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Relational Aggression and Psychopathy Among Male and Female Inmates

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Abstract
The construct of psychopathy has long been applied to individuals who callously and remorselessly use others or execute severe antisocial behaviors to get what they want. Although there has been a plethora of empirical literature that has shed light on this type of individual, most of what is known applies more to male than female populations. However, more research is emerging showing that females may express psychopathic features differently than males. A body of research has also shown that females engage in a qualitatively different type of aggression that focuses on deliberately deconstructing a person's social relationships, namely relational aggression. The current study examined the relationship between psychopathy and relational aggression in 235 inmates to help build on explanations of the differential expression of psychopathy. Results indicated that relational aggression had a significant positive relationship with PCL-R Factor 1 (e.g., affective/interpersonal characteristics) of psychopathy before controlling for age for female, but not male inmates. However, all other findings were non-significant, and the significant relationship between Factor 1 and relational aggression disappeared after controlling for age. In sum, relational aggression may be an important construct in explaining the differences in the manifestation of psychopathy between male and female inmates. Strengths, limitations, and directions for future research are discussed.

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RELATIONAL AGGRESSION AND PSYCHOPATHY AMONG MALE AND FEMALE INMATES

A THESIS

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

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HILLSBORO, OREGON

BY

ZACHARY JONATHAN ISOMA

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ABSTRACT

The construct of psychopathy has long been applied to individuals who callously and remorselessly use others or execute severe antisocial behaviors to get what they want. Although there has been a plethora of empirical literature that has shed light on this type of individual, most of what is known applies more to male than female populations. However, more research is emerging showing that females may express psychopathic features differently than males. A body of research has also shown that females engage in a qualitatively different type of aggression that focuses on deliberately deconstructing a person’s social relationships, namely relational aggression. The current study examined the relationship between psychopathy and relational aggression in 235 inmates to help build on explanations of the differential expression of psychopathy. Results indicated that relational aggression had a significant positive relationship with PCL-R Factor 1 (e.g., affective/interpersonal characteristics) of psychopathy before controlling for age for female, but not male inmates. However, all other findings were non-significant, and the significant relationship between Factor 1 and relational aggression disappeared after controlling for age. In sum, relational aggression may be an important construct in explaining the differences in the manifestation of psychopathy between male and female inmates. Strengths, limitations, and directions for future research are discussed.

Key Words: Psychopathy, Relational Aggression, Sex Differences
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Relational Aggression and Psychopathy Among Male and Female Inmates

The concept of psychopathy has long been applied to adults who display a particularly devastating form of antisocial behavior, including severe aggression and violence, misconduct, and violating social norms. A modern conceptualization of psychopathy and its unique correlates were first reviewed in *The Mask of Sanity* (Cleckley, 1941). In this exhaustive review, Cleckley established 16 characteristics that constitute a subtype of individuals displaying a particularly severe form of antisocial behavior, including “superficial charm and good intelligence, absence of ‘nervousness’, lack of remorse, inadequately motivated by antisocial behavior, and poverty in major affective experience” (p. 338). Since this description, debate about the unreliability of an affective dimension of psychopathy (Robin, 1978) precluded its inclusion in the third and fourth revisions of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980; DSM-III-R; American Psychiatric Association, 1987). However, more recent research consistently shows that there exist separate and unique correlates that designate a subgroup of antisocial, violent, and callous individuals.

For example, Hare, Hart, and Harpur (1991) found two distinct dimensions in individuals with severe aggressive and maladaptive features. The first factor consisted of interpersonal and emotional deficits that they labeled a *deficient affective experience* (lack of guilt and remorse, callousness, and failure to take responsibility for actions). The second factor, known as *social deviance*, included antisocial behavior (juvenile delinquency, criminal activity, and early behavior problems) and a maladaptive lifestyle (impulsivity, sensation seeking, and lack of long-term goals). Subsequently, Hare (1991) created the Psychopathy Checklist: Revised (PCL-R). Since its inception, the PCL-R has been reviewed by hundreds of studies, all supporting its reliability and validity in predicting violence, reoffending, and recidivism among high scorers.
(Ogloff, 2006), further establishing psychopathy as an important construct. However, one limitation that is frequently noted in psychopathy research is the inconsistency with which researchers have been able to establish this construct in female subjects. Some have suggested that this is, in part, due to the evidence that psychopathy, and more broadly, aggression are more prevalent among males compared to females (Verona & Vitale, 2006).

Researchers have attempted to account for this sex difference in several different ways. For example, a body of research has recently emerged showing a non-physical form of aggression, which is unaccounted for by current assessments of psychopathy. Specifically, some researchers have found that females engage in a social form of aggression just as often, if not more than males (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989; Crick and Grotz, 1995; Gale & Underwood, 1997), and that this type of aggression is related to, but distinct from, physical aggression.

However, researchers have not come to a consensus on one definition that incorporates the different aspects of this non-physical, social aggression. The three terms that have been consistently used in the literature are social aggression, indirect aggression, and relational aggression (see Heilbron & Prinstein, 2008 for a review). The potential differences between these terms are empirical in nature and have yet to be firmly established (Archer & Coyne, 2005; Heilbron & Prinstein, 2008). That is, the overlap between these concepts is substantial enough that many authors refer to them interchangeably. The current research project utilizes relational aggression because of its frequent use in empirical investigations similar to the current project. Crick and Grotz (1995) define relational aggression as “harming others through purposeful manipulation and damage of their peer relationships” (p. 711), which includes spreading rumors about others, alienating peers, and intentionally excluding peers from social activities.
Current research on relational aggression has shown that relational aggression is at least as prevalent among females compared to males in children and young adolescents (Crick, 1995; Crick & Grotpeter, 1995), and this has resulted in more statistical equality between the prevalence rates of aggression in males compared to females. Similar to work examining overt aggression, researchers have also demonstrated that females who engage in relational aggression have more internal and externalizing problems than non-aggressive individuals; have maladaptive relationships with others; and are more likely to have poor psychosocial adjustment in the future compared to both males who engage in relational aggression and non-aggressive peers (Crick, 1997; Werner & Crick, 1999). However, research on relational aggression is still in its infancy, and has primarily been studied in children, raising the question about its validity with adolescent and adult samples. Although more research is finding affirmative results in adult samples (e.g., Werner & Crick, 1999), very few peer-reviewed studies have examined relational aggression in adult or inmate populations. Nevertheless, these studies provide preliminary evidence of sex differences in the expression of aggression, which may relate to the sex difference in the prevalence rates of psychopathy. Further research on the differential expression of psychopathy in females compared to males may lead to more accurate assessment, and treatment plans designed for these differences. Thus, this study seeks to examine the relationships among psychopathy and relational aggression among adult male and female inmates.
Literature Review

Gender Differences in Psychopathy

Despite a lengthy history of using male samples for studying psychopathy, Cleckley (1944) included female participants in his review of the disorder, and found many similarities to his male participants. However, Cleckley’s observations of the female participants also revealed some important differences. For example, Vernoa and Vitale (2006) noted that the female participants in Cleckley’s sample manifested their psychopathic tendencies within their familial and social relationships, whereas males were more likely to engage in antisocial and aggressive behaviors in more public settings (e.g., bars, casinos, businesses, and military). Since this report, a handful of researchers have studied psychopathy in females. However, empirical literature is beginning to emerge, and has shed light on important differences in the assessment, prevalence rates, and phenotypic expression of psychopathy between sexes (Cale & Lilienfeld, 2002).

For example, reported prevalence rates of psychopathy between male and females are significantly different, although these reports are somewhat inconsistent. In their review of several studies of psychopathy in female inmates, Warren et al. (2003) found prevalence rates ranging from 9% to 31%; a range that includes rates both similar to, and different from those reported in research with male samples. Using the traditional cut-off score of 30 established by Hare (1991), several researchers have found psychopathy to be far less prevalent in females compared to males. For example, Salekin et al. (1997) found that 16% of their female sample scored above 30, whereas prevalence rates for males in a similar setting reached 30% (Hare, 1991). Neary (1990) found an 11% prevalence rate in a sample of 120 female inmates, and Warren et al. found 17.3% of 138 incarcerated females of a maximum-security facility met cut-off criteria. Thus, the rates of psychopathy in females within a maximum-security facility were
still lower than those reported for males within a medium- or minimum-security prison facility. These reports are consistent with the most recent literature review on psychopathy in females, which report the bulk of research to show psychopathy as being more prevalent in males compared to females across different forensic and community settings (Dolan & Vollm, 2009). However, some researchers have found comparable rates of psychopathy across sex (Hamburger, Lilienfeld, & Hogben, 1996; Louth, Hare, & Linden, 1998; Strachan, 1993).

Dolan and Vollm (2009) also note that, in general, males tended to score higher on several measures of psychopathy compared to females across different settings. These and other authors have suggested that problems found with the factor structure of the PCL-R in female samples, including item applicability, may contribute to the differences found in average total scores, and prevalence rates (e.g., Forouzan & Cooke, 2005; Verona & Vitale, 2006). As a result, some authors have suggested reducing the cut-off score for females in order to increase the prevalence rates for this population (Salekin, Rogers, Ustad, & Sewell, 1998). Researchers that have chosen to set the cut-off score to 25 instead of the suggested 30 have found mixed results, with some studies showing prevalence rates similar to that found with males, and others still showing lower rates (Forouzan & Cooke, 2005). This has lead to questions regarding the reliability and validity of lowering cut-off scores for females with psychopathic traits (Dolan & Vollm, 2009; Forouzan & Cooke, 2005; Verona & Vitale, 2006). Furthermore, it is unclear why some researchers are lowering the cutoff score to make the prevalence rates more sex-equivalent for psychopathy, whereas these cut-off reduction methods are not used with other mental disorders that show a high sex ratio (e.g., Major Depressive Disorder).

In sum, findings regarding the prevalence rate and total scores of psychopathy in females compared to males indicate that males are more likely to score higher on measures of
psychopathy. However, these findings are limited by potential problems with how well current assessment methods can correctly identify psychopathy in females. Furthermore, the paucity of available studies that have found equivalent rates of psychopathy across sex preclude definitive statements to be made about differences in the rate of psychopathy in males and females. Thus, further investigation as to the differences in the expression of psychopathy across sex is warranted.

Some authors have examined how different factor structures of the PCL-R function with female samples. For example, Cooke and Michie (2001) applied confirmatory factor analysis (CFA) to Hare’s (1991) two-factor model of psychopathy in several samples across the United States and Canada (N = 2067). Using different goodness-of-fit analyses, the researchers found the two-factor model provided poor fit to the data. Based on these findings, Cooke and Michie applied exploratory factor analysis (EFA) and item response theory (IRT) to develop a three-factor model of psychopathy. The first factor, termed *Arrogant and Deceitful Personality Style*, included glibness, grandiose sense of self-worth, conning and manipulative, and pathological lying. The second factor was composed of shallow affect, callousness, lack of remorse, and failure to accept responsibility for his or her actions, and was termed *Deficient Affective Experience*. The third, and final factor included a need for stimulation, impulsivity, irresponsibility, parasitic lifestyle, and lack of long-term realistic goals; and was termed *Impulsive and Irresponsible Behavioral Style*. This three-factor model proved to be a better fit than the two-factor model in their sample. In addition, some research has shown the three-factor model to be a better fit for females with psychopathy. For instance, Warren et al. (2003) found the three-factor model to be a slightly better fit than the two-factor model in their sample of 138 female inmates. Jackson, Rogers, Neumann, and Lambert (2002) replicated these findings in
their sample of 119 female inmates. Their findings suggested the three-factor model to be a better fit than either Hare’s (1991) or Salekin et al.’s (1997) two-factor models. These findings have been replicated in other studies with female inmates (e.g., Strand & Belfrage, 2005).

However, Forouzan and Cooke (2005) qualified these findings by stating that the differences between the two- and three-factor models are moderate, and do not provide enough evidence to support the utility of the three-factor significantly more than that of the two-factor model. Nevertheless, after reviewing several studies on the factor structure of the PCL-R with female samples, these authors concluded, “if our understanding of psychopathy in females is to be enhanced it is necessary to consider empirically that the constellation of features that defines psychopathy in males differs from that defining psychopathy in females”, and researchers should be cautious in using current measures of psychopathy with female samples (p. 772).

In summary, although several authors have posited that the PCL-R is a reliable and valid measure of psychopathy in females (Cale & Lilienfeld, 2002; Dolan & Volm, 2009), research findings are equivocal in supporting this assertion. Furthermore, the inconsistency with which researchers agree on the utility of the PCL-R with female samples, and the paucity of replication studies highlight the need for further empirical investigation as to the differences in assessing psychopathy in males compared to females (Forouzan & Cooke, 2005; Verona & Vitale, 2006). These studies also warrant further research into the differences in antisocial and aggressive behaviors in females who score high on measures of psychopathy. Nicholls, Ogloff, Brink, and Spidel (2005) conducted a comprehensive literature review of psychopathy in females, including several studies from community, prison, and forensic hospital settings. These authors concluded that, although research is beginning to consistently show the PCL-R to be a reliable and valid predictor of violence and re-offending among women, further investigation is necessary, and
may reveal that “some refinement of the psychopathy construct for women may be useful”, and “Doubtless, some sex differences will emerge that will have implications for the assessment and treatment of women with psychopathic traits,” (pp. 797-798).

Psychopathy and Related Personality Disorders

In contrast to the aforementioned research on prevalence rates and assessment of psychopathy in females, more consistency has been found for differences in the aggressive behaviors in males compared to females. Research on aggression, crime, violence, and externalizing disorders commonly associated with these behaviors (e.g., ASPD and Conduct Disorder) have consistently shown them to be more prevalent in males than females (Burnette & Newman, 2005). Research that has found these behaviors and disorders in females, have noted significant differences in the way in which they are manifested. For example, Mulder, Wells, and Bushnell (1994) found that females diagnosed with ASPD had more relationship problems, more emotional lability, and lied more often compared to males with the disorder. In contrast, males with ASPD were more likely to display unlawful behavior. These findings are consistent with other research showing ASPD and psychopathy to be differentially expressed in males compared to females. For example, Salekin, Rogers, and Machin (2001) examined sex differences in the construct of psychopathy via prototype analysis, whereby 511 clinical child psychologists rated 243 male and 268 female adolescents on the most representative attributes of psychopathy based on the most up-to-date empirical literature and assessments of the construct. Results indicated that more items measuring psychopathy were prototypical of males compared to females (23 versus 14, respectively), and two items were prototypical of females that were not found for males (“Often stays out at night despite parental prohibitions” and “Sexual promiscuity”). These researchers also found that overall, females had fewer physically aggressive acts than males as
defined by the criteria of several behavioral disorders in all revisions of the DSM, the ICD-10, and other well-validated assessment measures. Given this latter result, the authors concluded that the lowered prevalence rates of psychopathy for females might be the result of inadequate criteria for antisocial behavior in females. That is, although the criteria for the affective component of psychopathy occurs as frequently in females as it does in males, the violent and overtly aggressive behaviors that make up the second component of this construct may be far more representative of males with the disorder compared to females (Salekin et al., 2001).

Strand and Belfrage (2005) found similar results with their sample of 149 female forensic patients. Based on the results of their study, these authors concluded the following:

An item by item analysis suggested that the current definition of antisocial behavior in the PCL instruments might be less useful for females compared with males, which would be consistent with a growing body of data showing that girls generally display an antisocial lifestyle through ‘relational aggression’ combined with a more parasitic lifestyle, rather than the type of criminal lifestyle that is common among antisocial boys (p. 848).

Although the authors recognize the need for further investigation to replicate their findings, the early accumulation of evidence on the factors of psychopathy in males and females show a need to accommodate antisocial and aggressive behaviors that are typical of females in addition to those that are applicable to males (Forouzan & Cooke, 2005).

These findings are consistent with the Mulder et al. (1994) findings, which suggest that sex differences in the expression of psychopathy may result in the mislabeling of the disorder in females. In fact, females are more likely than males to be diagnosed with Borderline and Histrionic Personality Disorders (BPD and HPD, respectively; APA, 2000), even when their
symptoms are similar or identical to those of males with ASPD (Belitsky, et al., 1996; Ford & Witiger, 1989; Strand & Belfrage, 2005). This is consistent with research showing BPD and HPD to be associated with psychopathy differently in females and males (Forouzan & Cooke, 2005). For example, research on the association between the PCL-R and measures of HPD found that HPD was associated with Factor 2 and Total scores of the PCL-R for females, but not males (Cale & Lilienfeld, 2002; Warren et al., 2003); and Factor 1 and Total scores for males, but not females (Hart & Hare, 1989). Researchers have also found associations between Somatization Disorder (SD) and psychopathy in females, but not males (Lilienfeld & Hess, 2001). These authors examined the relationship between psychopathy and SD in a sample of 150 undergraduate females, and found strong associations between SD and psychopathy. Their findings suggest that SD may be a female-specific behavioral manifestation of psychopathy, whereas ASPD is the same for males. This implication is limited, however, by its exclusion of male participants as a comparison sample. Nevertheless, ASPD has been shown to occur more frequently in males, and SD to occur more often in females (APA, 2000), providing some support for the researchers hypothesis. Other researchers have found that some personality features are associated with psychopathy in males, but not females, and vice versa. For example, sadistic personality features have been reportedly associated with psychopathy in males (Rutherford, Alterman, & Cacciola, 1997), whereas this was not found for females. Likewise, passive-aggressive personality features have been associated with psychopathy in females, but not males (Weizmann-Henelius, Viemero, & Eronen, 2004). These authors posited that this latter association might have occurred because females are more indirect in their aggressive behaviors compared to males. Thus, accumulating research indicates that females with psychopathy have different phenotypic manifestations than males with the disorder.
Overall, empirical literature on sex differences in psychopathy has yielded inconsistent results. However, there seems to exist a trend, in which psychopathy manifests differently in females than in males. This is especially true when research has examined the behavioral components of psychopathy across sex. In fact, several researchers have indicated the need for various psychopathy measures to specifically reflect the differential expression of antisocial behaviors in females compared to males (Forouzan and Cooke, 2005; Hare, 1991; Strand & Belfrage, 2005; Verona & Vitale, 2006). Furthermore, some authors have referenced prior studies showing how females express aggression through more indirect or relational behaviors (Strand & Belfrage, 2005; Weizmann-Henelius et al., 2004).

**Relational Aggression**

An accumulating body of empirical literature is finding that females engage in relational aggression at least as often as males, and that the prevalence rate of aggressive behaviors between males and females reaches equality when considering these sex differences (Bowie, 2007). For example, Crick & Grotpeter (1995) examined sex differences in type of aggression in 491 third- through sixth-grade children (256 boys, 235 girls). Findings indicated that overt and relational aggression was moderately correlated, boys were significantly more overtly aggressive than girls, and girls were significantly more relationally aggressive. These results also indicated that rates of aggression were similar for boys and girls (27% and 21.7%, respectively) when accounting for relational and physical types. Crick and Bigbee (1998) also found that girls were significantly more likely to be both perpetrators and victims of relational aggression compared to boys in their sample of 383 fourth- and fifth-grade children. Bonica, Arnold, Fisher, Zeljo, and Yershova (2003) studied sex differences in aggression among 145 ethnically and economically diverse pre-school children. Their findings were consistent with the above studies, and suggest
that pre-school girls engage in relational aggression significantly more than boys, whereas boys engage in physical aggression significantly more than girls. Crick et al. (2006) and Ostrov and Keating (2004) have replicated the findings found in the above studies, providing further support for the existence of sex-specific types of aggression. Additional findings from this line of research have shown that female perpetrators of relational aggression are more likely to develop psychosocial maladjustment, including externalizing behaviors compared to males who engage in this type of aggression (Crick, 1997; Prinstein, Boergers, & Vernberg, 2001). Furthermore, findings from these two studies indicated that children who engage in relational and physical types of aggression had the worst psychosocial adjustment, such that they more likely to meet criteria for Conduct Disorder and Oppositional Defiant Disorder.

Taken together, research on relational aggression has provided several important pieces of evidence regarding aggression in females: (a) females engage in aggressive behaviors as often as males, but are more likely to engage in relationally aggressive behaviors, whereas males are more likely to engage in physical aggression; (b) females are more likely than males to develop psychosocial maladjustment as a result of engaging in relational aggression; and (c) when both forms of aggression are accounted for, males and females engage in aggressive behaviors at similar rates. However, there are several limitations that exist in this body of literature. There is a paucity of empirical research examining relationally aggressive behaviors in adult samples. Those studies that have examined this construct with adults are inconsistent, but have generally found opposite or negligible differences between sexes in the engagement of relational aggression compared to findings with children and adolescents (Schmeelk, Sylvers, & Lilienfeld, 2008; Storch, Bagner, Geffken, & Baumeister, 2004). For example, Storch et al. (2004) examined the associations between relational and overt aggression and psychosocial adjustment.
in a college sample of 303 college students with 86 males and 217 females. Results from this study indicated that males used relational aggression significantly more than females. Other researchers have found similar findings using college samples (Loudin, Loukas, & Robinson, 2003; Schmeelk et al., 2008; Storch, Werner, & Storch, 2003). Thus, it is unclear whether relational aggression occurs more in females than males throughout the lifespan. In addition, few studies have examined the relationship between relational aggression and aggressive personality disorders, such as APD or psychopathy. Those studies that have examined these relationships are limited in sample size, generalizability to forensic settings, and adult sampling.

**Relational Aggression and Psychopathy in Children**

However, new research is beginning to bridge these gaps. For example, some researchers have examined the relationship between relational aggression, psychopathy, and constructs related to psychopathy in children and adolescents. Despite criticisms regarding the downward extension of a stigmatizing personality construct, such as psychopathy, to children and adolescents (Lee, Vincent, Hart, & Corrado, 2003), a large body of research is beginning to emerge showing children and adolescents displaying features that are highly related to Hare’s (1991) concept of psychopathy. These features have been labeled Callous-Unemotional (CU) traits, and include affective features such as being unconcerned about the feelings of others, does not feel bad or guilty, unconcerned about school work, and does not show emotions (Frick, O’Brien, Wooton, & McBurnett, 1994; Christian, Frick, Hill, Tyler, & Frazer, 1997). Research on CU traits in children and adolescents have found that they predict higher severity of aggression, self-reported delinquency, more police contacts, later delinquency, and higher scores on measures of psychopathy in adulthood compared to children with Conduct Disorder who do not have these traits (Christian, et al., 1997; Frick, Cornell, Barry, Bodin, & Dane, 2003; Lynam,
Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007; Pardini, Obradovic, & Loeber, 2006). Thus, examining sex differences in relationally and physically aggressive behaviors of children and adolescents with CU traits may contribute to our current knowledge of these behaviors in adults. For instance, Marsee, Silverthorn, and Frick (2005) examined the relationship between CU traits and type of aggression; and whether this relationship was moderated by sex, such that girls should show a stronger relationship between CU traits and relational aggression than would boys. Their sample included 200 non-clinical youth recruited from two urban-based public schools. Consistent with their hypotheses, results indicated a significant relationship between CU traits and both overt and relational aggression, as well as with delinquency. Results also showed a significant relationship between CU traits and relational aggression for girls, but not for boys. Marsee et al. posited that these results imply the necessity of differentiating the expression of psychopathic traits between sexes due to the more relationally aggressive style of females compared to males. The above findings provide important general findings regarding sex differences in the expression of psychopathy. Viding, Simmonds, Petrides, and Frederikson (2009) sampled 704 adolescents in England to test the hypothesis that CU traits would predict higher rates of direct and indirect bullying (parallel to overt and relationally aggressive behaviors, respectively) independent from conduct problems. In addition, the authors hypothesized CU traits would be a better predictor of direct bullying than indirect bullying. Viding et al. also predicted that sex would moderate the relationship between both types of aggression and either conduct problems or CU traits. Results indicated that CU traits alone predicted higher rates of direct but not indirect bullying. However, there was a significant relationship between CU traits and indirect bullying when the latter was combined with conduct problems. In addition, girls were more likely to engage in indirect bullying, whereas boys were
more likely than girls to engage in direct bullying. The authors concluded that, although CU traits were not predictive of indirect bullying, concomitant conduct problems and CU traits might designate an especially severe and diverse type of aggression, especially in girls. This is consistent with research showing that girls who engage in both relational and physical aggression have poorer psychosocial adjustment than girls who engage in either aggressive behavior alone, or girls who do not engage in either type of aggression (Crick, 1997; Prinstein et al., 2001).

Penney and Moretti (2007) administered the Psychopathy Checklist–Youth Version (PCL-YV), and various measures of physical and relational aggression to 142 high-risk adolescents from British Columbia. Results indicated that psychopathy scores predicted higher physical aggression in boys, but not in girls. In contrast, psychopathy predicted higher scores on measures of relational aggression, but this relationship was not significantly different for either sex. That is, males and females engaged in relational aggression at similar rates. The authors concluded that males with psychopathic traits are more likely to be physically and relationally aggressive, whereas females with these traits are more likely to be relationally aggressive than physically aggressive.

**Relational Aggression and Psychopathy in Adults**

Few studies have examined sex differences in the relationship between psychopathy and relational aggression in adult samples. However, those studies that have looked at this relationship have found contradictory or inconsistent results compared that found in child or adolescent samples. For example, Schmeelk et al. (2008) examined the relationship between relational aggression, personality disorders as defined in the *DSM-IV* (APA, 1994), and psychopathy as measured by the PPI in a sample of 220 undergraduate students. Schmeelk et al. also examined sex differences in the frequency of relational aggression and its relationship with
personality disorders and psychopathy. Results indicated that males displayed higher rates of relational aggression than females ($t = 3.416, p < .001$), and that a significant relationship existed between relational aggression and Cluster B personality disorders after controlling for overt aggression ($r = .33, p < .01$). Significant relationships were also found between relational aggression and psychopathy, specifically Factor 2 ($r = .53, p < .001$). No significant relationships were found between relational aggression and other personality clusters. Furthermore, sex did not moderate the relationship between relational aggression and psychopathy ($F [1, 215] = 2.107, \beta = .372, R^2 \text{ change} = .01$). Schmeelk et al. concluded that relational aggression is an important aspect of Cluster B personality disorders and psychopathy in both males and females and that sex differences in the use of relational aggression may disappear throughout development. Nevertheless, this study provides preliminary evidence that relational aggression may be an important construct in the examination of psychopathy in females. Moreover, this study is limited by its use of undergraduate students, in which levels of psychopathy and aggression are generally lower than in forensic settings (Forth et al., 1996; Hare, 1991). In the only other known study on the association of psychopathy and relational aggression in adult females, Ben-Horin (2001) examined the relationship between psychopathy as measured by the PCL-R, institutional misconduct, and relational aggression as measured by a revised version of the Relational Aggression Peer Nomination Scale (Werner & Crick, 1999) in 68 adult female inmates from California in maximum-, medium-, and minimum-security units. Findings revealed relational aggression to be positively and significantly related to psychopathy ($r = .38, p < .01$), and institutional misconduct ($r = .38, p < .05$). These results provide further support that relational aggression may be important in studying the aggressive behaviors in females who score high on measures of psychopathy. However, Ben-Horin did not examine these relationships in males.
Thus it is unclear whether these findings are moderated by sex. Furthermore, this study contained a limited sample size, and needs to be replicated with more participants.

**Summary and Current Study**

This synthesis of literature suggests that females engage in aggressive behaviors almost as often as males when relational aggression is considered. In addition, the limited empirical investigations studying the relationship between relational aggression and psychopathy have found significant results for both sexes. However, current research on this topic is limited by small sample sizes and unrepresentative settings. Thus, this is the first known study that will have looked at sex differences in the relationship between psychopathy and relational aggression in an adult inmate population. Based upon review of the above empirical literature, several hypotheses have been made: (a) females will engage in relational aggression significantly more often than males, (b) there will be a significant relationship between relational aggression and psychopathy after controlling for age, and (c) the relationship between psychopathy and relational aggression will be significantly stronger for females than for males. The first hypothesis is based on a substantial amount of childhood and adolescent literature that show females engage in relational aggression more often than males (Crick et al., 2006; Ostrov & Keating, 2004). The second hypothesis stems from the limited research showing a significant relationship between psychopathy and relational aggression in children (Marsee et al., 2005) and in adults (Schmeelk et al., 2008). Because some of the adulthood literature has shown that age is significantly and negatively related to both psychopathy and relational aggression, the relationship between relational aggression and psychopathy was examined before and after controlling for age. The last hypothesis was surmised based on the theory that engaging in relational aggression is a more harmful type of aggression for females than males, because it
disrupts the social relationships, which is thought to be more valuable for females than for males (Crick & Grootpeter, 1995). Therefore, females who engage in this type of aggression are knowingly “hitting them where it hurts”, whereas males are more likely to engage in more overtly physically threatening behaviors to establish their social dominance.

**Method**

**Participants**

Data were collected from 245 male (N = 93) and female (N = 152) inmates at a state prison facility in the Northwest as part of a larger NIS research project, namely the Personality and Adjustment to Prison Study (PAP; Guyton, in progress). To participate in the study, inmates must have been 18 years old or older, and able to speak and write in English at the fourth grade level or higher. Participants were excluded if they were unable to complete the interview or understand the testing procedures due to psychiatric difficulties. Individuals not fluent in English were excluded due to the lack of comparative norms for Spanish-speaking individuals. Participants who were previously incarcerated at a state or federal prison were also excluded from the study, per PAP procedures. All participants were also required to correctly answer 4 of the 5 multiple-choice questions on the Consent Test at the end of a provided Informed Consent Form.

General demographic characteristics, including average age, average length of sentence, and race/ethnicity percentages were compared to the general prison inmate population from the state in which the sample was taken. As displayed in Table 1, the participants in the current study were comparable to the general inmate population. However, African American and Hispanic inmates were slightly underrepresented. In addition, the average length of sentence for the participants in the current study was largely discrepant from that of the general population.
Demographic characteristics by sex are displayed in Table 2. Males were slightly younger in age compared to females, and had a longer average sentence. It is noteworthy, however, that Length of Sentence data are missing for 61.3% of the males. This may also be important in the interpretation of the length of sentence for the total population, of which 62.3% of the data are missing. In fact, data currently are missing from 58 (62.4%) of males on number of biological children, number of times legally married, and highest grade achieved. Nevertheless, males and females were almost equal on the average highest grade completed, and number of times legally married. On average, female inmates had more biological children than male inmates.

Demographic characteristics by race and ethnicity are displayed in Table 3. Caucasian and Asian American inmates tended to be older than other ethnicities, and Asian American inmates, on average, had the longest length of sentence compared to all other ethnic identifications. Asian American inmates also had the highest average grade achieved compared to all other ethnicities. Those inmates who identified as Hispanic had the highest number of biological children, whereas all ethnic identities were similar on average number of times married.

Table 1  
*Demographic Characteristics for Sample and General Population Inmates*

<table>
<thead>
<tr>
<th>Age/Sentence Length</th>
<th>Sample</th>
<th>General Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>33.14</td>
<td>37.80</td>
</tr>
<tr>
<td>Sentence</td>
<td>46.68</td>
<td>114.30</td>
</tr>
<tr>
<td>Race/Ethnicity (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>77.8</td>
<td>73.2</td>
</tr>
<tr>
<td>African American</td>
<td>5.6</td>
<td>9.7</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>6.0</td>
<td>13.3</td>
</tr>
<tr>
<td>Asian American</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Group</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
<td>31.02</td>
<td>12.04</td>
</tr>
<tr>
<td>Sentence</td>
<td>99.61</td>
<td>97.59</td>
</tr>
<tr>
<td>Children</td>
<td>1.09</td>
<td>1.36</td>
</tr>
<tr>
<td>Grade</td>
<td>11.20</td>
<td>1.39</td>
</tr>
<tr>
<td>Married</td>
<td>.51</td>
<td>.78</td>
</tr>
</tbody>
</table>

Table 2
Demographic Variables of Male and Female Inmates

<table>
<thead>
<tr>
<th>Group</th>
<th>Caucasian</th>
<th>African American</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Age</td>
<td>35.29</td>
<td>11.70</td>
<td>24.89</td>
</tr>
<tr>
<td>Sentence</td>
<td>41.96</td>
<td>57.43</td>
<td>58.00</td>
</tr>
<tr>
<td>Children</td>
<td>1.84</td>
<td>1.61</td>
<td>2.00</td>
</tr>
<tr>
<td>Grade</td>
<td>11.16</td>
<td>2.06</td>
<td>11.56</td>
</tr>
<tr>
<td>Married</td>
<td>.82</td>
<td>1.03</td>
<td>.22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Asian American</th>
<th>Native American</th>
<th>Bi-Racial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Age</td>
<td>35.25</td>
<td>16.21</td>
<td>25.00</td>
</tr>
<tr>
<td>Sentence</td>
<td>41.96</td>
<td>57.43</td>
<td>58.00</td>
</tr>
<tr>
<td>Children</td>
<td>1.00</td>
<td>1.41</td>
<td>3.00</td>
</tr>
<tr>
<td>Grade</td>
<td>12.25</td>
<td>.50</td>
<td>11.00</td>
</tr>
</tbody>
</table>
Measures

Psychopathy

Psychopathy was measured using the Psychopathy Checklist- Revised (PCL-R; Hare, 2003). The PCL-R contains 20 items scored on a scale of 0 (absent) to 2 (present) for a total score of 40, and is measured via semi-structured interview and collateral mental health and legal file review. The total score is split into two factors: The interpersonal and affective factor, and the impulsive and antisocial lifestyle factor. The PCL-R has been widely recognized as the “gold standard” measure of psychopathy, and has been reviewed by hundreds of studies, all supporting its reliability and validity in predicting violence, reoffending, and recidivism among high scorers (Ogloff, 2006). Cronbach’s Alpha for male and female offenders is reported to be .85 and .82, respectively according to the PCL-R manual (Hare, 2003), indicating strong internal consistency. Interrater reliability scores were also reportedly high for both male and female offenders (ICC = .92, .97 respectively).

Relational Aggression

Relational aggression was measured using the Prison Violence Inventory (PVI; Warren, Hurt, Loper, Bale, Friend, & Chauhan, 2002). The PVI includes 34 self-report items measuring aggressive behaviors that were perpetrated and experienced while in prison. Participants indicated whether or not they were a victim or perpetrator of any aggressive behavior by answering “Yes” (1) or “No” (0). Warren et al. (2002) created two separate scores to represent perpetration (PVI-Violence Score) and victimization (PVI-Victimization Score). For the purposes of this study, only six items from the PVI-Violence Score measuring relational
aggression (PVI-RA; e.g., “Have you ever ‘snitched’ on anyone?”; “Have you ever left someone out or excluded them to make them feel badly?”) were retained.

Warren et al. (2002) tested the validity of the PVI-Violence Score by correlating the total number of endorsed items with the number of institutional misconduct reports \((r = .35, p < .001)\), societal rule violations \((r = .25, p < .001)\), and institutional rule violations \((r = .32, p < .32)\). The results of these correlations provide some evidence that the self-report of aggression is valid. Only two unpublished studies reported reliability estimates for the PVI-Violence Scale: Komarovskaya (2009) found a reliability coefficient of .85, indicating acceptable levels of reliability; and Sturek (2009) reported high internal consistency \((\alpha = .84)\).

**Procedure**

Potential participants were randomly selected from a list of inmates on intake status who have completed the PAI. Thus, those inmates who could not read above a fourth grade reading level were excluded from the study prior to recruitment procedures. According to the procedures of the PAP study, two meetings were scheduled to administer all measures. During the first session, graduate research assistants met with three to eight inmates for one hour in a closed classroom within the participant’s respective housing units. During this session, participants were given a brief explanation about the purpose of the PAP study, and provided with an informed consent. For those inmates who agreed to participate in the study, several measures from the PAP study were administered. During the second session, research assistants met individually with those inmates who agreed to participate in the study, and administered the PCL-R, PVI, and two other measures pertaining to the PAP study. Between these two sessions, research assistants obtained collateral information per administration instructions of the PCL-R, including medical and legal file records. Research assistance were advanced graduate students in
clinical psychology program, and were trained in administration procedures, including proper administration of the PCL-R.
Results

Descriptive

Demographic characteristics for male, female, and total sample scores on the PCL-R and PVI-RA can be found in Table 4. On average, the total sample scores on the PCL-R reached slightly above the mid-point of clinical cut-off \((M = 15.89, SD = 7.87)\). Of the 235 inmates who participated, 44 (17.7\%) endorsed engaging in any relationally aggressive behaviors \((M = .29, SD = .70)\), and only 14 (5.6\%) participants endorsed engaging in more than one type of relationally aggressive behavior. In general, males \((M = 16.30, SD = 8.08)\) scored slightly higher on the PCL-R than females \((M = 15.61, SD = 7.68)\). The difference between these average scores did not reach statistical significance. Males also scored higher than females on the PVI-RA. However, as noted in the analyses below, this difference was also non-significant.

Table 4

<table>
<thead>
<tr>
<th>Measure</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
<td>(M)</td>
</tr>
<tr>
<td>PCL-R</td>
<td>16.24</td>
<td>8.10</td>
<td>15.49</td>
</tr>
<tr>
<td>PVI-RA</td>
<td>.35</td>
<td>.81</td>
<td>.25</td>
</tr>
</tbody>
</table>

Average total scores among different races and ethnicities are displayed in Table 5. African American inmates \((M = 19.78, SD = 8.21)\) scored higher than other races/ethnicities on the PCL-R, and African American \((M = .71, SD = 1.07)\) and Bi-racial inmates \((M = .71, SD = 1.11)\) had the highest scores on the PVI-RA. Pairwise comparisons were conducted to evaluate the extent to which scores between different races and ethnicities were statistically significant. Results of this analysis indicated that there were no statistically significant differences on either the PCL-R or the PVI-RA between any of the races and ethnicities.
Table 5

Means and Standard Deviations of PVI-RA and PCL-R Scores for Different Races/Ethnicities

<table>
<thead>
<tr>
<th>Race</th>
<th>PCL-R M</th>
<th>PCL-R SD</th>
<th>PVI-RA M</th>
<th>PVI-RA SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>15.86</td>
<td>7.89</td>
<td>.23</td>
<td>.64</td>
</tr>
<tr>
<td>African American</td>
<td>19.78</td>
<td>8.21</td>
<td>.71</td>
<td>1.07</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13.4</td>
<td>7.07</td>
<td>.25</td>
<td>.62</td>
</tr>
<tr>
<td>Asian American</td>
<td>9.27</td>
<td>4.93</td>
<td>.50</td>
<td>.84</td>
</tr>
<tr>
<td>Native American</td>
<td>18.80</td>
<td>3.11</td>
<td>.40</td>
<td>.89</td>
</tr>
<tr>
<td>Bi-Racial</td>
<td>15.65</td>
<td>7.90</td>
<td>.71</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Relational Aggression Between Sexes

A one-way analysis of variance (ANOVA) was conducted to test the hypothesis that females would engage in significantly more relationally aggressive behaviors than males. Sex was considered the independent variable, whereas relational aggression was used as a continuous dependent variable. Levene’s Test was conducted to evaluate the assumption of equal variance across groups. The results for this test were significant ($F = 4.47, p = .036$), indicating that this assumption was violated. That is, equal variance between males and females on scores of relational aggression could not be assumed. Although males ($M = .35, SD = .80$) scored higher than females ($M = .25, SD = .63$) on the PVI-RA, the results of the ANOVA did not reach significance, $F (1, 233) = 1.20, p = .27$, indicating that there was not a statistically significant difference in relational aggression scores between males and females. Thus, the first hypothesis of the current study was not supported.
**Psychopathy and Relational Aggression**

Bivariate correlations were conducted to examine the relationship between relational aggression, psychopathy, and age. The Bonferroni adjustment was implemented to control for Type I errors, and a $p$ value of less than .005 (.05/10 = .005) was required for significance. Results from these analyses, and descriptive information are summarized in Table 6, which show that five of the ten correlations were statistically significant. The PVI-RA was negatively correlated with age, $r(229) = -.20$, $p = .003$, suggesting that as inmates get older, they are less likely to engage in relationally aggressive behaviors. Similarly, age was negatively correlated with the Factor 2 of the PCL-R $r(229) = -.21$, $p = .001$, indicating that as inmates get older, they are also less likely to engage in antisocial behaviors. Although age was also negatively correlated with PCL-R Factor 1 and Total Score, these correlations did not reach statistical significance. In general, the above results indicate that older inmates have less psychopathic traits, and engage in less relationally aggressive behaviors than their younger counterparts. Positive correlations were also found between each of the PCL-R variables and the PVI-RA, suggesting that those inmates who have more psychopathic traits are more likely to engage in relationally aggressive behaviors. However, none of these correlations reached significance. The PCL-R Total Score, Factor 1, and Factor 2 were all positively and significantly correlated with each other.
Partial correlation coefficients were then computed among the PCL-R variables and the
PVI-RA, after controlling for age. Using the Bonferonni approach, a $p$ value less than .008 (.05/6
= .008) was required to reach statistical significance. The results of these partial correlations are
displayed in Table 7. The correlations among the PCL-R variables remained statistically
significant, whereas the correlations among the PCL-R variables and the PVI-RA remained
positive, but non-significant and low.

Table 6
Bivariate Correlations in Total Sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td>-15</td>
<td>-04</td>
<td>-21*</td>
<td>-20*</td>
</tr>
<tr>
<td>2. PCL-R Total</td>
<td>-</td>
<td></td>
<td>.82*</td>
<td>.90*</td>
<td>.15</td>
</tr>
<tr>
<td>3. Factor 1</td>
<td></td>
<td></td>
<td></td>
<td>.52*</td>
<td>.16</td>
</tr>
<tr>
<td>4. Factor 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.14</td>
</tr>
<tr>
<td>5. PVI-RA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>33.14</td>
<td>15.89</td>
<td>5.25</td>
<td>8.82</td>
<td>.29</td>
</tr>
<tr>
<td>SD</td>
<td>11.31</td>
<td>7.87</td>
<td>3.52</td>
<td>4.60</td>
<td>.70</td>
</tr>
</tbody>
</table>

*p < .005

Table 7
Partial Correlations, Controlling for Age in Total Sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>PCL-R Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVI-RA</td>
<td>.12</td>
<td>.16</td>
<td>.10</td>
</tr>
</tbody>
</table>

*p < .008

Psychopathy and Relational Aggression Between Sexes

Bivariate and partial correlations were then conducted separately for males and females to
determine whether a relationship between psychopathy and relational aggression was mediated
by sex. Bivariate correlations were first conducted for male inmates. The Bonferonni adjustment
was retained from the above analyses, and a $p$ value of less than .005 (.05/10 = .005) was needed
to reach statistical significance. Results of these bivariate correlations are displayed in the top
half of Table 8. Age was negatively related to the PVI-RA, and PCL-R Factor 2, indicating that as male inmates got older, they tended to engage in less relationally aggressive and less antisocial behaviors. In contrast, age was positively correlated with PCL-R Factor 1 and Total Score, indicating that older male inmates, on average, had more psychopathic traits and affective deficiency than their younger counterparts. However, none of the above correlations reached statistical significance. The PVI-RA was positively correlated with each of the PCL-R variables, indicating that those male inmates who had more psychopathic traits were more likely to engage in relationally aggressive behaviors. There was a significant positive correlation between the PCL-R Total Score and Factor 1, $r(89) = .87$, $r^2 = .76$, $p < .001$; the PCL-R Total Score and Factor 2, $r(89) = .91$, $r^2 = .83$, $p < .001$; and Factor 1 and Factor 2, $r = .63$, $r^2 = .40$, $p < .001$, indicating that male inmates score higher on one of the PCL-R variables, they tend to score high on the other two.

Table 8

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>-</td>
<td>.08</td>
<td>.17</td>
<td>-.07</td>
<td>-.22</td>
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<tr>
<td>2. PCL-R Total</td>
<td>-</td>
<td>.87*</td>
<td>.91*</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>3. Factor 1</td>
<td>-</td>
<td></td>
<td>.63*</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>4. Factor 2</td>
<td>-</td>
<td></td>
<td></td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>5. PVI-RA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>33.05</td>
<td>16.24</td>
<td>5.64</td>
<td>8.53</td>
<td>.35</td>
</tr>
<tr>
<td>SD</td>
<td>12.10</td>
<td>8.10</td>
<td>3.80</td>
<td>4.36</td>
<td>.81</td>
</tr>
</tbody>
</table>

*p < .005

Partial correlations were then conducted to determine the relationship among the PCL-R variables and the PVI-RA, after controlling for age for male inmates. The Bonferonni adjustment was calculated, and a $p$ value of less than .008 (.05/6 = .008) was needed to reach statistical significance.
significance. Results of these partial correlations are displayed in Table 9. The correlations between the PVI-RA and each PCL-R variable remained positive, indicating that male inmates who had more psychopathic traits were somewhat more likely to engage in more relationally aggressive behaviors. However, these correlations also remained non-significant, and weak ($r = .10 - .13$).

Table 9

*Partial Correlations, Controlling for Age Among Male Inmates*

<table>
<thead>
<tr>
<th>Variables</th>
<th>PCL-R Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVI-RA</td>
<td>.10</td>
<td>.10</td>
<td>.13</td>
</tr>
</tbody>
</table>

*p < .008

Bivariate correlations were then conducted to determine the relationships among age, psychopathy, and relational aggression for female inmates, separate from male inmates. The Bonferroni adjustment was applied the same way as above, such that a $p$ value of less than .005 ($0.05/10 = 0.005$) was needed to reach statistical significance. The results from these bivariate correlations are displayed in Table 10. There was a significant negative correlation between age and PCL-R Factor 2, $r(138) = -.33, r^2 = .11, p < .001$; and between age and PCL-R Total Score, $r(138) = -.32, r^2 = .10, p < .001$, indicating that as female inmates get older, they have less antisocial behaviors, and less overall psychopathic traits, respectively. There was also a negative correlation among age and PVI-RA scores, and age and PCL-R Factor 1 scores. However, these correlations failed to reach significance. The PVI-RA scores were positively and significantly correlated with Factor 1 of the PCL-R, $r(138) = .24, r^2 = .06, p = .004$, indicating that female inmates with more affective deficiency were significantly more likely to engage in relationally aggressive behaviors. The PVI-RA scores were also positively correlated with PCL-R Total Score and Factor 2, but these correlations did not reach significance. There was also a significant
positive relationship between the PCL-R Total Score and Factor 1, \( r(138) = .78, r^2 = .61, p < .001 \); PCL-R Total Score and Factor 2, \( r(138) = .90, r^2 = .81, p < .001 \); and Factor 1 and Factor 2, \( r(138) = .47, r^2 = .22, p < .001 \), suggesting that female inmates who scored high on one variable of psychopathy were more likely to score high on the other two variables.

Table 10  
*Bivariate Correlations Among Female Inmates*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>-</td>
<td>.32*</td>
<td>-.18</td>
<td>-.34*</td>
<td>-.18</td>
</tr>
<tr>
<td>2. PCL-R Total</td>
<td>-.18</td>
<td>.78*</td>
<td>.90*</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>3. Factor 1</td>
<td>-.34*</td>
<td>.47*</td>
<td>.24*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Factor 2</td>
<td>.16</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. PVI-RA</td>
<td></td>
<td></td>
<td></td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>34.69</td>
<td>15.49</td>
<td>5.03</td>
<td>8.93</td>
<td>.25</td>
</tr>
<tr>
<td>SD</td>
<td>10.64</td>
<td>7.58</td>
<td>3.34</td>
<td>4.69</td>
<td>.64</td>
</tr>
</tbody>
</table>

*p < .005

Finally, partial correlations were conducted to determine the relationship among psychopathy and relational aggression after controlling for age in female inmates. The Bonferroni adjustment was applied as before, and a p value of .008 (.05/6 = .008) was needed to reach statistical significance. The results of this analysis are displayed in the bottom half of Table 11. There was a positive correlation between the PVI-RA and each PCL-R variable after controlling for age, indicating that female inmates with more psychopathic traits were more likely to engage in relational aggression, despite their age. However, none of these correlations reached significance, suggesting that the significant relationship between the PVI-RA and Factor 1 of the PCL-R was mediated by how old the female inmates were.
Discussion

Review of Findings

The goals of the current study were threefold: (a) demonstrate that female inmates are significantly more relationally aggressive than male inmates, as evidenced in several previous empirical studies; (b) establish the extent to which relational aggression is related to psychopathy, before and after controlling for age; and (c) examine whether the relationship between psychopathy and relational aggression was mediated by sex, before and after controlling for age. The results did not support this first assertion. In fact, male inmates tended to be more relationally aggressive than females. Although these results are not consistent with the majority of the child and adolescent literature (see Crick & Grotpeter, 1995; Crick et al., 2006 for a review), they are consistent with the small body of literature on sex differences in relational aggression in adults, which show that males may be more relationally aggressive than females (Schmeelk et al., 2008; Storch et al., 2004). Another possible explanation of the above finding is the timing in which the measure was administered. That is, because data were collected from inmates on intake status, there was a limited amount of time in which these participants could engage in relationally aggressive behaviors. Thus, it is possible that the pattern of sex difference may have been different if more participants endorsed relationally aggression. In fact, there is some support that most female inmates on general population status engage in some relational aggression (Ben-Horin, Unpublished doctoral dissertation).

<table>
<thead>
<tr>
<th>Variables</th>
<th>PCL-R Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVI-RA</td>
<td>.16</td>
<td>.22</td>
<td>.10</td>
</tr>
</tbody>
</table>

*p < .005
The results also did not support the hypothesis that there would be a significant relationship between psychopathy and relational aggression for the total sample. This is contrary to the limited available research showing a significant positive relationship between these two variables (Ben-Horin, 2001). One possible reason why this relationship did not reach significance is that the limited endorsement of items tapping relational aggression underestimated the extent to which it was related to the psychopathy variables. That is, if the participants were allowed more time to engage in relational aggression, it is possible that participants with more psychopathic traits would have endorsed more relational aggressive behaviors. The positive relationship between these constructs provides some support to this hypothesis. However, it is also possible that relational aggression has little in common with psychopathy. The PCL-R is rife with externalizing antisocial behaviors (e.g., physical fights), such that relational may not contain enough overt behaviors to be included as a significantly related construct. Because of the limited amount of empirical literature on the relationship between psychopathy and relational aggression, it is unclear whether this is a feasible hypothesis. However, those studies that have examined this relationship have generally found significant results. Thus, one would expect that this relationship would be significant.

Finally, the third hypothesis that the relationship between psychopathy and relational aggression would be more significant in females than in males was partially supported. That is, there was a significant positive relationship between relational aggression and Factor 1 of the PCL-R, which measures the deficient affective experience that is characteristic in the traditional conceptualization of psychopathy. Specifically, the results indicated that female inmates who exhibit more affective and interpersonal characteristics of psychopathy are more likely to engage in relationally aggressive behaviors. Although relational aggression may seem as though it is
inherently antisocial, and thus belong to Factor 2, it has been conceptualized as deliberately manipulating and destroying an individual’s social environment through lying, spreading hurtful rumors, and sometimes conning in order to hurt the individual (Crick & Grotpeter, 1995).

Furthermore, the goal of engaging in relational aggression is to purposefully hurt another person’s feelings, rather than using it as a means to attain something, which is more defining of behaviors measured by Factor 2. Thus, engaging in this type of behavior may be more characteristic of an individual who lacks the appropriate affect to the extent that they maliciously hurt another person without the expectation of gain, as opposed to having the goal of attempting to get something that they want, and willing to hurt anyone in the way of attaining it. Ben-Horin (2001) found a significant positive relationship between relational aggression and Factor 1 of the PCL-R in some of her participants, but not others, providing only partial support to the validity of the current findings. Ben-Horin also found significant positive relationships between relational aggression and other variables of psychopathy (e.g., PCL-Total Score, and PCL-R Factor 2), which is contrary to the above findings. However, Ben-Horin measured relational aggression using a revised version of the Peer Nomination Scale (Crick & Grotpeter, 1995), which asks participants about relationally aggressive behaviors in other inmates; whereas the PVI-RA, a self-report measure of relationally aggressive behaviors was utilized in the current study. Thus, it is possible that peer nomination may be a better way to measure relational aggression in adults, as it is suggested with children.

It is important to note, however, that the relationship between Factor 1 and relational aggression did not reach significance after controlling for age. In fact, age was negatively related to psychopathy and to relational aggression, indicating traits of psychopathy and relational aggression are less likely to occur in older female inmates. Furthermore, age mediated the
relationship between relational aggression and psychopathy to the extent that this relationship was only significant before controlling for the affects of age on both constructs. These results indicated that the relationship between psychopathy and relational aggression depends on the age of the individual, such that this relationship became weaker as the participants got older. This provides further support that findings about relational aggression in childhood may not be applicable to adulthood (Schmeelk et al., 2008).

Nevertheless, the current study also showed that the relationship between Factor 1 and relational aggression was significant for females but not males before controlling for age. Crick and Grotpeter (1995) proposed that relational aggression might be more effectively used against females more than males, because social relationships are more important to females, whereas physical dominance is more important to males. Considering this theory, the current findings are not surprising. That is, the non-significant relationship between relational aggression and Factor 1 in males may be because it is not used with the intent to maliciously harm the social relationships of another person, but rather as an attempt to show social dominance. However, there is little to no research that has looked at the possible reasons why males engage in these behaviors, and the results of the current study do not provide support for this latter theory.

**Strengths and Limitations**

There are several limitations to the current study that must be considered in light of the results. Most likely the largest limitation was the way in which relational aggression was measured. The PVI-RA contained six self-report items that asked about the extent to which inmates engaged in relational aggression since they were in prison. Although there has been some support for the validity of self-report measures of aggression with inmate populations (Warren et al., 2002), there is less research on the validity of self-reported relational aggression.
Furthermore, participants in the current study were on intake status at the prison where the study took place, and it was their first time in prison. Thus, some participants were recruited one week after arriving at prison intake, and may not have had substantial time to engage in relational aggression. Future research should collect data from participants in the prison general population, in which many inmates have been housed for years, and have had ample time to engage in antisocial and aggressive behaviors with other inmates. Future replications studies should also compare the self-reported aggression measure with the Peer Nomination Scale to establish the validity of these two types of measures in establishing the use of relational aggression.

Another limitation to the current study was the overall ambiguity with which participants responded to the PVI-RA. That is, some participants answered the items in reference to when they were in county jail or in the community, whereas others may have responded to the items in reference to when they were in prison. For example, in response to the qualitative question “Has anyone threatened you with an object that was used as a weapon?”, one participant answered “guy pointed a gun at me”. It is unlikely that the participant was referring to his experience while incarcerated, and was most likely referring to an event outside of the prison. Thus, the ambiguity of the responses to the PVI-RA makes it difficult to determine whether or not inmates experiences more or less relational aggression in prison than they endorsed. Thus, future replication studies should clarify that inmates should endorse items that are relevant only to their experiences within the prison.

Despite the limitations to the current study, there were also some notable strengths. This was the first known study to examine the differences in the relationship between relational aggression and psychopathy in male and female inmates. As such, this study may be a
springboard for future studies to continue examining the differences in the behavioral and affective manifestations of psychopathy in females compared to males. Results from this study indicate that there are at least some significant differences in the way females express certain components of psychopathy compared to males. Therefore, the few significant findings of the current study may open proverbial doors to another unexplored area of psychopathy research.

**Directions of Future Research**

In sum, the findings from this study provide some support that male and female inmates differ in their expression of psychopathy. However, more research needs to be conducted in order to build on the findings of the current study. Researchers should examine the extent to which male and female general population inmates engage in relationally aggressive behaviors, and whether or not this difference is significant. More research should also be conducted with adults from other populations, and in other settings to examine the extent to which relational aggression and psychopathy are related. Future studies may also benefit from examining the extent to which individuals engage in relationally aggressive behaviors with the other sex, and how this is related to psychopathy. Finally, future research should utilize multiple measures of both psychopathy and relational aggression to bolster the reliability and validity of their findings.
References


