
The Relation of Psychopathy to Concurrent Aggression and Antisocial Behavior in High-Risk Adolescent Girls and Boys[†]

Stephanie R. Penney, M.A.* and Marlene M. Moretti, Ph.D.[‡]

The present study examined the concurrent relationship between psychopathy characteristics as measured by the PCL:YV and aggressive and antisocial behavior in a sample of 142 high-risk adolescent girls and boys. The unique relationship between each of three PCL:YV factors (Arrogant and Deceitful Interpersonal Style, Deficient Affective Experience, and Impulsive and Irresponsible Behavioral Style) and outcomes was evaluated to determine which aspects of psychopathy are most crucially linked to aggressive and antisocial behavior in adolescents. Dependent measures were expanded to include both relational and physical forms of aggression to better capture meaningful outcomes for girls and boys. Regression analyses showed that the relationships between psychopathic features and outcomes were equivalent for boys and girls, and that deficits in affect were most consistently associated with aggression. These findings are concordant with the well established finding in developmental research showing that deficits in empathy and affect regulation are associated with aggression. Copyright © 2006 John Wiley & Sons, Ltd.

INTRODUCTION

Over the past decade, adolescent girls have become a prime focus of violence-related research and programming due to significant increases in rates of official violent offending (Puzzanchera, Stahl, Finnegan, Tierney, & Snyder, 2003; Statistics

*Correspondence to: Stephanie R. Penney, Department of Psychology, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia, Canada V5A 1S6. E-mail: spenney@sfu.ca

[†]This research was supported by a Natural Sciences and Engineering Research Council postgraduate scholarship awarded to Stephanie Penney and a Canadian Institutes of Health Research New Emerging Team Grant awarded to Dr. Marlene Moretti (54020).

[‡]Stephanie R. Penney and Marlene M. Moretti, Department of Psychology, Simon Fraser University.

Contract/grant sponsor: Natural Sciences and Engineering Research Council.

Contract/grant sponsor: Canadian Institutes of Health Research; contract/grant number: 54020.

Canada, 2003) and entry into juvenile detention facilities (Porter, 2000). Arrests of female adolescents in the U.S. for violent offenses doubled from 1983 to 1992 (Girls Incorporated, 1996; Hoyt & Scherer, 1998), with the most substantial increases witnessed in charges for simple assault, including assault with a weapon and assault causing bodily harm. In Canada, the rate of violent offending among girls has continued to increase over the past five years while the corresponding rate for boys has dropped since the mid-1990s (Statistics Canada, 2003). Similarly, data from self-report measures show that the gap between girls and boys' rate of engagement in violent behaviors is closing (Maguire & Pastore, 1999; U.S. Department of Health and Human Services, 2001).

Although boys continue to outnumber girls as the perpetrators of severe acts of aggression and violence (Chesney-Lind & Sheldon, 1998; Elliott & Ageton, 1980; Savioe, 2000), the absolute number of antisocial girls is increasing, along with the associated costs to society that result from their behavior (Silverthorn & Frick, 1999). While research on the etiology, developmental course, and manifestation of aggression in girls is rapidly progressing (Holsinger & Holsinger, 2005; Moretti, Catchpole, & Odgers, 2005; Moretti, Odgers, & Jackson, 2004; Underwood, 2003), knowledge about the factors that cause or maintain aggressive behaviors in girls still lags behind what is known for boys. Some theorists argue that well established risk factors for aggression in boys are likely pertinent for girls; however, it is also probable that there exist unique risk factors associated with female aggression as well as differences in the strengths of these predictors (Chesney-Lind & Sheldon, 1998; Funk, 1999; Giordano & Cernkovich, 1997). Others have questioned whether classic distinctions between different developmental trajectories to aggression and conduct disorder apply equally well to girls and boys (Loeber & Stouthamer-Loeber, 1998; Silverthorn & Frick, 1999). Although Moffitt (1993) argued that the distinction between early-onset, Life Course Persistent (LCP) and Adolescent Limited (AL) profiles is equally applicable to males and females, others have suggested that a "delayed adolescent onset" pattern in girls is equivalent to the early-onset pattern shown in boys, since these boys and girls show a comparably negative prognosis and stability of course (Silverthorn & Frick, 1999).

Consistent with the notion that aggression is a multi-dimensional construct, experts have found reliable and substantial gender differences in the manifestation of aggressive behavior (e.g. Crick, 1995; Eme & Kavanaugh, 1995). Compared to boys, girls typically engage in fewer acts of physical aggression and more acts of relational, interpersonal, and social forms of aggression (e.g. acts that are intended to damage others' friendships or feelings of acceptance in a peer group; Bjorkvist, Lagerspertz, & Kaukiainen, 1992; Crick, 1995). However, more recent studies suggest that girls and boys engage in comparable amounts of social and relational aggression, although boys consistently show higher levels of physical aggression than girls (Crick, 1997; Underwood, 2003). When aggression is parsed into physical, verbal, direct, and indirect components, the most consistent and substantial gender difference to emerge is that males engage in more physical and direct forms of aggression, while the differences are less reliable for verbal and indirect forms (Archer, 2004). Generally speaking, gender differences in the expression and manifestation of aggression are important to recognize since diverse risk factors are likely related to different forms of aggression.

Despite this, research assessing gender differences in the relative importance of classic risk factors for aggression and antisocial behavior remains incomplete. For

instance, psychopathy is a construct that has received much attention as a robust indicator of risk for violence in adult males (Harris, Rice, & Cormier, 1991; Hemphill, Hare, & Wong, 1998; Salekin, Rogers, & Sewell, 1996), and more recently, adolescent populations (Corrado, Vincent, Hart, & Cohen, 2004; Gretton, Hare, & Catchpole, 2004; Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002). However, despite psychopathy's status as a potent marker of risk, there is a notable lack of research on gender differences in the relation of psychopathic characteristics to aggression and violence. This study is designed to reduce this gap in the literature by investigating how psychopathic features are linked to aggression and antisocial behavior in adolescents, and how this relationship may differ for young males and females.

Gender Differences in Psychopathy and Risk for Violence

At its most basic level, psychopathy is conceptualized as a personality syndrome that encompasses a constellation of affective, interpersonal, and behavioral characteristics, such as a callous disregard for others, a lack of empathy, and a propensity to highly impulsive and irresponsible behavior (Hare, 1991, 2003). Despite the construct's utility as an indicator of risk for future violence, few studies have explicitly examined gender differences in the expression and relation of psychopathy to aggression, violence, or non-violent criminal behavior. Recent studies suggest that the manifestation of psychopathy may change as a function of age and gender, calling for a modified conceptualization and measurement of the construct in non-adult and female populations (see, e.g., in adolescent males, Edens, Skeem, Cruise, & Cauffman, 2001; Vincent, unpublished dissertation; in adolescent females, Salekin, Rogers, & Machin, 2001; in adult women, Jackson, Rogers, Neumann, & Lambert, 2002; Salekin, Rogers, Ustad, & Sewell, 1998).

The PCL instruments (i.e. the Hare Psychopathy Checklist, Revised [PCL-R; Hare, 1991, 2003] and its recently developed youth version [PCL:YV; Forth, Kosson, & Hare, 2003]) have long been regarded as the gold standard in the assessment and measurement of psychopathy. These tools assume a "gender neutral" view of psychopathy; that is, the major factors underpinning psychopathy (i.e. the interpersonal, affective, and behavioral features) are believed to manifest similarly and contribute equally to the overall syndrome in both males and females. However, this is an empirical question that has yet to be convincingly addressed in the literature. Indeed, evidence to the contrary has been reported by Salekin and colleagues (Salekin, Rogers, & Sewell, 1997; Salekin et al., 1998), who found that psychopathy in females is best conceptualized and assessed in terms of the affective and interpersonal characteristics rather than overt antisocial behaviors. These investigators, among others (Jackson et al., 2002; Vitale, Smith, Brinkley, & Newman, 2002; Warren et al., 2003), suggest that affective characteristics such as callousness, unemotionality, and a lack of empathy are more relevant for assessing female psychopathy than are the behavioral criteria, and that consequently the equal weighting of interpersonal, affective, and behavioral-based items in the PCL may artificially lower prevalence rates of psychopathy found among female samples. Perhaps more importantly, the PCL instruments may not be sufficiently sensitive in detecting those traits that are associated with female psychopathy, and which may

serve to uniquely predispose females to aggressive and violent behavior (Odgers, Moretti, & Reppucci, 2005; Verona & Vitale, 2006).

Research is therefore beginning to suggest that a “one size fits all” measure of psychopathy will be limited when applied to female populations. But why might we expect gender differences in the expression of psychopathy to exist in the first place? Societal norms and expectations may serve to inhibit overt antisocial behaviors in women leading to a restriction of range in this domain. Furthermore, some researchers have suggested that a higher level of psychopathic personality characteristics may be a prerequisite for females to break gender-specific norms and engage in aggressive or violent activities with a minimal amount of anxiety or remorse arising from their behaviors (Broidy, Cauffman, Espelage, Mazerolle, & Piquero, 2003; Verona & Vitale, 2006). Together, these hypotheses imply that the assessment of personality-based characteristics of psychopathy—such as an egocentric, callous, and manipulative interpersonal style—rather than behavioral features may more sensitively detect psychopathy in females. It will be important to appreciate, however, that if different dimensions of psychopathy carry more significance in female populations and are differentially associated to aggression and criminality across gender, this will have significant implications for the assessment of psychopathy and risk for violence in female populations (Edens et al., 2001).

Juvenile Psychopathy

Given that psychopathy is a robust predictor of persistent and chronic violent offending in adult males (Harris et al., 1991; Hemphill et al., 1998; Salekin et al., 1996), the early identification of psychopathic characteristics in children and adolescents has become a strong interest of researchers and clinicians since it may offer an important first step toward prevention (Salekin, 2002). At the same time, significant concerns have been raised about limitations in research and ethical dilemmas related to the application of what is generally viewed as a stable adult personality syndrome to developing youth (Edens et al., 2001; Hart, Watt, & Vincent, 2002; Seagrave & Grisso, 2002). Experts have pointed out that some indicators of psychopathy involve signs and processes that are common characteristics of adolescents (Edens et al., 2001; Frick, 2002; Seagrave & Grisso, 2002), and therefore should not be pathologized to the extent that they would be in adults. These issues are even more concerning when considering the situation of female youth, for whom limited evidence exists to support the validity of psychopathic features in relation to violence and aggression.

Although the PCL:YV manual states that “PCL:YV Total scores do not appear to be unduly influenced by the youth’s age, ethnicity or gender” (Forth et al., 2003, p. 51), the vast majority of studies supporting the validity and general utility of the PCL:YV to date have utilized all-male samples. When females are included in the sample (six studies to date; for a review see Forth et al., 2003), analyses are not performed separately by gender due to inadequate power (samples ranged from $n = 11$ to 80). In fact, only one published study to date has investigated the validity and reliability of the PCL:YV in a large sample of adolescent females ($N = 125$; Odgers, Reppucci, & Moretti, 2005), and no studies have explicitly compared males and females in terms of how psychopathic features manifest themselves and relate to

relevant outcomes. Studies using the PCL:YV with all-male samples have generally supported the concurrent and predictive validity of psychopathic features, by showing, for example, that youth with higher scores on the PCL:YV engage in aggressive and delinquent behaviors more often (Forth & Burke, 1998; Kosson et al., 2002), and tend to recidivate violently, more frequently, and in a shorter period of time compared to low-scoring youth (Catchpole & Gretton, 2003; Corrado et al., 2004; Gretton et al., 2004). Notably, in the latter study by Gretton and colleagues (2004), scores on the PCL:YV (coded from archival information) were shown to contribute to the prediction of violent offending over a 10-year retrospective follow-up period once the effects of prior violence, conduct disorder symptoms, and age at first offense were accounted for. Scores on an earlier version of the PCL:YV have also been associated with aggression and violence in inpatient psychiatric samples (Stafford & Cornell, 2003) as well as community samples (Toupin, Mercier, Déry, Côté, & Hodgins, 1996), helping to substantiate the validity of the psychopathy construct in non-forensic samples.

Despite these promising findings, recent research with girls is calling attention to what are likely significant flaws in the structural properties and predictive utility of psychopathic features in young females (Odgers, Reppucci, et al., 2005). These investigators were unable to replicate the established factor structures for the PCL:YV that appear in the literature (i.e. the three-factor and two-factor/four-facet models; Cooke & Michie, 2001; Hare, 2003) in a sample of incarcerated adolescent females. Although they found that PCL:YV scores were related to concurrent engagement in aggression, this relationship was no longer significant once the effects of abuse and victimization experiences were accounted for. These authors caution against the use of the PCL:YV in girls, and effectively prohibit the simplistic extension of research findings gathered from adolescent males to females.

Another important limitation of previous studies using the PCL:YV is the failure of researchers to regularly assess the unique relationship between the different facets and factors that together form the construct of psychopathy. It is not clear, for example, that interpersonal, affective, or behavioral characteristics of psychopathy are equally important in their relationships to aggression and violence in adolescent samples. One exception in this regard is a recent study by Corrado and colleagues (2004), which used sequential stepwise Cox regression analyses to assess the main effects of each PCL:YV factor as well as the interaction among the factors in predicting general and violent recidivism in an all-male sample. Findings from this study suggested that the behavioral characteristics of psychopathy accounted for the bulk of the PCL:YV's power in predicting general recidivism, while the interaction among all three factors contributed in predicting violent recidivism. Although these findings lend some support to the structural and predictive validity of the PCL:YV, additional research is required to determine whether the different facets of psychopathy relate to aggression and violence in a similar manner for adolescent girls and boys. This is one goal of the current study.

Prior research has also restricted itself to assessing the relation between psychopathy characteristics and traditional measures of aggression despite research that suggests gender differences in the manifestation and expression of aggressive behavior (e.g. Crick, 1995; Eme & Kavanaugh, 1995). As outlined above, girls typically engage in fewer acts of physical aggression than do boys, but they are no less likely to engage in acts of relational aggression (Bjorkvist et al., 1992; Crick, 1995).

Examining the relationship between psychopathic characteristics and non-physical forms of aggression extends prior studies and provides a stronger context in which to assess gender differences.

In sum, the present study introduces a higher degree of specificity lacking in prior studies on psychopathic features in adolescents: first, both boys and girls are included in the sample and are explicitly compared; second, specific facets of psychopathy, in addition to the construct as a whole, are examined in their relationship to aggression and antisocial behavior; and third, an expanded range of outcomes including non-violent offending and relational forms of aggression is included so that gender differences in the relation of psychopathy characteristics to diverse forms of antisocial behavior can be assessed.

METHOD

Participants

Participants were 142 adolescents (76 males, 66 females) between the ages of 12 and 18 drawn from custody centers (61%), provincial assessment centers (36%), and probation offices (2%) around British Columbia's lower mainland. Every new female admission to the custody and assessment centers was approached to participate in the study and a comparable male sample was secured by matching participants on age. At the time that the analyses for the current study were completed, the sample consisted of slightly unequal numbers of males and females as the data collection and matching was still ongoing. Exclusion criteria included (a) IQ below 70 or (b) any significant axis I affective or psychotic symptomatology. The final sample consisted of adolescents who were actively involved in the criminal justice system and/or who had been diagnosed as having severe conduct disorder and behavioral problems. Of the 142 participants, information regarding clinical diagnoses of behavioral and emotional disorders was available for 101 cases. Of this group, 59% met the criteria for conduct disorder (61% of boys and 58% of girls). The mean age of participants in the current sample was 15.55 (SD = 1.62), with male participants having a mean age of 15.86 years (SD = 1.70) and females having a mean age of 15.20 (SD = 1.45). This difference was significant, $F(1, 140) = 6.06$, $p < 0.05$, although small in magnitude. Incarcerated youth were also significantly older ($M = 16.18$, $SD = 1.48$) than were youth in the mental health assessment setting ($M = 14.55$, $SD = 1.30$), $F(1, 140) = 45.44$, $p < 0.001$. Most youth were Caucasian (63%); the remaining youth were Aboriginal (22%), mixed Caucasian and Aboriginal (5%), and of other (10%) ethnicity.

A series of chi-square likelihood analyses was conducted to assess the demographic characteristics of girls and boys (e.g. ethnicity, percentage in custody placements, percentage in mental health placements). There was a significantly higher proportion of Aboriginal females (31%) than males (15%) in the sample, $\chi^2(1, n = 141) = 5.42$, $p < 0.05$. Additionally, more males were gathered from custody centers ($n = 53$) than from the mental health assessment facility ($n = 23$), while approximately equal numbers of females were gathered from both custody and mental health settings ($n = 34$ and 32 , respectively). When gender and location (custody, mental health) were analyzed in a 2×2 chi-square table, the statistic was

significant, $\chi^2(1, N = 142) = 4.94, p < 0.05$, reflecting the fact that significantly more males than females were recruited from the custody centre. Due to this gender disparity across research site, regression analyses were conducted (see below) to ensure that the relationships between the PCL:YV and the study's criterion measures were comparable across the two research sites, and that site was not confounded with gender as a potential moderator variable in these relationships.

Procedure

The present study is part of a larger longitudinal research project investigating the risk factors and developmental paths to aggression and violence in girls. Ethical approval was granted for this project under the ethics review board at Simon Fraser University, as well as from the research committees at all of the data collection sites. Youth agreeing to participate in the project completed individual assessments comprised of semi-structured clinical interviews, computerized diagnostic assessments, and a battery of self-report measures. Participants were compensated either \$30 (residential and outpatient youth) or were provided with snacks during testing and \$10 upon completion of the protocol (incarcerated youth). All sessions were digitally audio taped, and informed consent was obtained from both the youth and his or her legal guardian before beginning the testing sessions. Confidentiality was ensured by using participant identification numbers on all of the testing materials.

Clinical interviews lasting approximately 60–90 minutes were conducted by three graduate students who had received formal training in the administration and coding of the PCL:YV. The interview touched on a range of areas including the youth's educational history, work history and occupational goals, suicidal ideation, family and peer relationships, aggression and criminal activity, affect, and mood. Collateral sources of information, including developmental and social histories, pre-sentencing and disposition reports, and psychological assessments, were coded as well.

Measures

Psychopathy Checklist, Youth Version (PCL:YV; Forth et al., 2003)

The PCL:YV is a 20-item symptom construct rating scale designed to measure the same interpersonal, affective, and behavioral dispositions as does its parent measure, the PCL-R, in youth. Each item is scored on a three-point scale, with scores of zero (consistently absent), one (inconsistent), or two (consistently present) for each component reflecting inferences about the stability of a specific tendency or disposition across situations. Items are summed to yield a total score ranging from 0 to 40, with higher scores reflecting the increased presence of psychopathic features. The scoring guidelines for the PCL:YV have been modified to reflect the different expressions of psychopathic characteristics in adolescents of varying ages (Kosson et al., 2002), and require the examiner to compare a youth's behavior to other youth of the same chronological age.

Psychometric properties of the PCL:YV are similar to the PCL-R and include adequate levels of internal consistency and item homogeneity in samples of adolescent males (alpha range = 0.75–0.89; Brandt, Kennedy, Patrick, & Curtin,

Table 1. PCL:YV two-factor/four-facet and three-factor models

Test item	2 factor/4 facet Factor, facet	3 factor Factor	
1. Impression Management	1, 1	1	
2. Grandiose Sense of Self-Worth	1, 1	1	
3. Stimulation Seeking	2, 3		3
4. Pathological Lying	1, 1	1	
5. Manipulation for Personal Gain	1, 1	1	
6. Lack of Remorse	1, 2		2
7. Shallow Affect	1, 2		2
8. Callous/Lacking Empathy	1, 2		2
9. Parasitic Orientation	2, 3		3
10. Poor Anger Control	2, 4		
11. Impersonal Sexual Behavior			
12. Early Behavioral Problems	2, 4		
13. Lacks Goals	2, 3		3
14. Impulsivity	2, 3		3
15. Irresponsibility	2, 3		3
16. Failure to Accept Responsibility	1, 2		2
17. Unstable Interpersonal Relationships			
18. Serious Criminal Behavior	2, 4		
19. Serious Violations of Conditional Release	2, 4		
20. Criminal Versatility	4		

For the two-factor/four-facet model, factor 1 = *Callous/Deceitful*, factor 2 = *Conduct Problems*, facet 1 = *Interpersonal*, facet 2 = *Affective*, facet 3 = *Behavioral*, facet 4 = *Antisocial*. For the three-factor model, 1 = *Arrogant and Deceitful Interpersonal Style*, 2 = *Deficient Affective Experience*, and 3 = *Impulsive and Irresponsible Behavioral Style*.

1997; Forth, Hart, & Hare, 1990), as well as good to excellent levels of inter-rater reliability (0.81–0.98; Hume, Kennedy, Patrick, & Partyka, 1996; Toupin et al., 1996). Using intra-class correlation coefficients for a two-way random effects model for absolute groups, the ICC₁ was satisfactory for PCL:YV total score based on file-only training cases (0.87; $n = 5$). For interview cases ($n = 28$), the ICC₁ for PCL:YV total score was 0.96. For the factor scores, the coefficients ranged as follows: Factor 1 = 0.93, Factor 2 = 0.90, and Factor 3 = 0.84.¹

Items on the PCL:YV are purported to retain the same two-factor structure as the PCL-R (i.e. with Factor 1 representing the interpersonal and affective features of psychopathy and Factor 2 encompassing the antisocial behaviors), although several confirmatory factor analyses have indicated that this model does not provide an adequate fit to youth data (Kosson et al., 2002). More recently, results from confirmatory factor analyses published in the PCL:YV manual (Forth et al., 2003) identified both the three-factor (Cooke & Michie, 2001) and two-factor/four-facet (Hare, 2003) models of psychopathy as acceptable test structures in youth samples (see Table 1 for a description of these models).

Analysis for the current study was guided by the hierarchical three-factor model of psychopathy (Cooke & Michie, 2001). This model posits a superordinate factor, Psychopathy, with three separate subfactors: Arrogant and Deceitful Interpersonal

¹Prior to entering the field, each of the three interviewers completed a PCL:YV training session and rated five 'file-only' PCL:YV cases, which had been previously rated by six experts in the field. Individual feedback was then provided to each rater. Inter-rater agreement for the PCL:YV interviews was computed based on paired ratings of 28 cases.

Style (ADI—Factor 1), Deficient Affective Experience (DAE—Factor 2), and Impulsive and Irresponsible Behavioral Style (IIB—Factor 3). In contrast to Hare's (1991, 2003) traditional two-factor model, the model by Cooke and Michie disaggregates the affective and interpersonal traits into two separate dimensions (i.e. ADI and DAE), thereby allowing for more refined hypotheses to be tested regarding the relationships between psychopathic features and relevant outcomes. This model also excludes some items related to aggressive and antisocial behavior (resulting in a 13-item measure), thereby reducing to some extent the degree of criterion–predictor contamination. All three factors of this model were investigated in the present study in order to assess and compare those dimensions of psychopathy posited to be most central to the construct (i.e. interpersonal, affective, and behavioral). As was noted above, few studies have simultaneously assessed the unique effects of each dimension in terms of how they each relate to outcomes of interest.

Criterion Measures: Aggression, Violence & Delinquency

Little's Aggression Inventory (LAI-25; Little, Jones, Heinrich, & Hawley, 2003)

The LAI contains six subscales designed to differentiate manifest forms of aggression (overt and relational aggression) among specific quadrants of aggression (i.e. pure overt, overt reactive, overt instrumental, pure relational, relational reactive, relational instrumental). Items on the LAI are based directly on other published measures of overt and relational (Crick, 1997; Crick & Grotpeter, 1995) as well as reactive and instrumental aggression (Dodge & Coie, 1987). Based on the high factor loadings reported by Little (2003), 25 items were extracted from the original measure to form two overarching composite scores (i.e. “overt” and “relational”), encompassing both “pure” forms of overt and relational aggression (e.g. “I’m the kind of person who hits, kicks, or punches others”, “I’m the kind of person who tells my friends to stop liking someone”), as well as overt and relational aggression that is driven by reactive and instrumental motives (e.g. “When I am hurt by someone, I often fight back”, “To get what I want, I often ignore or stop talking to others”). All items are scored on a four-point scale ranging from “not true at all” to “completely true”. The alpha coefficient for the entire scale was 0.95 (0.93 and 0.91 for overt and relational aggression, respectively). Little and colleagues (2003) reported acceptable levels of internal validity (r_{xx} ranging from 0.62 for pure relational aggression to 0.84 for overt instrumental aggression), as well as satisfactory external and criterion validity for the scale, which was shown to generalize across age-cohort (ages 11–16), gender, and ethnicity.

Self-Report of Offending, Revised (SRO-R)

The Self-Report of Offending (Huizinga, Esbensen, & Weiher, 1991) was adapted for use in this study based on the more widely studied Self-Report of Delinquency (see Huizinga & Elliot, 1986; Piquero, MacIntosh, & Hickman, 2002). The scale has been shown to produce results concordant with official measures of delinquency (Elliott, Dunford, & Huizinga, 1987), and demonstrates functional invariance across gender and ethnicity (Knight, Little, Losoya & Mulvey, 2004). The current measure

included 15 items, largely comparable to those found in large-scale high-risk and normative studies, assessing lifetime and current involvement in violent (e.g. assault and weapons charges) and non-violent (e.g. narcotics and property crimes) offenses.

The Conflict Tactics Scale, Revised (CTS-R; CTS; Straus, 1979; CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996)

The revised CTS taps reports of aggression that have been both perpetrated by and inflicted upon the individual by mothers, fathers, peers, and romantic partners. Items include both verbal and physical forms of aggression (e.g. “Insulted or put down a friend”, “Insulted by or put down by a friend”; “Slapped mother/father”, “Slapped by mother/father”). Each item is rated on a four-point scale ranging from 1—“Never” to 4—“Always”. The CT scales (Straus et al., 1996) were shown to have moderate to high levels of internal consistency and reliability (alphas ranging from 0.79 to 0.95), as well as acceptable levels of validity for research purposes (Straus, 1979). For the purposes of the current study, “perpetration indices” measuring the frequency of aggression perpetrated by the youth in the past six months were calculated for each of the relationships assessed by the CTS (i.e. mother, father, peer, and romantic). In addition, binary (yes/no) variables were created to reflect whether a youth had ever engaged in aggression towards a parent, peer, or romantic partner.

RESULTS

Psychopathic Characteristics

Mean PCL:YV scores for the entire 20-item instrument ranged from 4 to 37 ($M = 22.17$, $SD = 7.31$) and were normally distributed (see Table 2). These values are largely consistent with other published studies utilizing the PCL:YV in samples of youth on probation or in custody (e.g. Corrado et al., 2004; Forth et al., 2003; Kosson et al., 2002), and are within the same range as mean scores typically seen in samples of incarcerated youth in the U.S. (i.e. 24; Brandt et al., 1997; Forth et al., 2003). For the 13-item, three-factor model, mean total scores ranged from 2 to 25 ($M = 14.12$, $SD = 4.73$). Factor scores averaged 3.47 ($SD = 1.78$) for the Arrogant/Deceitful Interpersonal Style factor (factor 1), 4.30 ($SD = 2.00$) for the Deficient Affective Experience factor (factor 2), and 6.35 ($SD = 2.06$) for the Impulsive and

Table 2. Means and standard deviations for PCL:YV total and factor scores

Sample	<i>n</i>	Factor 1	Factor 2	Factor 3	Total score
Males	71	3.86 _a (1.91)	4.80 _a (1.76)	6.65 (2.20)	24.10 _a (7.19)
Females	56	2.98 _b (1.48)	3.66 _b (2.11)	5.96 (1.82)	19.73 _b (6.77)
Incarcerated	78	3.63 (1.90)	4.81 _a (1.91)	7.06 _a (1.95)	25.41 _a (6.24)
Residential	49	3.22 (1.56)	3.49 _b (1.87)	5.20 _b (1.70)	17.20 _b (5.82)
Total sample	127	3.47 (1.78)	4.30 (2.00)	6.35 (2.06)	22.17 (7.31)

Means in the same column that do not share subscripts differ at $p < 0.01$ (a, b).

Irresponsible Behavioral Style factor (factor 3). Girls had slightly lower mean total and factor scores (with the exception of factor 3) as compared to boys. Incarcerated youth evidenced higher PCL:YV total and factor scores (with the exception of factor 1) compared with youth in the mental health assessment center. The alpha coefficient for the entire 20-item scale was 0.87 (males = 0.87, females = 0.84). For the individual factors, $\alpha = 0.66$ for factor 1 (males = 0.71, females = 0.50), 0.71 for factor 2 (males = 0.65, females = 0.74), and 0.66 for factor 3 (males = 0.74, females = 0.50).

Aggression Measures: LAI-25 and CTS-R

For the total sample, the mean level of overt aggression as measured by the LAI-25 was 23.43 (SD = 8.15; min. = 12, max. = 48), while the mean level of relational aggression reported was 20.95 (SD = 6.95; min. = 13, max. = 52). Male and female youth had comparable mean scores on the overt ($M = 24.07$ and 22.68 , respectively) and relational ($M = 20.35$ and 21.67 , respectively) aggression subscales, while youth in custody (males and females) reported higher mean levels of overt aggression compared to youth in the assessment facility ($M = 24.69$ and 21.48 , respectively, $p < 0.05$).

Girls had higher mean levels of aggression directed towards their mothers and romantic partners, whereas boys showed higher levels of peer directed aggression ($p < 0.05$). Chi-square analyses were conducted on the binary variables reflecting whether a youth had ever engaged in aggression towards a parent, peer, or romantic partner. Results from these analyses indicated that a higher proportion of girls reported ever aggressing against a romantic partner as compared with boys, $\chi^2(1, n = 115) = 13.82, p < 0.001$. No other gender differences emerged as significant.

Prevalence of Violent and Non-Violent Delinquency: SRO-R

The vast majority (96%) of the sample reported being involved in at least one violent act in the course of their lives (i.e. a fistfight).² Of a possible seven violent and five non-violent offenses, compared to males, females reported engaging in fewer types of violent ($M = 2.23$ versus $M = 3.22$ for males) but not non-violent ($M = 2.25$ versus $M = 2.83$ for males) offenses ($p = 0.01$ for violent offending). Similarly, youth in custody (males and females) reported engaging in a greater variety of violent ($M = 3.65$) and non-violent ($M = 3.55$) offenses committed compared to youth in the mental health facility ($M = 1.50$ and 1.15 , respectively, $p < 0.001$).

Hierarchical multiple regression analyses were performed to assess whether the relationship between the PCL:YV and the criterion measures was comparable across the two research sites (logistic regression was run on the binary CTS-R perpetration scores). The interaction term (PCL:YV total score \times site) was non-significant in the prediction of all dependent variables ($p > 0.05$), indicating that the PCL:YV was similarly associated with measures of aggression and antisocial behavior in both the

²Due to a lack of variance on this item it was excluded from further analyses.

custody and mental health youth samples. Therefore, data from the two sites were collapsed for further analyses.

Relationship of Gender and Psychopathy to Aggressive and Antisocial Behavior

Hierarchical multiple regression analyses were completed to assess the main and interaction effects of psychopathy and gender on self-reported aggression and antisocial behavior (see Table 3). In each case, psychopathy scores and gender were entered in the first block followed by the interaction term between these variables in the second block. Standardized beta coefficients (β) are reported for each independent variable (i.e. PCL:YV total and factor scores, gender) representing the strength of association between the independent and dependent variables. Whereas the value of β in bivariate regression is simply the value of the correlation coefficient, in multivariate regressions which include multiple predictor variables, β will reflect the amount of change in the dependent variable (e.g. aggression) with each one-unit change of the independent variable (e.g. PCL:YV total and factor scores, gender), *with all other independent variables in the regression held constant*. In fact, the central value of conducting multiple regression analyses is that they allow for the assessment of unique variance attributable to each one of multiple predictor variables in a regression equation. Additionally, coefficients of determination (R^2) are reported, reflecting the amount of variance in the dependent variable that is accounted for by the regression equation.

Table 3. Hierarchical regression with PCL:YV total score predicting aggression and antisocial behavior

Variable	B	SE B	β
Step 1			
Gender			
LAI-25 Overt	0.85	1.43	0.05
LAI-25 Relational	3.19	1.30	0.22*
SRO-R Violent	-0.08	0.36	-0.02
SRO-R Non-violent	-0.06	0.31	-0.01
PCL:YV			
LAI-25 Overt	0.50	0.10	0.44**
LAI-25 Relational	0.32	0.09	0.32**
SRO-R Violent	0.19	0.02	0.61**
SRO-R Non-violent	0.15	0.02	0.58**
Step 2			
Gender \times PCL:YV			
LAI-25 Overt	0.27	0.20	0.35
LAI-25 Relational	0.21	0.18	0.31
SRO-R Violent	-0.06	0.05	-0.29
SRO-R Non-violent	-0.01	0.04	-0.06

$R^2 = 0.18$, $p < 0.001$ for step 1; $\Delta R^2 = 0.01$, $p > 0.05$ for step 2 (Overt aggression); $R^2 = 0.11$, $p < 0.001$ for step 1; $\Delta R^2 = 0.01$, $p > 0.05$ for step 2 (Relational aggression); $R^2 = 0.37$, $p < 0.001$ for step 1; $\Delta R^2 = 0.01$, $p > 0.05$ for step 2 (Violent offending); $R^2 = 0.34$, $p < 0.001$ for step 1; $\Delta R^2 = 0.00$, $p > 0.05$ for step 2 (Non-violent offending); $R^2 = 0.06$, $p < 0.05$ for step 1; $\Delta R^2 = 0.01$, $p > 0.05$ for step 2 (CTS-R aggression). The N 's range from 118 to 124 due to missing data.

* $p < 0.05$.

** $p < 0.01$.

Beginning with overt aggression, a significant main effect emerged for PCL:YV total score ($\beta = 0.44$, $p < 0.001$), while the psychopathy \times gender interaction term did not significantly contribute to the regression equation. These results show that youth with higher levels of psychopathic characteristics engage in more overt aggression, and that this relationship is comparable for boys and girls. The regression equation predicting relational aggression from PCL:YV total score and gender revealed significant main effects for both psychopathy ($\beta = 0.32$, $p < 0.001$) and gender (female; $\beta = 0.22$, $p < 0.05$), indicating that youth with higher PCL:YV total scores engage in significantly more acts of relational aggression, and that gender (i.e. being female) is associated with higher levels of relational aggression independent of the effects of the psychopathy. The interaction term was non-significant, indicating that psychopathy characteristics predict increased relational aggression similarly for both boys and girls.

Results from regression equations predicting the number of types of violent and non-violent offenses were concordant with these findings: higher levels of psychopathy predicted engagement in more types of violent ($\beta = 0.61$) and non-violent ($\beta = 0.58$) offenses similarly for both boys and girls. With respect to aggression perpetrated in close relationships, results from a series of multivariate logistic regression analyses failed to reveal significant effects for either psychopathy or gender in predicting aggression towards a mother or father figure. In contrast, psychopathy characteristics were significantly related to peer-directed aggression (Wald = 4.58, $p < 0.05$); specifically, higher PCL:YV total scores were associated with increased odds of committing any aggressive act towards a peer (OR = 1.07, 95% C.I. = 1.01, 1.13). Finally, only gender emerged as significantly related to the perpetration of aggression in the context of a romantic relationship (Wald = 16.15, $p < 0.001$). Strikingly, girls were more than seven times more likely to aggress against a romantic partner after the variance associated with psychopathy scores was accounted for (OR = 7.30, 95% C.I. = 2.77, 19.25).

Examining the Differential Predictive Significance of PCL:YV Factor Scores

To investigate how individual PCL:YV factor scores related to aggression and antisocial behavior, a series of hierarchical regressions were performed entering each PCL:YV factor (i.e. factor 1, 2, or 3) and gender as main effects at the first step, and the interaction term between these variables in the second step, for each of the outcome measures. The regression equations predicting aggression from gender and interpersonal style (factor 1) failed to produce significant models, while the equations predicting violent and non-violent offending were significant in the first step of the model, $R^2 = 0.09$, $F(2, 115) = 5.63$, $p < 0.01$ and $R^2 = 0.06$, $F(2, 115) = 3.42$, $p < 0.05$ respectively. However, it should be noted that these coefficients show that only a small proportion of variance (i.e. 9% for violent offending and 6% for non-violent offending) was accounted for by these models. Factor 1 scores showed a significant main effect in the prediction of violent offending only ($\beta = 0.24$, $p = 0.01$).

In contrast, deficits in affect (factor 2) were significantly related to indices of both aggressive and antisocial behavior among this sample of adolescents. Regression

analyses predicting aggressive behavior from gender and factor 2 scores were significant at the first step, $R^2 = 0.15$, $F(2, 121) = 10.47$, $p < 0.001$; $R^2 = 0.09$, $F(2, 121) = 5.99$, $p < 0.01$ for overt and relational aggression, respectively. Similarly, regression analyses predicting violent and non-violent offending were significant at the first step, $R^2 = 0.15$, $F(2, 115) = 9.79$, $p < 0.001$; $R^2 = 0.09$, $F(2, 115) = 6.72$, $p < 0.01$, respectively. Again, however, it is important to place these results in context and acknowledge that a relatively small amount of variance in the dependent variables was accounted for by these regression models (15% for overt aggression and violent offending; 9% for relational aggression and non-violent offending). Significant main effects for factor 2 indicate that deficits in affect were associated with higher levels of overt and relational aggression ($\beta = 0.39$ and 0.29 , respectively, $p < 0.001$) as well as the commission of a greater variety of violent and non-violent offenses ($\beta = 0.34$ and 0.28 , respectively, $p < 0.01$). Interestingly, deficient affect was not associated with an increased likelihood of perpetrating aggression in close relationships. None of the interaction terms between gender and factor 2 scores were significant, implying that the relationship between the affective features of psychopathy and outcome is comparable for males and females.

With respect to the behavioral features of psychopathy (factor 3), youth with an irresponsible and impulsive behavioral style were seen to engage in more acts of overt ($\beta = 0.35$, $p < 0.001$) and relational aggression ($\beta = 0.20$, $p < 0.05$), as well as more types of violent ($\beta = 0.51$, $p < 0.001$) and non-violent ($\beta = 0.51$, $p < 0.001$) offenses. Youth with higher scores on factor 3 were also more likely to have perpetrated acts of aggression towards their peers (OR = 1.25, 95% C.I. = 1.02, 1.53). Gender was not significant in any of these models, nor were there any significant interactions between gender and behavioral style in the prediction of aggression and antisocial behavior.

Assessing the Unique Contributions of Separate PCL:YV Factors

The above analyses examined each PCL:YV factor alone; however, PCL:YV factor scores are correlated and the predicted variance in dependent variables may be shared. The next set of analyses focused on estimating the unique variance accounted for by each PCL:YV factor, controlling for the effects of other factors. As gender did not moderate the relationship between the PCL:YV and outcome, a stepwise regression analysis was performed, entering all three PCL:YV factors in one block and collapsing across gender, to assess the unique contributions of each PCL:YV factor in predicting the study's dependent measures (see Table 4). The affective and behavioral features of psychopathy both entered the model for overt aggression, $R^2 = 0.17$, $F(1, 121) = 12.77$, $p < 0.001$. In contrast, only the affective deficits associated with psychopathy entered the model for relational aggression, $R^2 = 0.05$, $F(1, 122) = 6.47$, $p < 0.01$. For the models predicting the number of offenses a youth had engaged in, only the behavioral features of psychopathy (factor 3) remained in the model, $R^2 = 0.28$, $F(1, 116) = 44.29$, $p < 0.001$ and $R^2 = 0.28$, $F(1, 116) = 44.49$, $p < 0.001$ for violent and non-violent offenses, respectively. When entered simultaneously, none of the factors emerged as indicative of a higher likelihood of aggressing towards a parent, peer, or romantic partner.

Table 4. Stepwise regression with PCL:YV factor scores predicting aggression and antisocial behavior

Variable	<i>B</i>	SE <i>B</i>	β
LAI-25 Overt			
Factor 1	—	—	—
Factor 2	1.11	0.42	0.27*
Factor 3	0.82	0.40	0.20*
LAI-25 Relational			
Factor 1	—	—	—
Factor 2	0.82	0.32	0.22*
Factor 3	—	—	—
SRO-R Violent			
Factor 1	—	—	—
Factor 2	—	—	—
Factor 3	0.59	0.09	0.53**
SRO-R Non-violent			
Factor 1	—	—	—
Factor 2	—	—	—
Factor 3	0.50	0.08	0.53**

$R^2 = 0.17, p < 0.001$ (Overt aggression); $R^2 = 0.05, p < 0.05$ (Relational aggression); $R^2 = 0.28, p < 0.001$ (Violent offending); $R^2 = 0.28, p < 0.001$ (Non-violent offending); $R^2 = 0.04, p > 0.05$ (CTS-R aggression). — indicates the factor did not enter the regression model; probability of *F* to enter/remove = 0.05/1.0.

* $p < 0.05$.

** $p < 0.001$.

DISCUSSION

The current study was designed to investigate gender differences in the concurrent relationships observed between psychopathy factors and measures of aggression, violence, and non-violent delinquency in a sample of high-risk adolescents. Contrary to expectations, the association between the interpersonal, affective, and behavioral features of psychopathy and our dependent variables were comparable across males and females. These findings are consistent with studies suggesting that risk markers for aggression are more similar than different for girls and boys (e.g. Moffitt, Caspi, Rutter, & Silva, 2001). Additionally, even though girls tend to have lower levels of impulsivity and higher behavioral inhibition compared to boys, in our sample of high-risk adolescents these factors (i.e. factor 3 on the PCL:YV) were no less strongly related to indices of aggression and violence in girls than they were in boys. We also found that the interpersonal and affective features of psychopathy were similarly related to aggression for girls and boys. Overall, results did not show gender differences in the relation between different dimensions of psychopathy and relevant outcomes among high-risk youth.

In general, the pattern of results were similar regardless of whether psychopathy factors were examined with or without controlling for shared variance across the factors; however, a few exceptions were found. When examined individually, all three factors on the PCL:YV were associated with the number of violent offenses a youth had engaged in. The affective and behavioral features of psychopathy were related to nearly all of the outcome variables included in the study, reflecting a consistent relationship between these features and aggressive, violent and non-violent behaviors. However, to assess the unique relationship of each of the three clusters that comprise the PCL:YV it was necessary to control for the moderate to

high correlations between the factors. Once the common variance among the factors was controlled, the interpersonal features of psychopathy (factor 1) were no longer related to any of the study's outcome variables. It is possible that the association between factor 1 (interpersonal) and factor 3 (behavioral) ($r = 0.37$) was responsible for the apparent relationship between factor 1 and violence. Our findings call into question the validity of assessing psychopathic interpersonal features in youth. It may be the case that this factor is not tapping the same construct as it is in adult samples (i.e. a manipulative, superficial, and egocentric personality style), and therefore is not related to violence or antisocial behavior in expected ways. As some researchers in the field have implied (e.g. Edens et al., 2001; Hart et al., 2002; Kosson et al., 2002), the fluidity of adolescent identity and personality may preclude the interpersonal features of psychopathy from being crystallized to a sufficient degree to be reliably measured in adolescents. However, the reliability of factor 1 was acceptable in the current study ($\alpha = 0.66$; $ICC_1 = 0.93$), suggesting that the lack of significant relationships was not merely due to measurement or rater error.

Scores on factor 2 (affective deficit) were no longer related to violent or non-violent offending once the shared variance with the other factors was controlled, most notably the correlation between factor 2 and factor 3 ($r = 0.58$). Rather, the affective features of psychopathy showed unique effects for overt and relational aggression. These findings highlight the importance of affective and empathic deficits as factors involved in adolescent aggression. Indeed, empathy has long been regarded as a protective factor, in both males and females, that mitigates one's inclination towards aggressive behavior (Bjorkvist, Osterman, & Kaukiainen, 2000; Miller & Eisenberg, 1988); in contrast, deficits in the capacity to identify with and respond to others' emotional states have been linked to a range of antisocial behaviors including aggression, violence, and conduct disorder in youth samples (Broidy et al., 2003; Cohen & Strayer, 1996). As the onset of adolescence is associated with increased capacity for complex perspective-taking and integration of empathy into behavioral regulation skills (Moretti & Higgins, 1999), deficits in the capacity to represent others' emotional perspectives puts youth at risk for responding inappropriately and/or aggressively.

Lastly, when assessed alongside the other factors, the behavioral characteristics associated with psychopathy continued to predict overt aggression, violent, and non-violent offending. However, despite the importance of factor 3 in predicting aggression and antisocial behavior, it is important to note that some degree of content overlap between items on this factor (e.g. stimulation seeking, impulsivity, irresponsibility) and the outcome variables used in this and other studies (e.g. assault, drug offenses, impaired driving, theft) exists. Although the three-factor model of psychopathy substantially reduces the problem of predictor-criterion contamination, the remaining overlap may continue to inflate the association witnessed between scores on factor 3 and antisocial behaviors. For example, the item descriptions for "Impulsivity" and "Irresponsibility" in the PCL:YV ask the evaluator to consider instances of dangerous and reckless behavior, or behavior lacking in premeditated thought (Forth et al., 2003). It is easy to appreciate how one or more of the offenses queried on the SRO-R (e.g. dangerous or impaired driving) could contribute to a higher score on those PCL:YV items concerned with reckless and irresponsible behavior. It is likely that a youth who endorses multiple offense categories on the SRO-R will also discuss these same incidences during the course of

the PCL:YV interview. This information may also appear in the collateral reports used to score the PCL:YV.

Curiously, psychopathic features were largely unrelated to parental, peer, or romantic partner aggression as measured by the CTS-R in this study. This was surprising given the anticipated relation between psychopathic characteristics—particularly the affective deficits encompassed by factor 2—and “indiscriminate” aggression (i.e. towards strangers and friends or family alike). One possibility is that the CTS-R does not tap the type of aggression that is typically associated with psychopathy (e.g. unprovoked acts of violence) but focuses instead on reactive and reciprocal acts of aggression within close relationships (Penney & Moretti, 2004).

To date, this is one of the first studies to examine the three-factor model of psychopathy in a sample of high-risk adolescent males and females. Overall, the study provides preliminary evidence for the concurrent validity of the PCL:YV in young females as PCL:YV total and factor scores were associated in expected ways with indices of aggression and antisocial behavior for both boys and girls. Although promising, these findings are not sufficient to conclude that the PCL:YV functions equivalently for boys and girls, nor that it useful in the prediction of *future* violence. In order to gage the functional equivalence of the PCL:YV across gender, factor analytic studies and item-response theory analyses are required to demonstrate that items on the PCL:YV are optimally tapping the underlying construct in both male and female adolescents, and that the same dimensions (i.e. interpersonal, affective, behavioral) “capture” psychopathy in both males and females. Because the current study did not explicitly investigate the structural properties of the PCL:YV in girls, it remains possible that there are important gender differences in the structure and function of the psychopathy construct that were not investigated.

Accordingly, a central caveat of the current study concerns the use of the PCL with adolescents, particularly with young females. To date, there exists no firm evidence to support the extension of the measurement structure established in males to adult or adolescent females. Although a small, but significant, body of literature is accumulating on the structural and predictive validity of the PCL:YV in boys (e.g. Corrado et al., 2004; Gretton et al., 2004; Kosson et al., 2002), there is now evidence to suggest that the measurement structure advocated in the PCL:YV manual may not hold in girls (Odgers, Reppucci, et al., 2005). Given these findings, results on the concurrent and predictive validity of the PCL:YV are difficult to interpret because we cannot be sure of the measure’s underlying structural properties in adolescent females. Similarly, gender differences or similarities on the PCL:YV will be, at best, challenging to make sense of if the underlying structure of the measure is different for boys and girls.

Although the PCL instruments were originally designed to measure a personality syndrome, their use in comprehensive risk assessments has become more commonplace in recent years (Hart, 1998). However, as the PCL continues to extend itself into non-adult and female samples, it is necessary to question whether psychopathy, as currently defined and measured, functions as effectively as an indicator of risk in these more select populations. In the current study for example, the PCL:YV accounted for relatively small proportions of variance in predicting outcome, suggesting that there are other variables that would serve as more robust predictors of aggression and delinquency in our sample. For girls in particular, there is reason to believe that unique factors are associated with violence and delinquency

(e.g. sexual abuse and victimization in the home, Chesney-Lind, 1989, 1997; attachment and social bonds, Gilligan & Wiggins, 1988), introducing the possibility that variables other than those assessed under the rubric of psychopathy serve as more effective markers of risk in girls. Studies that assess the relative power of these variables versus psychopathic features over time in predicting violence are required to determine whether these factors contribute independently or interactively to outcomes, or whether one plays a more stable and central role. It seems especially important to consider whether the apparent relationship between psychopathy and aggression masks the effects of abuse and trauma since the bulk of aggression and offending committed by girls is preceded by a history of victimization. More generally, abused youth (who are typically overrepresented in high-risk samples) may develop a detached, callous, or unremorseful behavioral style that gives the appearance of psychopathy but that is a temporary and necessary adaptation to protect themselves in threatening life contexts.

In light of these comments, the field of juvenile psychopathy research would likely benefit from expanding its focus to include not only the environmental and behavioral correlates of psychopathic features, but also the developmental timing and etiological processes involved in the emergence of diverse symptom clusters that together comprise psychopathy. For instance, given that deficits in affect and empathy appear to play a salient role in both boys' and girls' aggression, it would be of benefit to carefully investigate when and how these deficits develop over time. Additionally, it would be revealing to study why certain psychopathic features appear to be predictive in adults only (e.g. interpersonal dimensions), and to investigate how and when these traits become predictive across different age cohorts. If the focus of study were to include both the etiological processes that give rise to certain maladaptive behavioral and personality characteristics, alongside the detrimental behavioral outcomes that are typically associated with these characteristics, this would further the quality and relevance of this field for understanding the roots and developmental course of aggression in youth.

Finally, we caution that interpretation of the current findings must be tempered by the highly select nature of our sample as well as our reliance on self-report data to assess aggression and antisocial behavior. Youth in this study had established severe and chronic problems with aggressive and delinquent behavior. The majority experienced moderate to severe maltreatment and many were separated from their biological families. While it is obviously difficult to assess the concurrent validity of the PCL:YV in normative samples due to low base rates of psychopathic features, it is nevertheless important to consider findings from both atypical and normative samples so that we will be better able to determine gender differences in the relationship between psychopathy characteristics and important outcomes. Additionally, future research efforts should seek to substantiate self-report data (e.g. with official arrest data or caregiver reports) to assess these relationships.

REFERENCES

- Archer, J. (2004). Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology*, 8, 291–322.
- Bjorkvist, K., Lagerspetz, 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.

- Bjorkvist, K., Osterman, K., & Kaukiainen, A. (2000). Social intelligence – empathy = aggression? *Aggression and Violent Behavior, 5*, 191–200.
- 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.
- Bruid, L., Cauffman, E., Espelage, D. L., Mazerolle, P., & Piquero, A. (2003). Sex differences in empathy and its relation to juvenile offending. *Violence and Victims, 18*, 503–516.
- Catchpole, R. E. H., & Gretton, H. M. (2003). The predictive validity of risk assessment with violent young offenders: A 1-year examination of criminal outcome. *Criminal Justice and Behavior, 30*, 688–708.
- Chesney-Lind, M. (1989). Girls' crime and woman's place: Toward a feminist model of female delinquency. *Crime and Delinquency, 35*, 5–29.
- Chesney-Lind, M. (1997). *The female offender*. Thousand Oaks, CA: Sage.
- Chesney-Lind, M., & Sheldon, R. (1998). *Girls, delinquency, and juvenile justice* (2nd ed.). Pacific Grove, CA: Brooks-Cole.
- Cohen, D., & Strayer, J. (1996). Empathy in conduct disorder and comparison youth. *Developmental Psychology, 32*, 988–998.
- Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopathy: Towards a hierarchical model. *Psychological Assessment, 13*, 171–188.
- Corrado, R. R., Vincent, G. M., Hart, S. D., & Cohen, I. M. (2004). Predictive validity of the psychopathy checklist: Youth version for general and violent recidivism. *Behavioral Sciences and the Law, 22*, 5–22.
- Crick, N. R. (1995). Relational aggression: The role of intent attributions, feelings of distress, and provocation type. *Development and Psychopathology, 7*, 313–322.
- Crick, N. R. (1997). Engagement in gender normative versus nonnormative forms of aggression: Links to social-psychological adjustment. *Developmental Psychology, 33*, 610–617.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66*, 710–722.
- Dodge, K. A., & Coie, J. D. (1987). Social-information processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology, 53*, 1146–1158.
- Edens, J. F., Skeem, J. L., Cruise, K. R., & Cauffman, E. (2001). Assessment of 'juvenile psychopathy' and its association with violence: A critical review. *Behavioral Sciences and the Law, 19*, 53–80.
- Elliott, D. S., & Ageton, S. S. (1980). Reconciling race and class differences in self-reported and official estimates of delinquency. *American Sociological Review, 45*, 95–110.
- Elliott, D. S., Dunford, F. W., & Huizinga, D. (1987). The identification and prediction of career offenders utilizing self-reported and official data. In J. D., Burchard & S., Burchard (Eds.), *Prevention of delinquent behavior* (pp. 90–121). Newbury Park, CA: Sage.
- Eme, R. F., & Kavanaugh, L. (1995). Sex differences in conduct disorder. *Journal of Clinical Child Psychology, 24*, 406–426.
- Forth, A. E., & Burke, H. (1998). Psychopathy in adolescence: Assessment, violence, and developmental precursors. In D. J., Cooke, A. E., Forth, & R. D., Hare *Psychopathy: Theory, research, and implications for society* (pp. 205–229). Dordrecht: Kluwer.
- Forth, A. E., Hart, S. D., & Hare, R. D. (1990). Assessment of psychopathy in young male offenders. *Psychological Assessment, 2*, 342–344.
- Forth, A. E., Kosson, D. S., & Hare, R. D. (2003). *Hare Psychopathy Checklist: Youth Version*. Toronto, Ontario: Multi-Health Systems.
- Frick, P. J. (2002). Juvenile psychopathy from a developmental perspective: Implications for construct development and use in forensic assessments. *Law and Human Behavior, 26*, 247–253.
- Funk, S. J. (1999). Risk assessment for juveniles on probation: A focus on gender. *Criminal Justice and Behavior, 26*, 44–68.
- Gilligan, C., & Wiggins, G. (1988). The origins of morality in early childhood relationships. In C., Gilligan, J., Ward, & J., Taylor (Eds.), *Mapping the moral domain: A contribution of women's think to psychological theory and education* (pp. 111–138). Cambridge, MA: Harvard University Press.
- Giordano, P. C., & Cernkovich, S. A. (1997). Gender and antisocial behavior. In D. M., Stoff, J., Breiling, & J. D., Maser (Eds.), *Handbook of antisocial behavior* (pp. 496–510). New York: Wiley.
- Girls Incorporated. (1996). *Prevention and parity: Girls in juvenile justice*. Indianapolis, IN: Girls Incorporated National Resource Center.
- Gretton, H. M., Hare, R. D., & Catchpole, R. E. H. (2004). Psychopathy and offending from adolescence to adulthood: A 10-year follow up. *Journal of Consulting and Clinical Psychology, 72*, 636–645.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist—Revised*. Toronto, Ontario: Multi-Health Systems.
- Hare, R. D. (2003). *The Hare Psychopathy Checklist—Revised* (2nd ed.). Toronto, Ontario: Multi-Health Systems.
- Harris, G. T., Rice, M. E., & Cormier, C. (1991). Psychopathy and violent recidivism. *Law and Human Behavior, 26*, 377–394.
- Hart, S. D. (1998). The role of psychopathy in assessing risk for violence: Conceptual and methodological issues. *Legal and Criminological Psychology, 3*, 123–140.

- Hart, S. D., Watt, K. A., & Vincent, G. M. (2002). Commentary on Seagrave and Grisso: Impressions of the state of the art. *Law and Human Behavior*, 26, 241–245.
- Hemphill, J. F., Hare, R. D., & Wong, S. (1998). Psychopathy and recidivism: A review. *Legal and Criminological Psychology*, 3, 141–172.
- Holsinger, K., & Holsinger, A. M. (2005). Differential pathways to violence and self-injurious behavior: African American and White girls in the juvenile justice system. *Journal of Research in Crime and Delinquency*, 42, 211–242.
- Hoyt, S., & Scherer, D. G. (1998). Female juvenile delinquency: Misunderstood by the juvenile justice system, neglected by social science. *Law and Human Behavior*, 22, 81–107.
- Huizinga, D., & Elliott, D. S. (1986). Reassessing the reliability and validity of self-report delinquency measures. *Journal of Quantitative Criminology*, 2, 293–332.
- Huizinga, D., Esbensen, F., & Weiher, A. W. (1991). Are there multiple paths to delinquency? *Journal of Criminal Law and Criminology*, 82, 83–118.
- Hume, M. P., Kennedy, W. A., Patrick, C. J., & Partyka, D. J. (1996). Examination of the MMPI-A for the assessment of psychopathy in incarcerated adolescent male offenders. *International Journal of Offender Therapy and Comparative Criminology*, 40, 224–233.
- Jackson, R. L., Rogers, R., Neumann, C. S., & Lambert, P. L. (2002). Psychopathy in female offenders: An investigation of its underlying dimensions. *Criminal Justice and Behavior*, 29, 692–704.
- Knight, G. P., Little, M., Losoya, S., & Mulvey, E. P. (2004). The self-report of offending among serious juvenile offenders: Cross-gender, cross-ethnic/race measurement equivalence. *Youth Violence and Juvenile Justice*, 2, 273–295.
- Kosson, D. S., Cyterski, T. D., Steuerwald, B. L., Neumann, C. S., & Walker-Matthews, S. (2002). The reliability and validity of the Psychopathy Checklist: Youth Version (PCL:YV) in nonincarcerated adolescent males. *Psychological Assessment*, 14, 97–109.
- Little, T. D. (2003). Adaptive and maladaptive profiles of subtypes aggressive adolescents. Paper presented at the Society for Research and Child Development, Tampa, FL.
- Little, T. D., Jones, S. M., Heinrich, C. C., & Hawley, P. H. (2003). Disentangling the ‘whys’ from the ‘whats’ of aggressive behavior. *International Journal of Behavioral Development*, 27, 122–133.
- Loeber, R., & Stouthamer-Loeber, M. (1998). Development of juvenile aggression and violence: Some common misconceptions and controversies. *American Psychologist*, 53, 242–259.
- Maguire, K., & Pastore, A. L. (1999). *Sourcebook of criminal justice statistics, 1998* (U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, NCJ 176356). Washington, DC: US Government Printing Office.
- Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggression and externalizing/antisocial behavior. *Psychological Bulletin*, 3, 324–344.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100, 674–701.
- Moffitt, T. E., Caspi, A., Rutter, M., & Silva, P. A. (2001). *Sex differences in antisocial behavior: Conduct disorder, delinquency and violence in the Dunedin longitudinal study*. New York: Cambridge University Press.
- Moretti, M. M., Catchpole, R. E. H., & Odgers, C. L. (2005). The dark side of girlhood: Recent trends, risk factors and trajectories to aggression and violence. *Canadian Child and Adolescent Psychiatry Review*, 14, 21–25.
- Moretti, M. M., & Higgins, E. T. (1999). Own versus other standpoints in self-regulation: Developmental antecedents and functional consequences. *Review of General Psychology*, 3, 188–223.
- Moretti, M. M., Odgers, C. L., & Jackson, M. A. (Eds.). (2004). *Girls and aggression: Contributing factors and intervention principles*. New York: Kluwer.
- Odgers, C. L., Moretti, M. M., & Reppucci, N. D. (2005). Examining the science and practice of violence risk assessment with female adolescents. *Law and Human Behavior*, 29, 7–27.
- Odgers, C. L., Reppucci, N. D., & Moretti, M. M. (2005). Nipping psychopathy in the bud: An examination of the convergent, predictive, and theoretical utility of the PCL:YV among adolescent girls. *Behavioral Sciences and the Law*, 23, 743–763.
- Penney, S. R., & Moretti, M. M. (2004). Measuring reciprocity of aggression within relationships: Validity of the Conflict Tactics Scales. Poster presented at the Canadian Institutes of Health Research—New Emerging Team on Girls and Aggression, Toronto, ON, Canada.
- Piquero, A. R., MacIntosh, R., & Hickman, M. (2002). The validity of a delinquency scale: Comparisons across gender, age, race, and place of residence. *Sociological Methods and Research*, 30, 492–529.
- Porter, G. (2000). *Detention and delinquency cases, 1988–1997*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Puzzanchera, C., Stahl, A. L., Finnegan, T. A., Tierney, N., & Snyder, H. N. (2003). *Juvenile Court Statistics 1998*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Salekin, R. T. (2002). Psychopathy and therapeutic pessimism: Clinical lore or clinical reality? *Clinical Psychology Review*, 22, 79–112.

- Salekin, R. T., Rogers, R., & Machin, D. (2001). Psychopathy in youth: Pursuing diagnostic clarity. *Journal of Youth and Adolescence*, 30, 173–195.
- Salekin, R. T., Rogers, R., & Sewell, K. W. (1996). A review and meta-analysis of the Psychopathy Checklist and Psychopathy Checklist—Revised: Predictive validity of dangerousness. *Clinical Psychology: Science and Practice*, 3, 203–215.
- Salekin, R. T., Rogers, R., & Sewell, K. W. (1997). Construct validity of psychopathy in a female offender sample: A multitrait–multimethod evaluation. *Journal of Abnormal Psychology*, 106, 576–585.
- Salekin, R. T., Rogers, R., Ustad, K. L., & Sewell, K. W. (1998). Psychopathy and recidivism among female inmates. *Law and Human Behavior*, 22, 109–128.
- Savioe, J. (2000). *Youth violent crime* (Statistics Canada, Catalogue No. 85-002-XPE, Vol. 19, No. 3). Ottawa: Canadian Centre for Justice Statistics.
- Seagrave, D., & Grisso, T. (2002). Adolescent development and the measurement of juvenile psychopathy. *Law and Human Behavior*, 26, 219–239.
- Silverthorn, P., & Frick, P. J. (1999). Developmental pathways to antisocial behavior: The delayed-onset pathway in girls. *Development and Psychopathology*, 11, 101–126.
- Stafford, E., & Cornell, D. G. (2003). Psychopathy scores predict adolescent inpatient aggression. *Assessment*, 10, 102–112.
- Statistics Canada. (2003). *Canadian dimensions: Youth and adult crime rates*. Retrieved November 1, 2003, from <http://www.statcan.ca.proxy.lib.sfu.ca/english/Pgdb/justice.htm#vic>.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics Scales. *Journal of Marriage and the Family*, 41, 75–88.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The revised Conflict Tactics Scales (CTS2). *Journal of Family Issues*, 17, 283–316.
- Toupin, J., Mercier, H., Déry, M., Côté, G., & Hodgins, S. (1996). Validity of the PCL-R for adolescents. In D. J., Cooke, A. E., Forth, J., Newman, & R. D., Hare (Eds.), *International perspectives on psychopathy* (pp. 143–145). Leicester, UK: The British Psychological Society.
- Underwood, M. K. (2003). *Social aggression among girls*. New York: Guilford.
- U.S. Department of Health and Human Services. (2001). *Youth violence: A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; Substance Abuse and Mental Health Services Administration, Center for Medical Health Services; and National Institutes of Health, National Institute of Mental Health.
- Verona, E., & Vitale, J. (2006). Psychopathy in women: Assessment, prevalence, and etiology. In C. J., Patrick (Ed.), *Handbook of psychopathy* (pp. 415–436). New York: Guilford.
- Vitale, J. E., Smith, S. S., Brinkley, C. A., & Newman, J. P. (2002). The reliability and validity of the Psychopathy Checklist—Revised in a sample of female offenders. *Criminal Justice and Behavior*, 29, 202–231.
- Warren, J. I., Burnette, M. L., South, S. S., Chauhan, P., Bale, R., Friend, R., & Van Patten, I. (2003). Psychopathy in women: Structural modeling and comorbidity. *International Journal of Law and Psychiatry*, 26, 233–242.

Copyright of Behavioral Sciences & the Law is the property of John Wiley & Sons, Ltd. 2004 and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.