .001$ ) and overt aggression ( $r = .33$ ,  $p < .001$ ). Partial correlation analyses revealed that PPI scores were significantly correlated with relational aggression even after controlling for overt aggression ( $r = .17$ ,  $p = 0.01$ ). Conversely, partial correlation analyses also revealed that PPI scores were significantly correlated with overt aggression

**TABLE 3. Correlations Between Overt Aggression and DSM-IV Personality Disorders and Partial Correlations Controlling for Relational Aggression**

DSM-IV Personality Disorder	Correlation	Partial Correlation
Antisocial Personality Disorder	0.58**	0.39**
Borderline Personality Disorder	0.47**	0.34**
Histrionic Personality Disorder	0.37**	0.26**
Narcissistic Personality Disorder	0.40**	0.23**
Passive-aggressive Personality Disorder	0.65**	0.55**
Sadistic Personality Disorder	0.59**	0.35**
Cluster A Personality Disorders	0.51**	0.41**
Cluster B Personality Disorders	0.58**	0.44**
Cluster C Personality Disorders	0.46**	0.39**

*Note.* The  $n$  for each correlation ranged from 201–220. Cases were excluded pairwise in the analyses, and a two-tailed test of significance was employed.

\*\* $p < .01$ .

after controlling for relational aggression ( $r = .20, p < .01$ ). A test of the significance of the difference between dependent correlations revealed that the correlation between psychopathic personality traits and relational aggression was not significantly different than the correlation between psychopathic personality traits and overt aggression ( $t = 0.18, p = ns$ ).

We also investigated the relationship between relational and physical aggression and the two dimensions of psychopathy. PPI Factor 1 scores correlated nonsignificantly with relational aggression ( $r = -0.04, p = ns$ ) and overt aggression ( $r = -0.07, p = ns$ ). In contrast, PPI Factor 2 scores correlated significantly with relational aggression ( $r = 0.53, p < .001$ ) and overt aggression ( $r = 0.59, p < .001$ ). Partial correlation analyses revealed that PPI Factor 2 scores correlated significantly with relational aggression ( $r = 0.31, p < .001$ ) even after controlling for overt aggression. A test of the significance of the difference between dependent correlations revealed that PPI Factor 2 scores were more strongly correlated with relational aggression than PPI Factor 1 scores ( $t = 3.85, p < .001$ ). PPI Factor 2 scores also correlated more strongly with overt aggression than PPI Factor 1 scores ( $t = 4.33, p < .001$ ).

Further analyses investigated the relationships among overt verbal aggression, physical aggression, and PPI total and factor scores. Verbal aggression significantly correlated with PPI total scores ( $r = .376, p < .001$ ) and PPI Factor 2 ( $r = .447, p < .001$ ), but not with PPI Factor 1 ( $r = .098, p = ns$ ). PPI total scores ( $r = .404, p < .001$ ), PPI Factor 1 ( $r = .280, p < .01$ ), and PPI Factor 2 ( $r = .443, p < .001$ ) all significantly correlated with physical aggression.

### **GENDER MODERATION**

We next conducted multiple moderated regression analyses to test whether gender moderated the relationships between physical or relational aggression and personality pathology. For relational aggression, we conducted a moderated multiple regression by entering personality variables as the dependent measure, entering gender and relational aggression composite scores in Step 1, and entering the product of gender by relational aggression (with the partialled product representing the interaction term) in Step 2. We conducted analyses investigating overt aggression in a similar manner entering only AQ scores and gender in Step 1 and a gender by AQ score product term in Step 2 of the analysis.

Moderated multiple regression analyses indicated that gender did not moderate the relationship between traits of any DSM-IV personality disorder and relational aggression with the exception of sadistic personality disorder (SPD)  $F(1, 213) = 5.66, \beta = .480, R^2 \text{ change} = .02, p = .02$ . This analysis indicated that SPD was more strongly correlated with relational aggression in males than females. Similarly, moderated multiple regression analyses suggested that gender did not moderate the relationship between traits of any DSM-IV personality disorder and overt aggression with

the exception of SPD,  $F(1, 215) = 5.04$ ,  $\beta = .457$ ,  $R^2 \text{ change} = .02$ ,  $p = .03$ . Paralleling the previous analysis, SPD was more strongly correlated with overt aggression in males than females. Results indicated that gender did not moderate the relationship between relational aggression and psychopathic traits,  $F(1, 215) = 2.107$ ,  $\beta = .372$ ,  $R^2 \text{ change} = .01$ ,  $p = ns$ , or between overt aggression and psychopathic traits  $F(1, 213) = 2.61$ ,  $\beta = .327$ ,  $R^2 \text{ change} = .01$ ,  $p = ns$ .

## DISCUSSION

The present study examined the personality disorder correlates of relational aggression in an adult nonclinical sample. We found that, contrary to most findings in children, males scored significantly higher on composite scores of relational aggression than females. The reasons for this discrepancy from the childhood literature (Crick & Grotpeter, 1995) require further investigation, as it is unclear whether it represents a measurement effect, a developmental effect, or both. With respect to potential developmental effects, longitudinal studies suggest that overt childhood conduct symptoms tend to become increasingly covert in adolescence (Loeber, 1982, 1990). This change may reflect the increasing inhibitory control over overt aggression that develops with age. Whether this longitudinal change could account for a decreasing sex difference in relational aggression from childhood to adolescence and early adulthood is unknown.

As hypothesized, relational aggression correlated more strongly with Cluster B personality disorder traits than those of Cluster A or C, even after controlling for overt aggression. Moreover, relational aggression correlated significantly with traits of each Cluster B personality disorder. In sharp contrast, overt aggression correlated similarly with relational aggression across all three personality disorder clusters. These findings suggest that relational aggression differs from overt aggression in its preferential association with Cluster B traits, perhaps reflecting the manipulative and interpersonally damaging behaviors common to Cluster B disorders. Our results therefore demonstrate that relational aggression is not only separable from overt aggression but different from overt aggression in its relations to personality disorder pathology. Moreover, our findings suggest that relational aggression is not merely a milder form of aggression than overt aggression, because these two types of aggression differ sharply in their personality disorder correlates.

Relational aggression correlated significantly with psychopathic traits and more specifically with Factor 2. This finding is noteworthy given that PPI Factor 2 contains no explicit aggression items. In contrast, relational aggression correlated nonsignificantly with the affective/interpersonal psychopathy factor, Factor 1. This finding is perhaps surprising given that at least some of PPI Factor 1, in particular the Social Potency subscale, is substantially interpersonal in content. The correlation between relational aggression and Factor 2 remained significant even after controlling for

overt aggression, again suggesting that relational aggression possesses unique variance not shared with overt aggression.

Contrary to our hypotheses, we did not find much support for the hypothesis that gender moderates the personality disorder correlates of relational aggression. The lone exception was sadistic personality disorder, the traits of which were more highly correlated with both relational and overt aggression in males than females. Nevertheless, because of the large number (36) of gender moderation analyses conducted, these isolated positive findings may be attributable to Type I error. Replication of these findings in an independent sample is warranted.

Our findings suggest that clinicians may need to recognize both male and female psychopathic individuals' potential for relational aggression. Specifically, psychopathic individuals who appear to be "nonaggressive" or "nonviolent" may nevertheless engage in aggression, albeit indirectly in the form of manipulating others to achieve desired ends. Nevertheless, these implications should be viewed cautiously pending replication in clinical samples.

Our findings should be considered in light of certain limitations. First, our results relied solely on self-report measures. This exclusive reliance on questionnaires may have resulted in method covariance, thereby inflating the magnitude of our correlations. However, relational aggression correlated preferentially with Cluster B personality disorder traits over and above those of Clusters A and C. Thus, method covariance is unlikely to be the sole explanation for our findings. Nevertheless, investigators should seek to replicate our findings using clinical interviews, such as the Structured Clinical Interview for DSM-IV Axis II for assessing DSM-IV personality disorders and the Psychopathy Checklist—Revised (Hare, 2003) for assessing psychopathy.

Second, because our use of an undergraduate sample limits the generalizability of our findings to more severely affected samples, investigators should attempt to replicate our findings in psychiatric and prison samples, which presumably are characterized by higher levels of aggression, Cluster B personality traits, and psychopathic traits. Nevertheless, undergraduate samples have the advantage of markedly lower rates of cooccurring Axis I disorders, especially mood and anxiety disorders, compared with most clinical samples (Lilienfeld & Andrews, 1996). These lower levels of "comorbidity" (but see Lilienfeld, Waldman, & Israel, 1994) render both the interpretation of correlational findings less ambiguous and the results of personality disorder assessments less subject to "state-trait artifacts," viz., errors resulting from the effects of short-term affective states on the measurement of long-term traits (Loranger et al., 1991).

Future research should investigate the psychopathological implications of relational aggression more broadly using such tools as psychophysiological measures, laboratory tasks, behavioral observations, and sociometric ratings by peers. The use of a wide array of convergent assessment methods is necessary to better understand the nomological network surround-

ing the construct of relational aggression. Finally, research should extend the study of relational aggression to longitudinal designs investigating the course, correlates, and manifestations of relational aggression from childhood through adulthood.

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