
8 9 **The Association of Psychopathic** 10 **Traits with Aggression and** 11 **Delinquency in Non-Referred** 12 **Boys and Girls**

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16 Monica A. Marsee, Persephanie Silverthorn and
17 Paul J. Frick*^{Q1}

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20 **The current study investigated the association of psycho-**
21 **pathic traits with aggression and delinquency in a non-**
22 **referred sample of boys ($n = 86$) and girls ($n = 114$) in the**
23 **fifth through ninth grades at two public schools in a large**
24 **teacher- and self-report ratings, whereas aggression and**
25 **delinquency were assessed through self-report ratings.**
26 **Self-reported psychopathic traits were associated with**
27 **both aggression and delinquency and teacher-reported**
28 **psychopathic traits were associated with higher levels of**
29 **aggression. There were no clear differences for the callous-**
30 **unemotional, narcissism, or impulsivity dimensions in**
31 **their associations with aggression and delinquency. Also,**
32 **psychopathic traits predicted aggression and delinquency**
33 **for both boys and girls. The one clear gender difference**
34 **was in the stronger associations between psychopathic**
35 **traits and relational aggression for girls. Copyright ©**
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39 Psychopathy is conceptualized as a distinct constellation of affective, interpersonal,
40 and behavioral traits that can be used to describe a unique subgroup of antisocial
41 adults (Hare, 1999). Adults with psychopathy are described as interpersonally
42 arrogant, callous and unemotional, lacking in empathy and guilt, and prone to
43 high levels of irresponsible and impulsive behavior (Hare, 1999). The construct of
44 psychopathy has proven to be quite important for identifying severely violent and
45 disruptive adults in the criminal justice system and has proven to be particularly
46 useful for predicting violent recidivism upon release from prison (Gendreau,
47 Goggin, & Smith, 2002; Hemphill, Hare, & Wong, 1998).

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49 *Correspondence to: Paul J. Frick, Department of Psychology, University of New Orleans, 2001 Geology
50 and Psychology Building, New Orleans, LA 70148, U.S.A. E-mail: pfrick@uno.edu
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Recently, there have been a number of attempts to extend the construct of psychopathy to youth. Although such efforts involve a number of ethical (e.g. potential iatrogenic effects of labeling a child “psychopathic”; Steinberg, 2002), methodological (e.g. determining the optimal methods for assessing these traits in young samples; Johnstone & Cooke, 2004), and developmental (e.g., some level of psychopathic traits is normative in youth; Seagrave & Grisso, 2002) issues, the results of this extension to youth have been quite promising (see Frick & Marsee, [in press](#)^{Q2}, for a review). Specifically, studies in forensic (Brandt, Kennedy, Patrick, & Curtin, 1997; Forth, Hart, & Hare, 1990; Kruh, Frick, & Clements, 2005; Salekin, Leistico, Neumann, DiCicco, & Duros, 2004), clinic-referred (Christian, Frick, Hill, Tyler, & Frazer, 1997), and community (Andershed, Gustafson, Kerr, & Stattin, 2002; Frick, Cornell, Barry, Bodin, & Dane, 2003; Lynam, 1997) samples have shown that psychopathic traits are associated with a more severe and aggressive pattern of antisocial behavior. Further, while many of these studies have been cross-sectional (e.g. Christian et al., 1997) or predictive studies involving limited follow-up periods of one (Frick et al., 2003) to two (Brandt et al., 1997; Forth et al., 1990) years, there is evidence that psychopathic traits predict more severe and stable conduct problems and delinquency even over a four year follow-up period (Frick, Stickle, Dandreaux, Farrell, & Kimonis, [in press](#)^{Q2}).

These findings provide strong support for the continued study of psychopathic traits in juvenile samples. However, there are a number of limitations in this research. First, the vast majority of this research has focused on adjudicated (e.g. Brandt et al., 1997; Forth et al., 1990) or clinic-referred samples of youth (e.g. Christian et al., 1997). When studies have examined non-referred samples, the samples are typically selected to be high risk by oversampling children with conduct problems (Frick et al., 2003; Frick et al., [in press](#)^{Q2}; Lynam, 1997). Thus, much less is known about the association of psychopathic traits with aggression and delinquency in unselected samples of youth. One notable exception is the study by Andershed et al. (2002) of 1,279 eighth grade students in a medium-sized Swedish community in which psychopathic traits were related to more frequent, violent, and versatile conduct problem behavior.

Another limitation in this research is the lack of information on which dimension or dimensions of psychopathy might be most strongly associated with antisocial and aggressive behavior. Although there is still debate about the exact number of discrete dimensions that adequately describe the construct of psychopathy (Cooke, Michie, Hart, & Clark, 2004), recent findings in both adults (Cooke & Michie, 2001; Hare, 2003) and children (Frick, Bodin, & Barry, 2000) suggest that there are at least three facets of psychopathy that can be measured independently of antisocial behavior: narcissism (arrogant and deceitful interpersonal style), callous–unemotional traits (deficient affective experience), and impulsivity (impulsive and irresponsible behavioral style). In the existing research with both adults and youth, most studies testing the association between psychopathic traits and severity of antisocial behavior have used total scores that combine across these dimensions (see Frick & Marsee, [in press](#)^{Q2}; Hemphill et al., 1998, for reviews). In the few studies that have tested the utility of the separate psychopathy dimensions for predicting measures of aggressive and antisocial behavior, the impulsive dimension seems to show the strongest association (Hemphill et al., 1998). However, these studies have largely been conducted on adult samples and there is reason to believe that different

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6 dimensions of psychopathic traits may be more strongly associated with aggression
7 and delinquency in samples of youth. That is, neither the impulsive nor narcissism
8 dimensions consistently differentiate distinct groups within adjudicated (e.g.
9 Caputo, Frick, & Brodsky, 1999) or clinic-referred samples (Christian et al.,
10 1997) of antisocial youth, samples in which most youth show elevated levels of
11 these traits. In contrast, the presence of callous-unemotional (CU) traits does
12 differentiate a more severe and aggressive subgroup of antisocial youth (Christian
13 et al., 1997; Frick et al., 2003) that shows a number of characteristics consistent
14 with the construct of psychopathy (Barry et al., 2000). While suggestive of the
15 potential importance of CU traits in samples of youth, the methodology of these
16 previous studies (i.e. using CU traits to differentiate groups of antisocial youth) does
17 not allow for a direct comparison of the shared and unique variance accounted for by
18 the different dimensions of psychopathic traits in predicting measures of antisocial
19 and aggressive behavior.

20 A final critical limitation in the existing literature on the association of psycho-
21 pathic traits with antisocial and aggressive behavior is the lack of information on
22 whether there are gender differences in this association. Several reviews suggest that,
23 although women generally score lower than men on measures of psychopathy, the
24 association between psychopathy and measures of antisocial behavior is often
25 comparable for men and women (Nicholls, Ogloff, & Douglas, 2004; Vitale &
26 Newman, 2001), with some notable exceptions in which the association between
27 psychopathy and violence was weaker in women than men (Salekin, Rogers, &
28 Sewell, 1997; Salekin, Rogers, Ustad, & Sewell, 1998). However, studies extending
29 the construct of psychopathy to youth have generally studied only boys (e.g. Kruh
30 et al., 2005; Lynam, 1997) or have failed to test gender differences in the correlates
31 to psychopathic traits (e.g. Andershed et al., 2002; Christian et al., 1997). Further,
32 it is possible that the dimensions of psychopathic traits that might be the strongest
33 predictors of antisocial behavior may be different for boys and girls. For example,
34 Frick et al. (2003) reported that, in a non-referred sample of children, CU traits in
35 the absence of impulsivity and conduct problems were a better predictor of later
36 delinquency for girls than for boys.

37 A critical issue in studying the association between psychopathic traits and
38 antisocial outcomes in girls is the evidence suggesting that traditional definitions
39 of aggression may not adequately describe how girls typically cause harm to
40 others (Crick et al., 1999). Specifically, a growing body of research suggests
41 that, whereas boys prefer to utilize physical and overt forms of aggression (e.g.
42 hitting, pushing, kicking, and threatening), girls are more likely to use relational
43 and social aggression (e.g. gossiping about others, excluding target children from a
44 group, spreading rumors) (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick &
45 Grotzger, 1995; Moretti, Holland, & McKay, 2001). Therefore, in considering
46 the association between psychopathic traits and aggression in boys and girls, it is
47 important to consider relations with both traditional measures of physical
48 aggression and with measures of relational aggression that may more adequately
49 capture girls' attempts to harm others through hurting their social relationships
50 (Crick & Grotzger, 1995). It may be that some of the inconsistencies in previous
51 research on gender differences in the association between psychopathic traits and
52 aggression are due to a failure to consider gender-specific manifestations of
53 aggression.

Based on these issues, the current study investigated the association between psychopathic traits and measures of aggression and delinquency in an ethnically diverse sample of non-referred school children. We first tested the prediction that psychopathic traits would be associated with higher levels of aggression and delinquency in this non-referred sample of youth. Second, we tested the prediction that CU traits would be the dimension that would show the strongest unique association with aggression and delinquency compared to the other dimensions of psychopathic traits. Third, we tested the prediction that these associations between psychopathic traits and antisocial behavior would be moderated somewhat by gender, with CU traits being more strongly related to aggression and delinquency for girls and with the association between psychopathic traits and relational aggression being stronger for girls.

METHOD

Participants

The parents of 670 fifth through ninth grade students from two public schools in a large urban area in the southeastern United States were invited to participate in the study. Of those contacted, approximately 53% ($n = 358$) responded to the invitation to participate. Approximately two-thirds of those parents who responded ($n = 235$) agreed to let their children participate (roughly 35% of the entire student body). However, due to student absences on testing days ($n = 33$) and problems in data collection ($n = 2$) the final sample consisted of 200 students (86 boys and 114 girls) ranging in age from 10 to 17 (mean = 13.16; $SD = 1.57$). The students were ethnically diverse, including 49 Caucasian (24.5%), 121 African-American (60.0%), 13 Hispanic (6.5%), and 7 biracial (3.5%) participants. Eleven children (5.5%) classified themselves as “other” when rating ethnicity. This ethnic breakdown corresponds closely with that of the schools sampled, which had ethnic breakdowns as follows: Caucasian 20–21%, African-American 62–69%, Hispanic 7–10%, Asian 3–5%, and American Indian less than 1%. Due to the fact that the majority of students in the current study were classified as either Caucasian or African-American, all ethnic minorities were grouped together for the purposes of data analysis. Twenty-six children (12.9%) in the current study reported receiving special education services at school (excluding those classified as gifted/talented). This percentage is similar to the percentage of students receiving services at the schools sampled (i.e. 15–18%).

Measures

Ratings of Children's Social Behavior (RCSB; Crick, 1996)

The RCSB is a 17-item rating scale designed to assess aggressive and prosocial behavior in children. The RCSB consists of three subscales measuring relational aggression, overt aggression, and prosocial behavior. Seven items form a relational aggression subscale that examines how often children engage in relationally

aggressive acts towards their peers (e.g. “When I get mad at classmates, I get even by excluding them from my group of friends,” “I spread rumors or gossip about classmates,” “I try to get others to dislike certain classmates by telling lies about them to others”). Four items form an overt aggression subscale that assesses how often children engage in overtly aggressive acts towards their peers (e.g. “I hit, shove, or push classmates,” “I get into physical fights with classmates,” “I like to try to dominate or bully classmates”). Four items measuring prosocial behavior and two items measuring peer acceptance were not included in analyses. Items on the RCSB are rated on a five-point Likert scale ranging from “never true” to “almost always true.” Previous research (Crick, 1996) supports the internal consistency of all three subscales (coefficient alphas of 0.94 for both relational and overt aggression) and scores on the RCSB have been reported to be highly correlated with peer nominations of aggression ($r=0.57-0.63$) and to be stable over both short ($r=0.80-0.86$ over 1 month) and long ($r=0.56-0.68$ over 6 months) periods of time. Internal consistencies for the RCSB aggression scales were somewhat lower in the current sample ($\alpha=0.65$ for relational aggression and 0.68 for overt aggression). However, consistent with past studies, the scales were significantly correlated ($r=0.51, p<0.001$).

Antisocial Process Screening Device (APSD; Frick & Hare, 2001)

The APSD is a 20-item measure of antisocial behavior in children. Each item is rated on a three-point scale as either 0 (not at all true), 1 (sometimes true), or 2 (definitely true). The APSD was modeled after the Psychopathy Checklist—Revised (PCL-R; Hare, 1991), which assesses psychopathic traits in adults. Frick et al. (2000) conducted a factor analysis in large community sample ($n=1,136$) and found that the APSD can be divided into three distinct factors: (1) a five-item impulsivity dimension (IMP), (2) a seven-item narcissism dimension (NAR), and (3) a six-item callous and unemotional dimension (CU). While researchers studying youth in institutional settings (e.g. adjudicated or detained youth) often use the youth version of the PCL-R (PCL:YV; Forth, Kosson, & Hare, 2003) when assessing psychopathic traits, the PCL:YV is not amenable for large-scale data collection in a normative sample. Specifically, its content (e.g. focusing on the type and severity of criminal behavior) and methodology (i.e. individual interviews and institutional chart review) was developed primarily for use in forensic settings. For this reason, the APSD was chosen as more appropriate for the assessment of psychopathic traits in the current sample.

The APSD was designed to be completed by the child’s parent or teacher and there are several pieces of evidence for its validity. First, scores on the APSD have designated a group of children with conduct problems that show a more severe and aggressive pattern of conduct problem behavior (Christian et al., 1997; Frick et al., 2003). Second, the APSD has also designated children with conduct problems who show distinct characteristics consistent with the construct of psychopathy, such as a preference for thrill-seeking behaviors (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999), a reward dominant response style (Barry et al., 2000) and deficits in the processing of emotional stimuli (Blair, Colledge, Murray, & Mitchell, 2001). Past research on older children and young adolescents has suggested that teacher-report

of psychopathic traits may be somewhat more valid than parent-report (Barry et al., 2000). Therefore, teacher-report of the APSD was used as the primary measure of psychopathic traits in this sample. The internal consistency of teacher-report was acceptable for all APSD scales: Total APSD = 0.90; CU = 0.74; NAR = 0.87; IMP = 0.71.

A child self-report version of the APSD was used as a second measure of psychopathic traits. This self-report version of the APSD has been used in several past studies and there is evidence supporting the three factor structure in this format (Vitacco, Rogers, & Neumann, 2003), its ability to designate a more severe and aggressive group of antisocial youth (Caputo et al., 1999; Kruh et al., 2005; Salekin et al., 2004), and its association with cognitive and affective deficits consistent with adult research on psychopathy (Loney, Frick, Clements, Ellis, & Kerlin, 2003; Pardini, Lochman, & Frick, 2003). Also, a recent study comparing the APSD and PCL:YV with external criteria found that they showed similar correlations with number of arrests (APSD = 0.33 and PCL:YV = 0.36, both $p < 0.05$) and number of violent arrests (APSD = 0.25 and PCL:YV = 0.28, both $p < 0.05$) in an adolescent offender sample (Salekin et al., 2004). However, consistent with past uses of the self-report scale (e.g. Loney et al., 2003; Pardini et al., 2003), the Total APSD score demonstrated adequate internal consistency in this sample (0.71) but the subscales did not (0.29–0.59). Thus, only the Total APSD scale from the child's report was used in analyses. Also, all scale scores were determined without item 2 ("Engages in illegal activities"), consistent with the way the normative data for the scale were obtained (Frick & Hare, 2001), and to minimize overlap with measures of delinquent behavior. The child and teacher Total APSD scores were only modestly correlated in this study ($r = 0.17$, $p < 0.05$).

Self-Report of Delinquency (SRD; Elliott, Huizinga, & Ageton, 1985)

The SRD assesses 36 delinquent acts (e.g. destroying property, stealing, carrying weapons, selling drugs, hitchhiking, physical fighting, rape, alcohol and drug use) that the youth has committed within the past 12 months. Scores from the SRD have demonstrated good internal consistency in past studies of young adolescents (alpha = 0.88 for boys and 0.82 for girls) and scores on this scale have been significantly correlated with number of police contacts ($r = 0.42$, $p < 0.01$) and court convictions ($r = 0.36$, $p < 0.01$) (Krueger et al., 1994). For the purposes of the current study, separate violent (i.e. involving real or threatened direct physical harm to others) and nonviolent delinquency scales were formed by summing relevant items (27 nonviolent and 9 violent). The scales were highly correlated ($r = 0.72$, $p < 0.001$) and internal consistencies were adequate (alpha = 0.85 for nonviolent and 0.71 for violent).

Procedures

Prior to the initiation of data collection, all measures and procedures used in this study were reviewed and approved by the University of New Orleans Institutional Review Board (IRB). An invitation to participate in the study was sent home to the parents/guardians of all children in grades 5 through 9 at the target schools. Only

students who received permission from their parents were allowed to participate. Data were collected from the students during class time after parental permission was obtained. All children had the procedures explained to them and were asked if they would like to participate. All participants were informed that they could withdraw from the study at any time. No child refused to participate. After child assent was obtained, questionnaires were handed out in packets. The instructions for each measure were read aloud and a time limit was set for the completion of each measure. After completion of the student packets, each child received a \$5.00 gift certificate for fast food.

Individual teachers were then contacted and asked to complete questionnaires on each participating student. As part of a larger data collection procedure, copies of the teacher version of the APSD were left in the teachers' mailboxes at school and were collected within a three-week period. All teachers received a \$50.00 gift certificate upon completion of the questionnaires. Additionally, all teachers were entered into a raffle to win a \$100.00 gift certificate and, if they returned the forms early, they were also entered into an additional "early-bird" raffle to win a \$75.00 gift certificate.

RESULTS

Table 1 reports the means and standard deviations of the main variables of interest, as well as their correlations with the demographic variables. Importantly, the level and distribution of psychopathic traits, as measured by the teacher-report on the APSD, was similar to the normative sample reported for this scale. That is, the mean and standard deviation of the Total APSD score in the current sample (mean = 9.33; SD = 7.13) was similar to that reported for the normative sample (mean = 9.71; SD = 8.22) (Frick & Hare, 2001). There were a few associations with demographic variables. First, age was consistently associated with self-reported

Table 1. Correlations between main study variables and demographic variables

	Mean	SD	Age	Gender [†]	Race ^{††}
Aggression					
Overt	6.52	2.92	0.15*	-0.29**	0.16*
Relational	12.50	4.54	-0.08	-0.06	0.10
Delinquency					
Nonviolent	4.72	4.38	0.33**	-0.20**	-0.04
Violent	1.55	1.63	0.28**	-0.18*	0.12
Psychopathic traits—teacher					
Total	9.33	7.13	-0.08	-0.17*	0.09
CU	4.61	2.75	-0.02	-0.13	0.04
NAR	2.03	2.81	-0.15*	-0.13	0.11
IMP	2.34	2.17	-0.02	-0.22**	0.11
Psychopathic traits—child					
Total	13.32	4.93	0.12	-0.17*	0.06

SD = standard deviation; CU = callous-unemotional; NAR = narcissism; IMP = impulsivity.

[†]0 = male; 1 = female.

^{††}0 = Caucasian; 1 = minority (e.g., African-American, Hispanic, biracial, other).

** $p < 0.01$; * $p < 0.05$.

delinquency, indicating more delinquent acts (both violent and nonviolent) being reported by older children. Also, boys reported more overt aggression and delinquency, and were rated by teachers as showing more psychopathic traits, with this being largely accounted for by higher levels of impulsivity (see correlations in Table 1). However, there was no significant association between gender and relational aggression. Finally, ethnicity was generally not significantly associated with most variables, with the exception of a correlation between ethnicity and overt aggression indicating that ethnic minority students reported higher levels of overt aggression.

In order to test the first hypothesis concerning the association of psychopathic traits with aggression and delinquency, zero-order correlations between the main variables of interest were calculated and are reported in Table 2. These analyses indicated that self-reported psychopathic traits were significantly correlated with both self-reported measures of aggression ($r = 0.47$ and 0.41 , $p < 0.01$, for overt and relational, respectively) and with self-reported delinquency ($r = 0.43$ and 0.49 , $p < 0.01$, for violent and nonviolent delinquency, respectively). Correlations with teacher-reported psychopathic traits also revealed significant associations with aggression ($r = 0.31$ and 0.23 , $p < 0.01$, for overt and relational, respectively). However, the correlations between teacher-reported psychopathic traits and self-reported delinquency were not statistically significant ($r = 0.09$ and 0.11 for violent and nonviolent, respectively). Since overt and relational aggression were highly correlated in this sample ($r = 0.51$, $p < 0.01$), the correlations between psychopathic traits and each type of aggression were repeated, partialing the effects of the other type of aggression, to determine which type of aggression may be most strongly and uniquely associated with psychopathic traits. For self-reported psychopathic traits, the Total APSD score remained significantly correlated with both types of aggression after controlling for the other (partial $r = 0.33$ and 0.23 , $p < 0.01$, for overt and relational, respectively). For teacher-reported psychopathic traits, the Total APSD score remained significantly correlated with overt aggression after controlling for relational (partial $r = 0.23$, $p < 0.01$), but was not significantly correlated with relational aggression after controlling for overt (partial $r = 0.09$).

Table 2. Association of psychopathic traits with aggression and delinquency

	Aggression				Delinquency			
	Overt		Relational		Violent		Nonviolent	
	<i>r</i>	β	<i>r</i>	β	<i>r</i>	β	<i>r</i>	β
Psychopathic traits—teacher								
Total	0.31**	—	0.23**	—	0.09	—	0.11	—
CU	0.20**	0.02	0.13	-0.03	0.06	0.02	0.08	0.03
NAR	0.29**	0.14	0.24**	0.11	0.08	0.02	0.08	-0.05
IMP	0.31**	0.20	0.26**	0.19	0.09	0.07	0.13	0.15
		R^2		R^2		R^2		R^2
	—	0.10**	—	0.07**	—	0.01	—	0.02
Psychopathic traits—child								
Total	0.47**	—	0.41**	—	0.43**	—	0.49**	—

CU = callous-unemotional; NAR = narcissism; IMP = impulsivity; r = zero-order correlation; β = standardized beta.

** $p < 0.01$.

The second hypothesis focused on potential unique associations with the dimensions of psychopathic traits reported by the child's teacher. As indicated in Table 2, the subscales were mostly associated with both measures of aggression and these associations were generally of a comparable size across the dimensions of psychopathic traits. The one exception was the correlation between teacher-reported CU traits and relational aggression ($r = 0.13$), which was not significant. As was the case for the teacher-reported Total APSD score, none of the teacher-reported subscales were associated with self-reported delinquency. To test the unique associations among the dimensions of psychopathic traits, aggression, and delinquency, four separate regression analyses were conducted using the three dimensions of psychopathic traits as predictors and the four aggression and delinquency measures as the criterion variables. As would be expected from the zero-order correlations but contrary to predictions, the multiple regression analyses using the APSD scales did not account for significant amounts of variance in the two delinquency measures but accounted for 10 and 7% (both $p < 0.01$) of the variance in the overt and relational aggression measures, respectively. Also contrary to predictions, none of the individual scales accounted for unique variance in the aggression measures, suggesting that much of the variance is accounted for by shared variance among the psychopathic trait dimensions. However, the standardized betas for impulsivity in the prediction of overt ($\beta = 0.20$, $p = 0.06$) and relational aggression ($\beta = 0.19$, $p = 0.07$) approached significance.

The third hypothesis focused on the potential moderating role of gender in the associations among psychopathic traits, aggression, and delinquency. In order to test for the potential moderating effects of gender, a series of two-step hierarchical regression analyses was conducted (Holmbeck, 2002). In each analysis, the psychopathic trait variable (i.e. total, CU traits, narcissism, impulsivity) was centered using the sample mean and was entered with gender at the first step, followed by the addition of a multiplicative interaction term of these two variables at the second step. The test of moderation was whether the addition of the interaction term led to a significant increase in variance explained (change in R^2) in the criterion variables (i.e. overt and relational aggression, violent and nonviolent delinquency). To aid in interpreting these analyses, correlations among psychopathic traits, aggression, and delinquency are reported in Table 3 separately for boys and girls.

Results of these analyses yielded only two significant interactions. For the teacher reports of psychopathic traits, there was a significant interaction between narcissism and gender for predicting relational aggression (change in $R^2 = 0.03$, $p < 0.05$). As indicated in Table 3, narcissism was significantly associated with relational aggression for girls ($r = 0.39$, $p < 0.01$) but not boys ($r = 0.07$). Although this was the only interaction to reach significance, the correlations reported in Table 3 suggest that this pattern was consistent for all of the teacher-reported psychopathic trait variables. That is, consistent with predictions, the correlation between teacher-reported psychopathic traits and relational aggression was statistically significant for girls but not for boys for all four scales from the APSD. In contrast, teacher-reported psychopathic traits showed similar associations with overt aggression for both boys and girls.

For the child-reported psychopathic trait variables, there was a significant interaction between total psychopathic traits and gender in predicting overt aggression (change in $R^2 = 0.03$, $p < 0.01$). As noted in Table 3, there was a significant

Table 3. Association of psychopathic traits with aggression and delinquency for boys and girls

	Aggression				Delinquency			
	Overt		Relational		Violent		Nonviolent	
	B	G	B	G	B	G	B	G
Psychopathic traits—teacher								
Total	0.25*	0.31**	0.08	0.36**	0.07	0.05	0.12	0.05
CU	0.13	0.22*	-0.02	0.25**	0.07	0.01	0.08	0.03
NAR	0.26*	0.29**	0.07	0.39** ^A	0.03	0.09	0.06	0.04
IMP	0.25*	0.29**	0.19	0.30**	0.08	0.02	0.14	0.04
Psychopathic traits—child								
Total	0.50**	0.44** ^A	0.43**	0.41**	0.41**	0.45**	0.35**	0.59**

B = boys ($n = 86$); G = girls ($n = 114$); CU = callous-unemotional; NAR = narcissism; IMP = impulsiv-impulsivity.

^AIndicates a significant interaction with gender in a hierarchical multiple regression analysis.

** $p < 0.01$; * $p < 0.05$.

association between self-reported psychopathic traits and overt aggression for both boys ($r = 0.50$, $p < 0.01$) and girls ($r = 0.44$, $p < 0.01$). However, this interaction suggests that the association was stronger for boys than for girls. Given the difference in mean levels of psychopathic traits for boys and girls, this interaction is better illustrated in Figure 1 by showing mean levels of overt aggression for boys and girls at high (above the mean) and low (below the mean) levels of self-reported psychopathic traits. This figure illustrates the stronger influence of psychopathic traits on mean levels of overt aggression for boys compared with girls. As noted in Table 3, despite the stronger association between psychopathic traits and overt aggression for boys than for girls, self-reported psychopathic traits were significantly associated with aggression and delinquency for both boys and girls. Although it did not reach statistical significance, there was a trend for a stronger association between

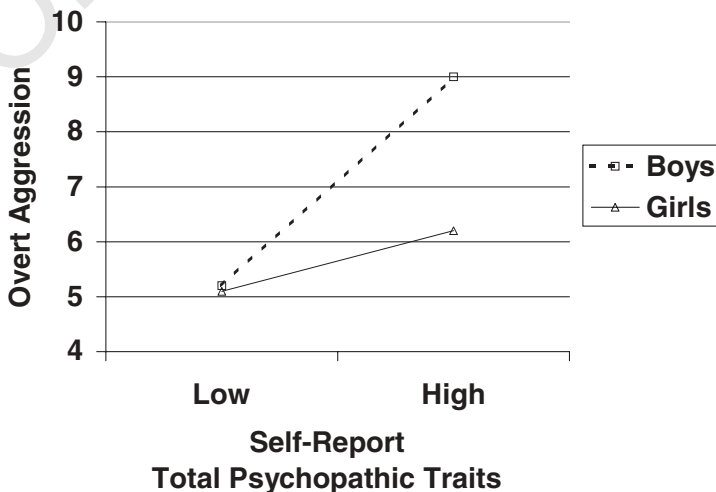


Figure 1. Interaction between self-report of psychopathic traits and gender in predicting overt aggression.

psychopathic traits and nonviolent delinquency for girls ($r = 0.59, p < 0.01$) than for boys ($r = 0.35, p < 0.01$).¹

DISCUSSION

The results of the current study support past research in forensic (e.g. Kruh et al., 2005; Salekin et al., 2004), clinic-referred (e.g. Christian et al., 1997), and high-risk (Frick et al., 2003; Lynam, 1997) samples in suggesting that psychopathic traits are associated with higher rates of aggression and, with some limitations, delinquency in youth. The utility of psychopathic trait ratings was most evident for predicting ratings of aggression, in which both self-report and teacher-report of psychopathic traits were associated with overt and relational aggression. Self-report of delinquency was only associated with self-report of psychopathic traits. Therefore, the associations with delinquency could have been inflated due to shared method variance in using self-report to assess both psychopathic traits and delinquency. Also, the aggression measure showed somewhat greater variability in this unselected sample of youth than the delinquency measure (see Table 1). Thus, correlations with the delinquency measure may have been attenuated somewhat by a restriction in range.

Importantly, predicted differences in which aspects of psychopathy might be most highly associated with antisocial behavior were not supported by these results. That is, the callous-unemotional, narcissism, and impulsivity dimensions seemed to show relatively similar associations with aggression. Further, when studied together, it appeared to be the shared variance in these dimensions that was most strongly associated with aggression. These findings are not consistent with several past studies of children, in which it was the callous-unemotional dimension that seemed to be most important for predicting more severe aggression, conduct problems, and delinquency (Caputo et al., 1999; Christian et al., 1997; Frick et al., 2003). However, these differences in findings could be due to differences in methodology. That is, previous studies have typically used CU traits to differentiate *within* antisocial youth who all show elevated levels of narcissism and impulsivity. Therefore, the higher rates of antisocial behavior may have been due to the combination of CU traits, narcissism, and impulsivity, rather than to the presence of CU traits themselves. It is also possible that the method for measuring psychopathic traits to optimally predict aggression and delinquency in an unselected sample (i.e. combining across dimensions) may not be the same as the method needed for optimally distinguishing subgroups within antisocial samples (i.e. focusing on the presence of CU traits).

¹Although the analyses for the subscales of the self-report APSD are not reported in the main text due to the low internal consistency of these scales, it deserves note that there were differences between the association of the self-report CU scale and both types of delinquency for boys and girls. That is, the self-reported CU scale was associated with both violent ($r = 0.36, p < 0.01$) and nonviolent ($r = 0.36, p < 0.01$) delinquency for girls but not for boys ($r = 0.03$ and 0.00 , respectively). In contrast, the associations with aggression and delinquency were similar for boys and girls for the other dimensions of psychopathic traits according to self-report.

An important focus of this study was to test whether the association between measures of psychopathic traits and measures of aggression and delinquency was the same for both boys and girls. While gender differences in the predictive utility of psychopathy in men and woman have received some scrutiny in adult samples (Nicholls *et al.*, 2004; Vitale & Newman, 2001), potential sex differences in child samples have not been the focus of much research. In this non-referred and ethnically diverse sample, psychopathic traits generally predicted aggression and delinquency for both boys and girls. Contrary to predictions, there were no clear sex differences in which dimensions of psychopathic traits were most strongly associated with aggression and delinquency (although see Footnote 1). However, the predicted differences for the two types of aggression did receive some support. That is, psychopathic traits were somewhat more strongly related to overt aggression in boys than in girls, at least according to self-report (see Figure 1). Further, according to teacher-report, all three psychopathic trait dimensions were associated with relational aggression in girls but not boys. These findings support the contention that relational aggression is an important construct for assessing how girls may harm others, which is often through damaging the relationships of others rather than through physical harm (Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995). If psychopathic traits are viewed as a marker of a distinct causal mechanism that predisposes persons to act aggressively (Frick & Marsee, [in press](#)^{Q2}; Hare, 1999), then the fact that psychopathic traits are more strongly related to overt aggression in boys and relational aggression in girls supports the contention that these are gender-specific manifestations of the same construct. Further, it suggests that future studies of the association between psychopathic traits and aggression in girls and women need to measure both overt and relational forms of aggression.

All of these interpretations need to be made in light of a number of limitations. First and foremost is the cross-sectional nature of the study that makes it impossible to make any type of causal interpretation of the associations among psychopathic traits, aggression, and delinquency. Second, the reliance on a single source of information to assess psychopathic traits is not recommended in most applied settings (Johnstone & Cooke, 2004). We used teacher- and self-report separately to be able to separate the effects of shared informants in predicting self-reported measures of aggression and delinquency. However, combining information across various sources of information is likely to lead to a more valid assessment of psychopathic traits (Frick & Hare, 2001). Third, consistent with past research, the self-report version of the APSD did not lead to internally consistent subscales to assess the individual dimensions of psychopathic traits (Loney *et al.*, 2003; Pardini *et al.*, 2003). As noted previously, despite this low internal consistency, the self-report version has shown theoretically important correlates that are consistent with the construct of psychopathy, such as predicting severity of antisocial behavior (Salekin *et al.*, 2004) and showing associations with deficits in emotional processing (Loney *et al.*, 2003). However, the poor reliability in the current study prevented us from testing the independent contributions of the three dimensions of psychopathic traits using the self-report format. Further, it suggests that the self-report version of the APSD may need to be refined in order to reliably assess the individual dimensions of psychopathic traits.

As noted previously, there have been a number of important concerns raised about extending the construct of psychopathy to children, given the negative

connotations associated with the label and its potential misuse in forensic settings (Seagrave & Grisso, 2002; Steinberg, 2002). Further, there has not been enough research on the ability of measures of psychopathic traits to predict future criminality and violence in youth to warrant its widespread use as a violence risk tool (Edens, Skeem, Cruise, & Cauffman, 2001). Our cross-sectional findings in no way contribute to this literature on the predictive utility of these traits in youth (see Frick et al., [in press](#)^{Q2}). However, this study does add to a growing body of research suggesting that these traits are associated with aggression and delinquency in many different samples of youth and that causal models need to consider the role of these traits in the development of aggressive and antisocial behavior (Frick & Morris, 2004). Further, our findings are consistent with past research suggesting that not only does the association of psychopathic traits with aggression and delinquency seem to be present for both boys and girls, but in some instances it may be stronger for girls. For example, Frick et al. (2003) reported that the presence of CU traits, in the absence of conduct problems, was a stronger predictor of later delinquency for girls than for boys. In the current study, the association between teacher-rated psychopathic traits and self-reported relational aggression was stronger and more consistent in girls than boys. Thus, the study of the construct of psychopathy in girls seems to be important for understanding the development of antisocial and aggressive behavior in girls (Silverthorn & Frick, 1999). Further, the current findings suggest that future research needs to consider gender-specific manifestations of aggression and antisocial behavior when studying psychopathic traits in girls (Crick et al., 1999).

REFERENCES

- Andershed, H. A., Gustafson, S. B., Kerr, M., & Stattin, H. (2002). The usefulness of self-reported psychopathy-like traits in the study of antisocial behaviour among non-referred adolescents. *European Journal of Personality, 16*, 383–402.
- Barry, C. T., Frick, P. J., Grooms, T., McCoy, M. G., Ellis, M. L., & Loney, B. R. (2000). The importance of callous-unemotional traits for extending the concept of psychopathy to children. *Journal of Abnormal Psychology, 109*, 335–340.
- Björkqvist, K., Lagerspetz, K. M. J., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior, 18*, 117–127.
- Blair, R. J. R., Colledge, E., Murray, L., & Mitchell, D. G. V. (2001). A selective impairment in the processing of sad and fearful expressions in children with psychopathic tendencies. *Journal of Abnormal Child Psychology, 29*, 491–498.
- Brandt, J. R., Kennedy, W. A., Patrick, C. J., & Curtin, J. J. (1997). Assessment of psychopathy in a population of incarcerated adolescent offenders. *Psychological Assessment, 9*, 429–435.
- Caputo, A. A., Frick, P. J., & Brodsky, S. L. (1999). Family violence and juvenile sex offending: Potential mediating roles of psychopathic traits and negative attitudes toward women. *Criminal Justice and Behavior, 26*, 338–356.
- Christian, R. E., Frick, P. J., Hill, N. L., Tyler, L., & Frazer, D. R. (1997). Psychopathy and conduct problems in children: II. Implications for subtyping children with conduct problems. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 233–241.
- Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopathy: Towards a hierarchical model. *Psychological Assessment, 13*, 171–188.
- Cooke, D. J., Michie, C., Hart, S. D., & Clark, D. A. (2004). Reconstructing psychopathy: Clarifying the significance of antisocial and socially deviant behavior in the diagnosis of psychopathic personality disorder. *Journal of Personality Disorders, 18*, 337–357.
- Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development, 67*, 2317–2327.

- Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology*, *33*, 579–588.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development*, *66*, 710–722.
- Crick, N. R., Werner, N. E., Casas, J. F., O'Brien, K. M., Nelson, D. A., Grotpeter, J. K., & Markon, K. (1999). Childhood aggression and gender: A new look at an old problem. In D. Bernstein (Ed.), *The 45th Nebraska symposium on motivation: Gender and motivation* (pp. 75–141). Lincoln, NE: Nebraska University Press.
- Edens, J., Skeem, J., Cruise, K., & Cauffman, E. (2001). The assessment of juvenile psychopathy and its association with violence: A critical review. *Behavioral Sciences and the Law*, *19*, 53–80.
- Elliott, D. S., Huizinga, D., & Ageton, S. S. (1985). *Explaining delinquency and drug use*. Beverly Hills, CA: Sage.
- Forth, A. E., Hart, S. D., & Hare, R. D. (1990). Assessment of psychopathy in male young offenders. *Psychological Assessment*, *2*, 342–344.
- Forth, A. E., Kossou, D. S., & Hare, R. D. (2003). *Hare Psychopathy Checklist: Youth Version (PCL-YV)*. Toronto: Multi-Health Systems.
- Frick, P. J., Bodin, S. D., & Barry, C. T. (2000). Psychopathic traits and conduct problems in community and clinic-referred samples of children: Further development of the psychopathy screening device. *Psychological Assessment*, *12*, 382–393.
- Frick, P. J., Cornell, A. H., Barry, C. T., Bodin, S. D., & Dane, H. A. (2003). Callous-unemotional traits and conduct problems in the prediction of conduct problem severity, aggression, and self-report of delinquency. *Journal of Abnormal Child Psychology*, *31*, 457–470.
- Frick, P. J., & Hare, R. D. (2001). *Antisocial Process Screening Device: Technical manual*. New York: Multi-Health Systems.
- Frick, P. J., Lilienfeld, S. O., Ellis, M., Loney, B., & Silverthorn, P. (1999). The association between anxiety and psychopathy dimensions in children. *Journal of Abnormal Child Psychology*, *27*, 383–392.
- Frick, P. J., & Marsee, M. A. (in press^{Q3}). Psychopathy and developmental pathways to antisocial behavior in youth. In C. J. Patrick (Ed.), *Handbook of psychopathy*. New York: Guilford.
- Frick, P. J., & Morris, A. S. (2004). Temperament and developmental pathways to conduct problems. *Journal of Clinical Child and Adolescent Psychology*, *33*, 54–68.
- Frick, P. J., Stickle, T. R., Dandreaux, D. M., Farrell, J. M., & Kimonis, E. R. (in press^{Q3}). Callous-unemotional traits in predicting the severity and stability of conduct problems and delinquency. *Journal of Abnormal Child Psychology*.
- Gendreau, P., Goggin, C., & Smith, P. (2002). Is the PCL-R really the “unparalleled” measure of offender risk? A lesson in knowledge accumulation. *Criminal Justice and Behavior*, *29*, 397–426.
- Hare, R. D. (1991). *Hare Psychopathy Checklist—Revised*. Toronto: Multi-Health Systems.
- Hare, R. D. (1999). Psychopathy as a risk factor for violence. *Psychiatric Quarterly*, *70*, 181–197.
- Hare, R. D. (2003). *Hare Psychopathy Checklist—Revised (PCL-R): Second edition, technical manual*. Toronto: Multi-Health Systems.
- Hemphill, J. F., Hare, R. D., & Wong, S. (1998). Psychopathy and recidivism: A review. *Legal and Criminological Psychology*, *3*, 139–170.
- Holmbeck, G. N. (2002). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. *Journal of Pediatric Psychology*, *27*, 87–96.
- Johnstone, L., & Cooke, D. J. (2004). Psychopathic-like traits in childhood: Conceptual and measurement concerns. *Behavioral Sciences and the Law*, *22*, 103–125.
- Krueger, R. F., Schmutte, P. S., Caspi, A., Moffitt, T. E., Campbell, K., & Silva, P. A. (1994). Personality traits are linked to crime among men and women: Evidence from a birth cohort. *Journal of Abnormal Psychology*, *103*, 328–338.
- Kruh, I. P., Frick, P. J., & Clements, C. B. (2005). Historical and personality correlates to the violence patterns of juveniles tried as adults. *Criminal Justice and Behavior*, *32*, 69–96.
- Loney, B. R., Frick, P. J., Clements, C. B., Ellis, M. L., & Kerlin, K. (2003). Callous-unemotional traits, impulsivity, and emotional processing in antisocial adolescents. *Journal of Clinical Child and Adolescent Psychology*, *32*, 66–80.
- Lynam, D. R. (1997). Pursuing the psychopath: Capturing the fledgling psychopath in a nomological net. *Journal of Abnormal Psychology*, *106*, 425–438.
- Moretti, M. M., Holland, R., & McKay, S. (2001). Self-other representations and relational and overt aggression in adolescent girls and boys. *Behavioral Sciences and the Law*, *19*, 109–126.
- Nicholls, T. L., Ogloff, J. R. P., & Douglas, K. S. (2004). Assessing risk for violence among male and female civil psychiatric patients: The HCR-20, PCL: SV, and VSC. *Behavioral Sciences and the Law*, *22*, 127–158.
- Pardini, D. A., Lochman, J. E., & Frick, P. J. (2003). Callous/unemotional traits and social cognitive processes in adjudicated youth. *Journal of the American Academic of Child and Adolescent Psychiatry*, *42*, 364–371.

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6 Salekin, R. T., Leistico, A. R., Neumann, C. S., DiCicco, T. M., & Duros, R. L. (2004). Psychopathy
7 and comorbidity in a young offender sample: Taking a closer look at psychopathy's potential
8 importance over disruptive behavior disorders. *Journal of Abnormal Psychology, 113*, 416–427.
- 9 Salekin, R. T., Rogers, R., & Sewell, K. W. (1997). Construct validity of psychopathy in a female offender
10 sample: A multitrait-multimethod evaluation. *Journal of Abnormal Psychology, 106*, 576–585.
- 11 Salekin, R. T., Rogers, R., Ustad, K. L., & Sewell, K. W. (1998). Psychopathy and recidivism among
12 female inmates. *Law and Human Behavior, 22*, 109–128.
- 13 Seagrave, D., & Grisso, T. (2002). Adolescent development and the measurement of juvenile psycho-
14 pathology. *Law and Human Behavior, 26*, 219–239.
- 15 Silverthorn, P., & Frick, P. J. (1999). Developmental pathways to antisocial behavior: The delayed-onset
16 pathway in girls. *Development and Psychopathology, 11*, 101–126.
- 17 Steinberg, L. (2002). The juvenile psychopath: Fads, fictions, and facts. *National Institute of Justice*
18 *Perspectives on Crime and Justice* (Vol. V). Washington, DC: National Institute of Justice.
- 19 Vitacco, M. J., Rogers, R., & Neumann, C. S. (2003). The Antisocial Process Screening Device: An
20 examination of its construct and criterion-related validity. *Assessment, 10*, 143–150.
- 21 Vitale, J. E., & Newman, J. P. (2001). Response perseveration in psychopathic women. *Journal of*
22 *Abnormal Psychology, 110*, 644–647.
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