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## PSYCHOPATHY IN ADOLESCENCE: CONCEPTUALIZATION, STABILITY, AND PREDICTION OF AGGRESSION

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# PSYCHOPATHY IN ADOLESCENCE: CONCEPTUALIZATION, STABILITY, AND PREDICTION OF AGGRESSION

By

Jennifer Suzanne Durst

## A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

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#### ABSTRACT

## PSYCHOPATHY IN ADOLESCENCE: CONCEPTUALIZATION, STABILITY, AND PREDICTION OF AGGRESSION

By

### Jennifer Suzanne Durst

In adults, research has consistently associated the personality disorder of psychopathy with a particularly aggressive and violent form of criminal offending. Preliminary studies have shown a similar link in adolescence. Yet, much more knowledge is needed about the disorder in youth to determine whether it is a useful construct for early identification of potentially severe offenders. The present study investigated psychopathy in a sample of 149 adolescents involved with the juvenile justice system. The research aims were to: (1) assess the fit of several proposed conceptualizations of psychopathy; (2) test the stability of psychopathy and its dimensions in adolescents over time; and (3) examine the predictive validity of psychopathy for aggression in court-referred adolescents. Results indicated that models of psychopathy that did not include social deviance criteria evidenced the best fit to the data. As predicted, a three-factor model of psychopathy was the best-fitting model when compared to a two-factor model. The affective dimension of psychopathy demonstrated greater structural stability over a year's time than the narcissistic or behavioral dimensions, though other indicators of absolute and relative stability did not support the stability of the affective factor. Lastly, results indicated that psychopathy significantly predicts later aggression, after controlling for concurrent aggression and other variables previously found to be related to aggression and violence (i.e., social anomie, association with delinquent peers, and lack of parental supervision).

Dedicated to my parents for their unfaltering support in good times and in bad. Thank you for always showing me how (and sometimes forcing me) to persevere. I would not have made it through without you. I love you both very much.

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#### **INTRODUCTION**

Across many domains, there is interest in the development and maintenance of antisocial behavior and aggression in adults, and more recently, children and adolescents. This interest is spurred by the widespread economic, legal, and human costs incurred because of antisocial, criminal, and violent behavior. Research has illustrated that there is not just one "type" of antisocial individual and work has focused on denoting the subtypes of offenders (Frick, 2000). With adults, the construct of psychopathy has proven effective in classifying one subtype of antisocial offender, identifiable because of a typically severe and violent behavior pattern (Edens, Skeem, Cruise, & Cauffman, 2001).

Psychopathy is a disorder characterized by affective, interpersonal, and behavioral deficits. Adult criminal offenders who are also classified as psychopaths are more aggressive and commit more than twice as many violent acts as nonpsychopathic criminals (Hare, 1993). They also display higher rates of recidivism, commit more total crimes, and spend more time in prison than their nonpsychopathic counterparts (Harpur & Hare, 1994; Harris, Rice, & Cormier, 1991; Selekin, Rogers, & Sewell, 1996). In addition, the violent acts of psychopaths are more likely to be premeditated and instrumental, used to satisfy an instrumental need or obtain something the psychopath desires (Frick, 2000; Hare, 1993). Unlike nonpsychopathic criminals whose violence generally occurs as a result of heated disputes, intense emotions, or precipitating distress, the psychopathic criminal exhibits dispassionate, business-like violence and aggression (Hare, 1993).

Similar relationships between psychopathy and violence have been found in studies of adolescent offenders (Frick, 2000; Gretton, 1999). Yet, the investigation into the nature of the psychopathy construct in adolescents and even younger children is still in its infant stages. Work in this area is important. Interventions with psychopathic adults have proven difficult (Hare, 1993; Ogloff, Wong, & Greenwood, 1990; Rice, Harris, & Cormier, 1992; Serin, 1996), suggesting that by adulthood psychopaths are relatively resistant to treatment interventions (McBride, 1998). Therefore, it becomes important to intervene with this subgroup of offenders earlier. Identification and understanding of the disorder in a younger cohort may lead to the development of more effective and earlier interventions, leading to a reduction in future violence and antisocial behavior.

One issue that has hindered the study of psychopathy in adults is disagreements among researchers regarding its conceptualization and measurement (Cooke & Michie, 2001; Lilienfeld, 1994). Similar difficulties have also appeared in the adolescent and child literature (Frick, 2000; Salekin, Rogers, & Machin, 2001). Yet, progress in the research on psychopathy in younger cohorts depends a great deal upon better clarification of the construct (Salekin et al., 2001). Adding to the conceptualization difficulty is the fact that while some posit that psychopathic personality is established in childhood (see Forth, Hart, & Hare, 1990; Frick, 2000); others wonder whether the concept of psychopathy in adults can even be applied to adolescents and children (Edens et al., 2001; McBride, 1998). This disagreement stems from the general temporal instability of adolescent behavior and attitudes, and the rapid developmental changes that take place during this stage of development.

A delineation of the appropriate conceptualization of psychopathy in adolescence is only the beginning of the examination of the construct in this age group. It is also necessary to determine whether psychopathy or its dimensions are useful in the prediction of important outcomes like violence and aggression, especially over and above other variables that have been significantly related to these outcomes in adolescents. Most of the handful of studies that have examined the ability of psychopathy to predict future violence (e.g. violent reoffense, violent or aggressive institutional infractions) have reported a statistically significant relationship in the expected direction. However, only one study (Brandt, Kennedy, Patrick, & Curtin, 1997) has examined the incremental predictive validity of psychopathy to predict violent re-offense after other factors (i.e., education level, substance abuse, age at assessment, criminal history, number of Conduct Disorder symptoms) were first considered and offered evidence that psychopathy explains additional variance in future violence.

This study explored the nature and validity of the psychopathy construct in a sample of court-referred adolescents. First, it assessed the "fit" of alternative models of the disorder, previously identified in adults and children, in an adolescent sample using two different measures of psychopathy; dimensions of the best fitting model were also tested across gender. Second, it examined the absolute and relative stability of psychopathy and its dimensions over time. Third, it explored whether and to what extent psychopathy predicts future aggression both directly and over and above other factors, namely association with delinquent peers, lack of parental supervision, and social anomie, each of which has previously been associated with aggression.

#### CHAPTER 1

## CONCEPTUALIZATION OF PSYCHOPATHY

Cleckley's (1976) characterization of psychopathy is still considered the framework for much of the current research on this disorder (Hare, 1993). According to Cleckley, psychopathy includes *affective* and *narcissistic* [italics added] deficits reflected in a lack of empathy, guilt or remorse, manipulation of others, superficial charm, egocentricity, glibness, and untruthfulness. Cleckley proposes that psychopaths also display several characterological *deficient or immature behavioral patterns* [italics added], namely irresponsibility, unreliability, a failure to learn from experience, and a lack of long-term goals (see Table 1). Cleckley maintained that because of these deficits psychopaths are prone to antisocial behavior, most singly what he termed inadequately motivated antisocial behavior, which can take place on a whim and lacks consistency. In his view, an antisocial lifestyle is not a necessary consequence of the disorder. Cleckley asserted that some psychopaths do not exhibit a history of antisocial behavior and may even hold socially acceptable employment.

Currently there are no fewer than four alternative models outlined in the adult and child literature (see Table 2), all reportedly based on Cleckley's characterization of psychopathy. Differences in the measures and reporters employed, and age and gender composition of the samples used, has muddied the search for the ideal construct. In addition, rarely have any of these models been tested or compared in adolescent samples. *Two factor models* 

Hare and his colleagues (Hare, Harpur, Hakstian, & Forth, 1990; Harpur,

Hakstian, & Hare, 1988; Harpur, Hare, & Hakstian, 1989) proposed a two-factor model of psychopathy defined as a higher order construct with two distinct factors or dimensions (Hare et al., 1990). The first factor describes the affective and narcissistic personality traits of the disorder and the second includes behavioral deficits such as Table 1

## Cleckley criteria for psychopathy.

- 1. Considerable superficial charm and average or better intelligence
- 2. Absence of delusions or other signs of irrational thinking.
- 3. Absence of anxiety or other "neurotic" features.
- 4. Unreliability, disregard for obligations.
- 5. Untruthfulness and insincerity.
- 6. Lack of remorse or shame.
- 7. Inadequately motivated antisocial behavior.
- 8. Poor judgment and failure to learn from experience.
- 9. Pathological egocentricity, totally self-centered; incapacity for love.
- 10. General poverty of major emotional reactions.
- 11. Specific lack of insight, unable to see oneself the way others do.
- 12. Unresponsive to special considerations, kindness or trust.
- 13. Fantastic and uninviting behavior after drinking and sometimes with no drinking

(e.g., vulgarity, rudeness, quick mood shifts, pranks).

- 14. No genuine suicide attempts.
- 15. Sex life impersonal, trivial, and poorly integrated.
- 16. Failure to follow a life plan.

# Table 2

# Models of psychopathy.

Model	Background	Factors
2-factor model from Hare et al. (1990)	Based on work with adult criminal samples and the Psychopathy Checklist (PCL)	<ol> <li>Affective and narcissistic personality traits</li> <li>Behavioral traits with social deviance/antisocial lifestyle criteria</li> </ol>
2-factor model from Frick et al. (1994)	Based on work with child community and clinical samples using the Antisocial Process Screening Device (APSD), which is based upon Hare's PCL	<ol> <li>Affective personality traits</li> <li>Narcissistic personality traits and behavioral traits with social deviance/ antisocial lifestyle criteria</li> </ol>
2-factor model from Lynam et al. (1999)	Based on work with adult (college age) community samples and the Levenson Self- Report Psychopathy Scale, which is based upon Hare's PCL	<ol> <li>Affective and narcissistic personality traits</li> <li>Behavioral traits without social deviance/antisocial lifestyle criteria</li> </ol>
3-factor model from Cooke and Michie (2001) and Frick et al. (2000)	Based on work with both adult criminal and child community/clinical samples using the PCL and APSD	<ol> <li>Affective personality traits</li> <li>Narcissistic personality traits</li> <li>Behavioral traits without social deviance/antisocial lifestyle criteria</li> </ol>

impulsivity, irresponsibility, proneness to boredom, parasitic lifestyle, and lack of longterm goals (see Appendix A). Hare's two-factor model of psychopathy was designed to be based on Cleckley's formulation and has been the dominant approach to the assessment of psychopathy over the last decade (Edens et al., 2001). Operationalization of Hare's model has demonstrated a strong correlation with Cleckley's criteria (r = .83; Hare, 1991 as cited in Schmitt & Newman, 1999). Yet, Hare's model arguably deviates in some ways from Cleckley's theory, representing or sharing in only seven of Cleckley's 16 criteria (Salekin, Rogers, & Sewell, 1996). This deviation from the traditional view of psychopathy stemmed from the fact that the goal of the model is to best discriminate psychopathic from nonpsychopathic *inmates*. Because of this focus on criminal populations, Hare's model relies more heavily on criminal and social deviance descriptors than outlined in Cleckley's original criteria for the disorder (Edens et al., 2001).

When developing the Psychopathy Checklist (PCL, Hare, 1980), his operationalization of his model, Hare selected items that tapped the personality variables Cleckley proposed as the core of the disorder. However, because Hare was interested primarily in criminal populations, he included items assessing involvement in criminal activity as well. The 20-item revision of the PCL, the PCL-R, includes three social deviance items that measure: (a) the presence or absence of juvenile delinquency, (b) the revocation of conditional release, and (c) criminal versatility. The first two items load on the PCL- R second factor; the third is only included in the total psychopathy score. Trained raters generally score the PCL-R items after an interview and file review are conducted.

These types of concrete indicators of social deviance potentially improve the reliability of an instrument such as the PCL-R for use in criminal populations, but potentially sacrifice its construct validity. In fact, the second factor, termed social deviance, along with the criminal versatility item, closely reflects the Diagnostic and

Statistical Manual, Fourth Edition (DSM-IV, American Psychiatric Association) diagnosis of Antisocial Personality Disorder (ASPD). Because the inclusion of antisocial behavior oversteps the boundaries of Cleckley's original notion, classification is likely to result in a heterogeneous group of individuals identified as psychopathic, all of whom meet criteria for ASPD, but only some of who manifest the core personality traits of psychopathy.

Although the PCL-R can be decomposed into two separate factors, identification of "psychopathic" individuals relies on a total score as the measure of psychopathy. Because total scores may be influenced by either or both factors, one or the other may be weighted more heavily in the final classification decision (Selekin et al., 1996; Wootton, Frick, Shelton, & Silverthorn, 1997). Though the two dimensions are moderately correlated, this level of association also suggests that some individuals may exhibit characteristics of one dimension and not the other. Research indicates that the factors have consistently shown differential correlates (Cooke & Michie, 2001; Harpur et al., 1989; McBride, 1998). The personality-based factor scores correlate negatively with measures of anxiety and empathy, and positively with scores on narcissism, instrumental and predatory violence, and poor therapeutic change. Social deviance factor scores have been negatively associated with IQ and socioeconomic status, and positively related to sensation seeking and spontaneous, reactionary aggression.

In addition, investigations into the ability of each factor to predict violence have revealed variable results. Lilienfeld's (1994) review reported that measures that include the core personality traits (e.g., PLC-R factor 1) of psychopathy are better predictors of outcomes like recidivism and future violent offending than measures of ASPD criteria

alone. This report corresponded with Hart, Hare, and Forth's (1994) contention that generally factor 1 scores are as, if not more, predictive of violence than factor 2 scores. Conversely, a review of the literature by Salekin, Rogers, and Sewell (1996) stated that factor 2 scores were a better predictor of violent recidivism than factor 1. In either case, confounding the two dimensions is potentially problematic because, as noted, not all of the PCL items may actually tap into the traditional construct of psychopathy and high scores on different combinations of items may in fact be measuring different constructs.

The inclusion of social deviance behavioral indicators in Hare's two-factor model makes it a behavior-based conceptualization of psychopathy. This conceptualization is what Lilienfeld (1994) termed a "closed" concept because it is defined explicitly, whereas the personality-based approach is an "open" concept. The open approach generally provides a better fit to most diagnostic categories than a closed approach because diagnostic categories are characterized by unclear boundaries, a potentially infinite number of indicators for their criteria, and imperfect relationships between the indicators and their criterion. Inclusion of closed criteria in diagnosis compromises the construct validity because most psychiatric syndromes and their related diagnostic criteria are generally open concepts.

In addition to social deviance indicators leading to possible misclassification, it may be that the use of these closed behavioral indicators in factor 2 clouds the assessment of its underlying personality traits. Harpur and Hare (1994) found that, after age 40, psychopaths' factor 1 scores persisted whereas their factor 2 scores declined, showing a significant difference in temporal stability. This decline in factor 2 scores mirrored results typically found with Antisocial Personality Disorder. The addition of the

behavior-based indicators of criminal history and antisocial behavior may help to explain why PCL factor 2 scores do not show the same stability over time as factor 1 scores. Harpur and Hare stated that one possible explanation for the age-related differences in the PCL factors is that the personality traits underlying factor 2 may be stable across the lifespan, yet the behavioral indicators used to measure these traits show an age bias. This explanation seems likely given the research indicating that personality traits generally remain stable after age 30.

Most measures of psychopathy in children and adolescents are based on Hare's PCL-R and include items assessing social deviance. One of the most widely used instruments with adolescents is the youth version of the PCL, the PCL: YV (Forth, Hare, & Hart, 1990). This modified youth version employs the same two-factor structure as the PCL-R, though it omits the items on parasitic lifestyle and marital history, items not as applicable to adolescents. The Antisocial Process Screening Device (APSD, Frick & Hare, in press) formally the Psychopathy Screening Device (PSD), has seen an increase in use for the assessment of psychopathy in youth. The APSD is a 20-item parent- or teacher-rated measure of psychopathy traits based on the PCL-R, but modified for developmental appropriateness.

As would be expected being based on the PCL and representing downward extensions of Hare's adult model, both the PCL: YV and APSD include the assessment of social deviance criteria to some degree. The PCL: YV still includes items measuring juvenile delinquency and criminal versatility, although the scoring of these items is modified. Instead of using a three-point scale, all violent crimes on the juvenile delinquency item are rated a '2' and all non-violent ones are rated '1.' For criminal

versatility, four or more different types of offenses rates a '2', three types scores a '1,' and one or two types of crimes rates a '0.' In contrast, only one of the 20 APSD items, "engages in illegal activities," assesses social deviance. As with adults, the arguments against including social deviance criteria in the conceptualization and assessment of psychopathy also apply to youth.

In adolescents, Hare's two-factor model is generally employed, measured by the PCL: YV, even though this model has received little empirical support. When tested via confirmatory factor analysis procedures in an adolescent offender sample, the two-factor model received only modest support with a reported comparative fit index of 0.83 (Brandt et al., 1997). In his unpublished dissertation study, Cruise (2001) reported a slightly better fit of a two-factor oblique model with juvenile offenders, listing a comparative fit index of 0.89 and  $\chi^2 = 136.29$ , p = .01.

The original analysis of the APSD on a group of clinic-referred children aged 6 to 13 also yielded a two-factor model, but one quite different than that outlined by Hare in adult populations (Frick, O'Brien, Wootton, & McBurnett, 1994). Principal component analysis yielded one dimension that contained items not only assessing *narcissistic* traits, but those tapping persistent characterological *behavioral patterns* and *social deviance* criteria [italics added]. The second component contained items reflecting *affective deficits* [italics added], which the authors termed Callous/Unemotional (see Appendix B). This is in contrast to Hare's adult two-factor model in which the narcissistic and affective traits load on one factor and the behavioral and social deviance items load on another.

For both adults and youth, the inclusion of social deviance behavior-based criteria in measures of psychopathy may limit the instrument's construct and predictive validity

when assessed in terms of certain important outcomes. Investigators have recently questioned Hare and colleagues' two-factor model of psychopathy along these and other lines. In accordance with Cleckley's (1976) position that psychopaths are found outside the criminal domain, Cooke and Michie (2001) argue that social deviance criteria, for example criminality and history of antisocial behavior, are not basic tendencies – core personality features - of psychopathy, but possible characteristic adaptations of the disorder. These characteristic adaptations result from the interplay between core traits and environmental influences. Though his research focus is mainly criminal psychopaths and his PCL criteria include antisocial behaviors, Hare (1993) also acknowledged that not all psychopaths are criminals.

Following Cleckley's original conceptualization and the arguments against the inclusion of social deviance criteria in the conceptualization of psychopathy, recent investigations have focused on the assessment of the construct in non-criminal, community-based samples. Levenson, Kiehl, and Fitzpatrick (1995) developed the Levenson Self-Report Psychopathy (LSRP) scale, a measure based on Hare's PCL, for use with noninstitutionalized populations. Like with versions of the PCL, analyses of the LSRP demonstrated a two-factor model with affective and narcissistic traits loading on one factor and behavioral traits loading on the second one (Levenson et al., 1995; Lynam, Whiteside, & Jones, 1999). Yet, unlike the model based upon the PCL versions, the Levenson model assumes the irrelevance of social deviance criteria. However, because the LSRP does not include social deviance items, this assumption remains untested. *Three-factor models* 

Recently, Hare's model of psychopathy has been questioned not only because of

its deviation from Cleckley's original characterization and the inclusion of social deviance criteria, but also because of its two-factor solution. Cooke and Michie (2001) argued that previous investigators misinterpreted congruence coefficients as evidence for the two-factor solution and their own attempts to replicate this model fell short in proving its adequacy. These authors conducted both exploratory and confirmatory factor analyses procedures on PCL-R data from a sample of 2,067 participants from North American correctional and forensic institutions. Results from the exploratory analysis were inconclusive, and the confirmatory procedure indicated that the two-factor solution did not provide an acceptable fit to the data. Accordingly, the investigators concluded that the two-factor solution was not "an adequate structural model for psychopathy" (p. 173).

Cooke and Michie (2001) subsequently reanalyzed a random half of their data using newer statistical methods. An exploratory factor analysis produced five interpretable factors, with most items loading on two factors. The social deviance descriptors of juvenile delinquency, early behavioral problems, promiscuous sexual behavior, many short term marriages, revocation of conditional release, and criminal versatility formed couplets and defined the remaining three factors. The authors went on to compare five different models following a model building process employing confirmatory factor analysis procedures and informed by item response theory. The first model, consisting of all five factors and including the social deviance behavioral descriptors, resulted in the most unsatisfactory fit, with two other models showing an adequate fit to the data. One of these adequate models consisted of 10 items described by two correlated factors; the second included 13 items described by three correlated factors. Both models demonstrated similar fit indices; the comparative fit indices of the two-

factor and three-factor models were 0.97 and 0.96, respectively. Cooke and Michie argued that the three-factor model was superior because it included items traditionally viewed as central to the psychopathy construct, namely glibness/superficial charm, pathological lying, and manipulativeness. It should be noted that neither of the two best fitting models included the social deviance descriptors. When cross-validated on the other half of the data set, the new three-factor model exhibited a satisfactory fit (comparative fit index = 0.97, RMSEA = 0.05). The authors also successfully replicated the three-factor model using other psychopathy measures, including the short version of the PCL (PCL-SV), the Psychopathy Criterion Set, and items from the ASPD and Dissocial Personality Disorder criteria sets.

The three factors of Cooke and Michie's (2001) new model are consistent with the clinical tradition defining psychopathy in terms of three domains: narcissistic, affective, and behavioral (see Appendix D). Cooke and Michie (2001) describe the first factor as Arrogant and Deceitful Interpersonal Style, defined by items assessing glibness, superficial charm, a grandiose sense of self, pathological lying, and conning/manipulativeness. The second factor, termed Deficient Affective Experience, is defined by items related to shallow affect, callousness and lack of empathy, lack of remorse or guilt, and failure to accept responsibility for one's actions. The last factor of Impulsive and Irresponsible Behavioral Style includes items measuring need for stimulation/proneness to boredom, impulsivity, irresponsibility, parasitic lifestyle, and lack of realistic, long-term goals. Cooke and Michie's conceptualization meshes more closely with that of Cleckley than Hare's model, though some differences still remain. The authors still include impulsivity, which Cleckley did not posit to be a core trait of

psychopathy. In addition, because Cooke and Michie used PCL-R items as the basis for their model, they did not include facets of psychopathy suggested by Cleckley but not included in the PCL-R, such as absence of anxiety or above average intelligence.

In contrast to Hare and colleagues' two-factor model, measures of criminal or antisocial behavior throughout the lifespan do not contribute to any of the three dimensions the Cooke and Michie model of psychopathy. This exclusion of social deviance criteria coincides with Cleckley's conception that antisocial and criminal behavior is a common outcome of psychopathic personality, but is not a necessary component of the disorder. The behavioral domain (defined by lack of long-term goals, irresponsibility, and parasitic lifestyle) is still an important part of the psychopathy construct in the three-factor model, but deviant behavioral indicators that may limit construct validity are no longer included in its measurement (Lilienfeld, 1994).

A study by Frick and colleagues (Frick, Bodin, & Barry, 2000) suggested that a three-factor model, similar to the one described by Cooke and Michie (2001), might also provide a better fit in children (see Appendix D). Utilizing the APSD in a sample of 1,136 elementary school children, these authors found evidence for both the original two-factor model (with narcissistic and impulsive traits combined on one factor and affective traits on a separate factor) and the three-factor model (narcissistic, affective, and behavioral traits separated) using exploratory factor analyses. Then, using confirmatory factor analysis procedures, they tested the fit of both the two-factor and three-factor models on the six- to 13-year-old clinic-referred sample described in Frick, O'Brien, Wootton, and McBurnett (1994). The three-factor demonstrated only a slightly better fit than the two-factor model (comparative fit indices of .92 and .91, respectively). But,

notably, the APSD social deviance item (i.e., engages in illegal activities) did not contribute to the final three-factor model.

Only one investigation examined whether the three-factor solution outlined by Cooke and Michie would replicate in an adolescent sample. Edens, Skeem, Cruise, and Cauffman (2001) reexamined previous PCL-R data (Edens, Poythress, & Lilienfeld, 1999) for 50 youthful offenders utilizing the three-factor model suggested by Cooke and Michie. Results of this reexamination were mixed. The Arrogant and Deceitful Interpersonal Style factor related significantly to both verbal and physical aggression (r =.29, p<.05). The correlation between the aggression outcome measures and the Deficient Affective Experience factor was somewhat smaller (r = .21) and non-significant. The Impulsive and Irresponsible Behavioral Style had the lowest association with aggression (r = .14) and also had a relatively poor internal reliability after the behavior-based items were removed ( $\alpha = .58$ , compared to the  $\alpha = .75$  of the original Social Deviance scale). Though the reanalysis results were not completely supportive of the three-factor model, the mixed findings and small sample employed indicate that investigation of a larger sample is warranted.

## Adult-youth differences

Even if it is found that the models of psychopathy found in adults generally extend to adolescents, some investigators have posited that even minor differences in the manifestation of the construct between adults and adolescents may still make this downward extension problematic (Cruise, 2001; Salekin et al., 2001). For example, adult-adolescent differences in item loadings on the dimensions may point to different interpretations of the dimensions, with some items being more important to the

conceptualization of psychopathy in one age group versus the other (Cruise, 2001). In addition, in some respects, adults, adolescents, and children may differ completely on the symptoms that make up the disorder of psychopathy (Salekin et al., 2001).

In general, studies of psychopathy in adults utilizing the PCL and PCL-R have shown that the items assessing egocentricity, grandiose sense of self, and superficial charm have consistently related most strongly to factor 1 scores describing the core personality characteristics of psychopaths (Cruise, 2001). This result suggests that narcissism best captures the personality deficits of psychopathy. Yet, Cruise's analysis of PCL:YV data with adolescents demonstrated that affective deficits - callousness, lack of empathy, and manipulation - were more highly related to factor 1 than narcissistic traits. His conclusion was that adolescents might exhibit a different pattern of psychopathy than adults.

An investigation attempting to clarify the diagnostic criteria for psychopathy in youth (age range 6-18, M = 14.36 years) gathered data on "prototypical" characteristics from 511 child psychologists who were members of the American Psychological Association's Section of Child Clinical Psychology (Salekin et al., 2001). Although the authors found that many of the core features of psychopathy outlined for adults were also assumed by professional experts to be prototypical for youth, many adult-to-child differences were also outlined. Criterion such as "parasitic lifestyle," "lack of long-term planning," "impulsivity," and "failure to accept responsibility" were found not to apply to youth. Still, the respondents endorsed other criteria considered to be core personality features of psychopathy in adulthood, including "lies easily and skillfully," "does not feel bad or guilty," "uses or cons others." "is unconcerned about the feelings of others,"

"emotions are shallow," and "acts charming in ways that seem insincere" as prototypical of psychopathy in youth. Other behavioral indicators, some of which are included in adult assessments of psychopathy (i.e., "juvenile delinquency," "early behavioral problems") and some that are not (i.e., "easily annoyed by others," "has been physically cruel to others") were also considered prototypical features of psychopathy in youth.

In sum, in all age groups, the inclusion of behavioral-based, social deviance criteria as core features of psychopathy is debated. In addition, there is still disagreement among investigators about the appropriate structural model or factor structure to apply to psychopathy. Again, this disagreement holds true for all age groups. Finally, although overlap of core personality features seems to exist, the manifestation of psychopathy in both children and adolescents may differ from the construct historically defined in adults. Which personality features are more essential to the conceptualization of psychopathy may differ by developmental age. While egocentricity and grandiosity appear most fundamental to adult psychopathic personality traits, both the factor loadings of the PCL:YV in adolescents and prototypical analysis of psychopathy in youth point to the greater importance of affective deficits (e.g., lack of empathy) in defining psychopathy in youth. In addition, some behavioral features may differ between adults and youth. Distinguishing important adult-youth differences in the psychopathy construct will allow researchers to better operationalize the construct in youth, leading to more accurate associations of psychopathy with important outcomes in this age group, as well as more targeted, successful interventions. At the same time, delineating the features common to both adults and youth may make it easier to study psychopathy longitudinally across age groups and shed light on the etiology of this disorder.

#### **CHAPTER 2**

### ISSUES IN THE ASSESSMENT OF PSYCHOPATHY

#### Temporal stability

Whether a downward extension of the adult model or a modified depiction of psychopathy is determined to be the best conceptualization of psychopathy in adolescents, some argue that the construct of psychopathy cannot be appropriately applied to adolescents given that many personal attributes and attitudes are in flux during this period of development (Edens et al., 2001). To date, no published studies have longitudinally assessed the stability of psychopathy in adolescents (Cruise, 2001). The lack of evidence relating to the reliability of psychopathy over time in this age group makes it impossible to know whether any model of psychopathy confirmed in adolescents reflects a stable trait or merely coincides with normal adolescent-limited characteristics that may change with age.

It is reasonable to question the stability of personality-based disorders in general, as well as psychopathy, in particular, during adolescence. Investigators have argued against the utility of the psychopathy construct during a developmental period marked by rapidly changing attitudes and behavior because many of its core features increase normatively during the adolescent years. Cognitive limitations in time and social perspective-taking, and changes in identity that are normative during adolescence may in large part account for high levels on several criteria of psychopathy, including a proneness to boredom, impulsivity, a lack of long-term goals, and egocentricity, along with social deviance (Arnett, 1992; Edens et al., 2001; Elkind, 1967; Salekin et al., 2001;

Spear, 2000). Measurements of psychopathy, defined a priori by enduring features of personality, may be confounded by these adolescent-limited characteristics.

Adolescence is a developmental period marked by a change in traits and behaviors that work to help the adolescent negotiate a drive for independence and acquire skills needed to function successfully in an adult world. This developmental change can be seen not just in humans, but also across a number of species. For example, rats in adolescence showed increases in social investigation and interaction, sensation seeking, and risk-taking (Spear, 2000). Likewise, human adolescents exhibit a normative increase in sensation seeking and risk taking. These increases may be related to changes to the adolescent brain. Neuropsychological advances over the last decade have allowed us to begin to outline the myriad changes to brain structure and connections that takes place during adolescence. Some of these changes, especially alterations to the prefrontal cortex and limbic regions, and modification of dopamine input to these regions, might be associated with increases seen in certain motivated behavior (Spear). Increases in sensation seeking and risk taking may impel adolescents to explore new places, situations, and people that assist in the separation from parents and identity formation.

Though an increase in risk taking and sensation seeking is normative and may promote important developmental outcomes, these increases can also lead to behavior that closely mirrors some of the criteria of psychopathy. For example, risk taking might manifest itself as involvement in illegal activities and antisocial behavior, and, because of the experimental nature of this behavior, it might be quite varied (Arnett, 1992; Spear, 2000). In addition, sensation seeking itself, as operationalized by Zuckerman, includes a subscale tapping boredom susceptibility, which is a criteria included in most

conceptualizations of psychopathy (Arnett). Further, high scores on the Disinhibition component of sensation seeking have been found in adult psychopaths (Zuckerman, 1984). Sensation seeking and risk taking increases may also lead to increases in impulsive behavior, as youth strive to experience more novel stimuli.

In terms of a lack of long-term goals, another psychopathy criterion, indecision about the future or having several, perhaps conflicting, future plans is considered normative for adolescents. In fact, in Loevinger's (1976) system of ego development, it is the last two stages - individual and autonomous - that are concerned with issues of establishing a clear identity. Before this point, youth are in a state of identity diffusion, marked by confusion about who they are and what they want to do in life. This ambiguous state may last into the third decade of life for many. Adolescents in the midst of identity diffusion will not have long-term plans. It is when they become adults and are expected to enter the work force and develop more long-term social relationships that aimlessness and a lack of clear goals will be judged as problematic.

Because these behavioral and social deviance criteria of psychopathy overlap with normative adolescent changes in sensation seeking, risk taking and ego development, psychopathy scores based on some items measuring these characteristics may be inflated. Studies have found that scores on the behavioral/social deviance factor of measures based upon the PCL-R were related to age in both adult and adolescent samples. In an investigation of 14-18-year-old juvenile delinquents, the younger the adolescent the lower the scores on the behavioral factor of the PCL: YV (Brandt et al., 1997). Harpur and Hare (1994) found that factor 2 scores of the PCL-R decreased with age over the lifespan of adult criminals. It should be noted that both of these studies were cross-

sectional in nature, so results should be interpreted cautiously.

In addition to certain behavioral criteria, some personality features of psychopathy might also be related to normative developmental changes in adolescence. Egocentrism is a failure to clearly understand where the self ends and the other begins (Elkind, 1967). As egocentrism extends into adolescence, it is further marked by the tendency to attribute one's own thoughts to others. This tendency creates the belief in adolescents that all others are just as preoccupied with them as they are with themselves. They create, in Elkind's terminology, an imaginary audience. The result of believing that everyone is captivated by one's life is a view of oneself as unique, special, and exceptional. It is posited that such views of oneself during adolescence can also be tied to newfound physical and cognitive abilities, and that such beliefs are integral to the individuation process. Yet, such beliefs could also lead to self-centeredness and grandiosity, inflating narcissism scores on psychopathy measures. There is a difference between normative narcissism and the pathological narcissism of psychopathy, even in adolescence (see Bleiberg, 1994), but it is possible that current measures of psychopathy, especially self-reports, may not be sensitive enough to discern between the two. Interestingly, many of the adolescent-limited characteristics outlined above that may inflate psychopathy scores are not included in the prototype of the youthful psychopath described by child psychologists (Salekin, et al., 2001).

Despite the potential overlap of psychopathic traits and normative adolescentlimited characteristics, and no evidence of the temporal stability of psychopathic traits in the same sample of adolescents (Cruise, 2001), cross-sectional studies provided some evidence to dispute the claim that psychopathic personality traits are unstable in

adolescence. When investigators compared samples of younger and older adolescents, they found similar levels of psychopathy across age groups (Forth, Hart, & Hare, 1990; McBride, 1998). These traits may in fact be stable across this period. However, crosssectional data are not conclusive and longitudinal results are needed to address the question of stability.

#### Gender

To date, most studies of psychopathy in both adult and youth populations have utilized male-only samples. Because many of these studies involved criminal populations, male samples were generally more prevalent and, hence, more accessible. Yet, as with investigations of conduct disorder and antisocial behavior (e.g., Fergusson & Horwood, 2002; Moffitt, Caspi, Rutter, & Silva, 2001; Silverthorn, Frick, & Reynolds, 2001), researchers are beginning to examine psychopathy in females and uncovering possible differences in the construct between the genders.

The term "gender differences" is one that has been used broadly. When comparing males and females on variables of interest, those comparisons can be made on a structural level, or on the basis of mean differences or differences in prevalence rates. When examining gender differences in psychopathy, investigators have looked at all of these types of differences.

Although studies of psychopathy in women are limited in number, in those focusing on structural gender differences, preliminary evidence with adult females suggests that differences in psychopathy between males and females stem largely from differences in behavioral characteristics and social deviance items. Males and females do not appear to differ greatly on the affective and narcissistic/interpersonal characteristics.
For example, Salekin, Rogers, and Sewell (1997), in a test of Hare's two-factor model with a sample of female offenders using the PCL-R, found that of the nine original factor 2 items, only three loaded cleanly on factor 2 for the females ("parasitic lifestyle," "early behavioral problems," and "juvenile delinquency"). Four other original factor 2 items cross-loaded across both factors in the female sample, whereas two others failed to load above .40 on either factor. Additionally, two items – "promiscuous sexual behavior" and "criminal versatility" - that are part of the total psychopathy score but not part of either factor in the original model, load onto factor 2 for the females. Interestingly, factor 1 items remained the same for both males and females.

Another investigation by Frick, Barry, and Bodin (2000) compared elementaryschool age boys and girls on a three-factor model of psychopathy as measured by the APSD. These authors found similar factor structure for both genders in this community sample. Yet, two differences were noted. One, there were more cross-loadings between items on the impulsive and narcissistic factors for girls than for boys. Two, the dimension defined by the affective deficits of psychopathy explained the most variance in the boys' model, whereas this factor explained the least amount of variance in the girls' model.

An investigation of children and adolescents found gender differences in the conceptualization of psychopathy in this age group as rated by child clinical psychologists (Salekin et al., 2000). Prototypical analyses differed for boys and girls age 6-18, driven mainly by differences in the behavioral criteria of psychopathy. Typical features for boys included aggressive and violent behavior (e.g., rape, used a weapon, bullies or intimidates others, physically cruel to animals, deliberately destroyed others'

property), whereas psychopathic girls were described as displaying less aggressive, but still oppositional behavior. Psychopathic girls were also described as sexually promiscuous, whereas this was not a criterion applied to boys. The affective and narcissistic personality features proposed as prototypical of psychopathy, including "does not feel bad or guilty," "uses or cons others," "is not concerned about the feelings of others," and "lies skillfully and easily" were rated similarly for both genders. As with adult samples, the prevalence rate of psychopathy for girls was less than for the boys. Salekin et al. (2000) hypothesized that the lower prevalence rate of psychopathy for girls found in their study and in previous ones might be explained by the behavioral differences between boys and girls. Specifically, these authors suggested that boys and girls might not differ on the personality facet of psychopathy, but that the prevalence for girls declines when antisocial behaviors are added to the construct.

The gender differences in psychopathy demonstrated in both adult and youth samples have also been explained as not due to actual differences in the construct of psychopathy, but due instead to gender bias in the measurement of psychopathy. Grann (2000) compared 36 male and female adult violent offenders matched for demographic variables as well as index crime and number of previous violent convictions on each of the 20 items of the PCL-R. For most items, no gender differences were discovered. Yet, several items discriminated between male and female offenders. Men more often endorsed the items lack of empathy/callousness and juvenile delinquency, while women more often scored higher on sexual promiscuousness. Similar to findings in the studies examining factor structures across gender, odds ratios demonstrated that most of the items differing between men and women were behavioral/social deviance items (i.e.,

impulsivity, irresponsibility, criminal versatility). While Grann speculated that these differences might reflect an actual difference in characteristics, he also hypothesized possible gender bias on the part of the administrator of the PCL-R, which includes both interview and file review procedures.

In terms of prevalence rates of psychopathy, Salekin et al. (1997) found lower prevalence rates in their female sample than found previously in male samples. Whereas prior investigations with male offender samples reported prevalence rates of approximately 25%-30% using a PCL-R cut-score of 29; only 16% of the female sample scored above this cut-score. It should be noted that the original two-factor model proposed that the two dimensions are correlated while Salekin et al. (1997) employed an orthogonal varimax rotation when testing this model in females.

An unpublished dissertation study (Murphy-Peaslee, 2000) provided evidence for mean level gender differences in psychopathy, again stemming mostly from differences in behavioral and social deviance criteria. This investigation compared the PCL-R scores and Rorschach variables of psychopathic male and female adult offenders. Men and women scored similarly on factor 1 of the PCL-R, but men scored higher on factor 2, indicating higher levels antisocial/criminal behavior in the psychopathic men. The author theorized that the behavioral expression of psychopathy might differ across genders.

Conversely, other studies have revealed similar mean levels of psychopathy for men and women. In an investigation of violent offenders, mean PCL-R total scores were slightly higher for men than women, but not significantly different (M = 19.42 and M =17.78). This pattern also held for both factor scores (Grann, 2000). Subjects from a methadone treatment program also only differed slightly on mean PCL-R total scores,

with men scoring slightly higher (Piotrowski, Tusel, Sees, Banys, & Hall, 1995). In another examination of psychopathy among individuals in drug treatment, men scored significantly higher than women on total, factor 1, and factor 2 (Rutherford, Alterman, Cacciola, & McKay, 1998). Males and females in this study demonstrated similar correlations between all PCL-R scores and antisocial behavior during youth (i.e., Conduct Disorder) and adulthood (i.e., Antisocial Personality Disorder). Though, there was one significant gender difference; a stronger association between total and factor 1 scores and adult antisocial behavior was found for women as compared to men.

Similar discrepancies in the findings of gender differences in the prevalence of psychopathy have been demonstrated in adolescent samples. In a small clinical sample (N = 30), Myers, Burket, and Harris (1995) found a large, significant mean difference in the total psychopathy scores of adolescent boys and girls as measured by the youth version of the PCL-R. Oppositely, Loper, Hoffschmidt, and Ash (2001), using a different measure of psychopathy, the Psychopathy Content Scale, found no mean differences for male and female adolescents incarcerated in a state juvenile correctional facility (M = 9.69 and 10.80, respectively).

Overall, studies have demonstrated variable prevalence rates of psychopathy between males and females, for both adults and youth. Yet, many investigations comparing the factor structures and item responses across genders have suggested that the conceptualization of psychopathy also might differ between genders. This difference appears to be mostly associated with the behavioral and social deviance criteria of psychopathy, implying that men and women might manifest differing behavioral expressions as part of the psychopathic disorder.

#### **CHAPTER 3**

#### PSYCHOPATHY AND ITS RELATIONSHIP TO VIOLENCE

#### Psychopathy and conduct disorder

Like adults diagnosed with ASPD, adolescents with Conduct Disorder (CD) display significant levels of aggression, defiance of authority, and behavior that is frightening and disturbing to others. Many of these behaviors continue into adulthood (Valentine, 2001). One difficulty facing those who treat CD adolescents and children is the heterogeneity of those diagnosed with the disorder. As with antisocial adults, to address this heterogeneity, investigators have attempted to delineate subgroups of antisocial adolescents and children to better aide earlier intervention and treatment. Previous attempts to classify these heterogeneous subgroups focused on the type, pattern, developmental nature, or timing of conduct problems (Lynam, 1997). Longitudinal studies have shown that different subgroups of delinquents have distinct developmental correlates and trajectories (McBride, 1998). For example, children who are fearless and impulsive develop empathy and guilt less easily than other children, which may lead to higher rates of aggression (see Kochanska, 1991; Lykken, 1995).

Yet, it has only been recently that classification efforts have started to focus on personality characteristics as a basis for groupings, a methodology that has shown promise with antisocial adults. Lynam (1997) suggested that personality traits associated with psychopathy might be used at the childhood level to describe a homogeneous subgroup of CD children and adolescents. In adults, the psychopathic subgroup of conduct disordered/antisocial persons appear homogeneous in terms of their pattern of

offending (more violent), resistance to treatment, and psychophysical and linguistic measures (McBride, 1998; see Hare, 1998; Lykken, 1995). Antisocial youth who also exhibit psychopathic personality traits might characterize a similar subgroup.

There have been past efforts to apply concepts similar to psychopathy to youth in order to better understand subgroups of conduct disorder (Frick, 2000). Lynam (1996) theorized that children high in both conduct disorder/oppositional defiant disorder and Attention Deficit Hyperactivity Disorder (ADHD) exhibit antisocial behavior and neuropsychological correlates similar to adults with psychopathy. Lynam (1998) showed that 12-13 year old boys high in both ADHD and CD demonstrated several characteristics associated with psychopathy; these characteristics were not associated with either ADHD or CD alone. In a study of adult inmates, those retrospectively diagnosed with both childhood CD and ADHD had significantly higher scores on PCL-R Total, factor 1, and factor 2 scales than those with CD alone (Vitelli, 1998). The childhood CD/ADHD group also was more likely to have a history of childhood violence. Similarly, in another study, the undersocialized aggressive CD subtype demonstrated poorer treatment prognosis, higher rates of failure on conditional release, and higher rates of recidivism much like adult psychopaths (Quay, 1987). The undersocialized aggressive CD subgroup was characterized by ADHD, aggression, poor peer relationships, and lack of empathy, a description that closely resembles the depiction of psychopathy. Yet, the similarities between the CD/ADHD and undersocialized aggressive subgroups, and adult psychopaths appear to be mainly on a behavioral level (McBride, 1998).

Frick (2000) suggested that in delineating subgroups of CD it is important to distinguish between children who do and do not demonstrate the affective and

interpersonal traits associated with psychopathy in adulthood. He and his colleagues (Barry et al., 1999; Barry, Frick, DeShazo, McCoy, Ellis, & Loney, 2000; Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick, Cornell, Barry, Bodin, & Dane, 2001) have found that children who display personality characteristics that correspond to psychopathic traits in adults exhibit a greater severity of aggression than children who do not have those characteristics. Barry et al. (2000) investigated 6- to 13-year old clinicreferred children that presented with CD and ADHD or ADHD only. They also assessed for the presence of callous-unemotional traits, which correspond to the affective and interpersonal deficits associated with psychopathy, e.g., lack of guilt, absence of empathy, and shallow and constricted emotions. They found that the children with conduct problems and ADHD plus callous-unemotional traits (CU), as compared to a conduct/ADHD group without CU traits and a control group, more often displayed characteristics commonly associated with psychopathy in adulthood. These characteristics included greater severity and variety of antisocial behavior, more early contact with police, a reward-dominant response style/avoidance learning deficits, a preference for thrill and adventure seeking activities, and fewer intellectual deficits.

The ADHD/conduct problem group also differed from the ADHD/conduct problem plus CU trait group along other lines. Those with high levels of CU traits did not have elevated levels of anxiety when compared to other groups, while those high on CD/ADHD and low on CU traits had the highest level of anxiety of all the groups. Frick et al. (2001) found similar results using a non-referred sample of elementary school children. Those children assessed as high on both conduct problems and CU traits exhibited extremely high levels of aggression after one year. In addition, these children

displayed high levels of both reactive and instrumental aggression. Children with conduct problems but without CU traits exhibited lower levels of overall aggression and were especially lower on instrumental aggression.

The CD/ADHD plus CU traits group that demonstrated a continuity of aggression and antisocial conduct over time best fits with Moffitt's (1994) description of life-course persistent antisocial behavior. Moffitt distinguished between life-persistent and adolescent-limited antisocial behavior. The life-persistent course is characterized by child-onset and continuity of antisocial behavior throughout adolescence and into adulthood. Conversely, the adolescent-limited type is defined by adolescent onset, temporal instability, and inconsistency across situations. Moffitt hypothesizes that neuropsychological deficits lay the groundwork for the persistent course, but lasting antisocial behavior only develops if certain environmental conditions are present to create increasingly difficult behavior and a lack of prosocial skills. The theory of life-course persistent antisocial behavior stresses the idea that the environmental conditions are constantly reacting to a person's underlying trait, leading to the pervasiveness of an antisocial attitude throughout all domains of a person's life. As Frick and his colleagues work has demonstrated, traits associated with psychopathy appear to be related to continuity of aggression over time in children, which is consistent with the theory of lifecourse persistent antisocial behavior.

## Evidence of the psychopathy-violence association in adolescent populations

Though Frick and colleagues have attempted to apply personality traits similar to adult psychopathy to school-age children, other investigators (e.g., McBride, 1998; Toupin et al., 1995) have suggested that more knowledge about the disorder in

adolescence is needed to better understand its relationship to conduct disorder, violence, and adult psychopathy before applying it to younger children. Investigators have posited that it is important to understand the underpinnings of antisocial behavior and violence in adolescence because studies of crime reveal that criminals rarely begin their antisocial activity as an adult. Instead, this activity is generally established by late adolescence (Moffitt, 1994). To date, studies of adolescents utilizing the two-factor conceptualization of psychopathy have found similar associations between psychopathy and violence and recidivism to that found in adults. Using total psychopathy scores that combine both factors, most investigations have demonstrated correlations between psychopathy and diverse measures of aggression and violence (e.g., Conduct Disorder symptoms, verbal and physical aggression, violent recidivism, previous violent offenses, violent institutional infractions, time to violent re-offense) in the range of r = .20 to r = .60(Brandt et al., 1997; Caputo, Frick, & Brodsky, 1999; Edens et al., 1999; Forth, Hart, & Hare, 1990; Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001; Loper, Hoffschmidt, & Ash, 2001; Murdock Hicks, Rogers, & Cashel, 2000; Myers, Burket, & Harris, 1995; Rogers, Johansen, Chang, & Salekin, 1997; Toupin, Mercier, Dery, Cote, & Hodgins, 1995). Such similarity of associations between psychopathy and violent/aggressive outcomes supplies some support for the downward extension of adult conceptualization of psychopathy to adolescents.

Along these lines, most studies of psychopathy in adolescence have utilized the PCL:YV. Using this instrument, Forth et al. (1990) showed that total psychopathy scores of adolescent male offenders significantly correlated with the number of CD symptoms (r = .64), the number of previous violent offenses (r = .27), the number of institutional

charges for violent or aggressive behavior (r = .46), and number of total charges or convictions for violent offenses (r = .46). In an examination of 50 male, racially diverse adolescents in a youthful offender prison, Edens et al. (1999) investigated the relationship between both the modified youth version of the PCL-R and the Psychopathic Personality Inventory (PPI, Lilienfeld & Andrews, 1996), and disciplinary infractions committed while incarcerated. Both PCL-R and PPI total scores correlated significantly albeit not that strongly with combined physically aggressive and verbally aggressive/defiant infractions (r = .28 and r = .24, respectively).

Also, in an investigation of the relation between psychopathy and institutional infractions involving 120 male adolescent offenders, researchers (Murdock-Hicks et al., 2000) found that youth high in psychopathy (score  $\geq 17$  as measured by the 12-item shortened version of the PCL-R, the PCL: SV) committed significantly more total, nonviolent, and violent infractions than adolescents classified as non-psychopathic (score < 17). Interestingly, these investigators also found that total PCL: SV scores were significantly correlated with the number of violent and nonviolent infractions only for African-American youth. Rogers et al. (1997) looked at PCL: YV psychopathy scores, Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) symptoms, and institutional infractions in a sample of 81 boys and girls in a residential treatment program for dually diagnosed juvenile offenders. They found that neither the number of ODD nor aggressive CD symptoms related significantly to verbally aggressive or physically aggressive infractions, or treatment non-compliance. Conversely, PCL: YV total scores were significantly correlated with physical aggression (r = .28) and treatment non-compliance (r = .25).

Also utilizing the youth modified version of the PCL-R, Brandt et al. (1997) examined 130 boys aged 14 to 18 released from a training facility for juvenile offenders who had committed three or more felonies. Total psychopathy scores were significantly related to a history of crime severity (r = .25), the number of prior commitments (r = .49), number of conduct disorder symptoms measured during commitment at the training facility (r = .48), Child Behavior Checklist Aggression scale (r = .31), and the number of verbal (r = .31), physical (r = .28), and total (r = .24) major infractions committed during the youths' stay at the facility. After release from the training facility, those adolescents whose scores on the modified PCL-R (> 27) placed them in the high psychopathy group had a significantly shorter length of time before re-arrest for a violent offense. In another study of 220 male adolescent sex offenders who completed an outpatient sex offender treatment program, those youth in the high psychopathy group (score  $\geq 30$ ) were significantly more likely than the low group (score < 18) to commit general, violent, and sexual offenses during an average follow-up period of 55 months (Gretton et al., 2001). In addition, survival analysis showed that offenders in the high psychopathy group committed general and violent offenses significantly sooner than those adolescents in the low psychopathy group. Psychopathy, as measured by the PCL:YV, continued to contribute to the prediction of both general and violent re-offense even after controlling for offense history.

Examinations of psychopathy with adolescents in treatment facilities have yielded similar results to those studies involving offender samples. In an investigation of 30 adolescent inpatients, those youth who reported committing several serious delinquent behaviors, such as causing serious injury during a fight, stealing, vandalism, breaking and

entering, a history of arrests, and purposely injuring or killing animals, had significantly higher youth-modified PCL-R total scores than those adolescents who reported not participating in such behavior (Myers et al., 1995). Using the French version of the PCL-R:YV with a sample of boys in various treatment programs, investigators found that total psychopathy scores significantly predicted delinquency, aggressive behavior, and the number of aggressive conduct-disorder symptoms after one year (Toupin et al., 1995).

Measures of psychopathy other than the PCL-R or its modifications have been employed with adolescents and yielded similar results. In a sample of serious male juvenile offenders, Kruh, Frick, and Clements (2001) found, after controlling for historical risk indices, social desirability, and demographic variables like age and education, that the presence of psychopathic personality traits measured by the APSD significantly predicted severity and variety of violence history. Offenders whose violence was characterized as indiscriminate had higher psychopathy scores than those offenders whose violence was described as a provoked single incident. In addition, adolescents with a history of violence against women, multiple violent incidents against the same victim, unprovoked violence, or violence committed with a weapon had significantly higher psychopathy scores than adolescence without such a history. Using the Psychopathy Content Scale (Murrie & Cornell, 2000), a measure based on items from the Millon Adolescent Clinical Inventory and designed to have content similar to the PCL-R, to measure psychopathy, investigators studied the instrumentality, empathy/guilt, and reactivity reported by adolescents for a particular violent incident. They found that higher levels of instrumentality and lower levels of empathy/guilt reported by juvenile offenders were both significantly related to higher Psychopathy Content Scale scores

(Loper et al., 2001).

Unpublished dissertation studies investigating psychopathy and violence in adolescents have reported similar results to those outlined in the published articles. In a study of 233 male adolescent offenders from a sex offender treatment program assessed with the PCL:YV, the number of nonviolent and violent crimes, and criminal versatility were positively associated with psychopathy (McBride, 1998). Conversely, age at first arrest was negatively related to total psychopathy and both PCL:YV factors. Ridenour (1996) showed that adolescent psychopathic classification (score  $\geq$  30) predicted future incarceration after one year after administration of the PCL-R: YV (80% of psychopaths and 21% of non-psychopaths). In addition, youth-modified PCL-R scores accounted for a significant percentage of variance in future violent (26% of variability) and non-violent (40% of variability) offenses. Total psychopathy scores accounted for unique variance in future offending after controlling for SES, age of first offense, and other variables related to Moffitt's Conduct Disorder Taxonomy.

Also using the PCL: YV to assess psychopathy, Gretton (1999) found that adjudicated adolescents who were retrospectively diagnosed with psychopathy exhibited higher rates of violent offenses, committed crimes earlier following release, and had a greater likelihood of escaping from custody over a 10-year follow-up period than nonpsychopaths. In addition, when the psychopathic group reached early adulthood, the number of nonviolent crimes committed by this group did not differ from nonpsychopaths, whereas the difference between psychopaths and nonpsychopaths on number of violent offenses increased as the participants aged. In a study of female incarcerated adolescents, Bauer (2001) found that those classified as psychopathic by the

PCL: YV had a greater number of Conduct Disorder symptoms, greater alcohol dependence, earlier onset of criminal behavior, and more institutional violence. Within an inpatient hospital setting, adolescents with higher psychopathy scores demonstrated more overall aggression and higher rates of aggression toward both peers and staff than those scoring lower in psychopathy (Stafford, 1998). In addition, those youth higher in psychopathy displayed both reactive and instrumental aggression while adolescents lower in psychopathy demonstrated only reactive aggression.

Notably, much of the research assessing psychopathy in adolescence and its relation to violence has utilized the two-factor model of psychopathy, but employed only total psychopathy scores as the measure of psychopathy. Few published studies have examined the two factors separately. Work by Brandt et al. (1997), Edens et al. (1999), and Rogers et al. (1997) are exceptions, with all these groups of investigators finding small but significant correlations between each of the factors and different types of institutional infractions, as well as other measures of aggression and conduct symptoms. The investigation by Edens et al. revealed that both factor 1 and 2 of the PCL: YV were significantly correlated with combined physically aggressive and verbally aggressive/defiant institutional infractions (r = .30 and r = .28), although only factor 2 scores related significantly to physically aggressive acts alone (r = .24). Conversely, Rogers et al. found that both factor 1 and 2 related at the same significance level to institutional infractions involving physically aggressive behavior (r = .30 for both). Like the Rogers et al. investigation, Brandt et al. found that both factor 1 and 2 of the PCL: YV related significantly to major verbal and physical aggressive infractions while committed, as well as the number of prior commitments, the number of Conduct Disorder

symptoms, CBCL externalizing and aggression scales, and the number of Intensive Supervision Program placements. Only factor 1 scores were significantly associated with a history of crime severity, whereas only factor 2 scores were significantly correlated with total number of major infractions committed and the ratio of negative to positive reviews.

In an investigation of different types of juvenile offenders, namely sexual offenders, other kinds of violent offenders, and non-contact offenders, researchers, employing the APSD, found that the groups differed significantly on the scale assessing Callous-Unemotional traits (analogous to affective deficits of PCL-R factor 1). Specifically, 35% of sex offenders had elevated scores on the CU scale with only 6% and 7% of the violent offender and non-contact offender groups, respectively, showing similar elevations. The groups did not differ on the Impulsivity/Conduct Problems scale (similar to PCL-R factor 2), with approximately 25% of each group demonstrating elevations on the I/CP scale (Caputo et al., 1999).

In addition to these published reports, McBride (1998) reported in her dissertation study that both PCL: YV factors had similar associations with outcome measures (i.e., number of violent/nonviolent crimes, criminal versatility). Similarly, Gretton's (1999) retrospective study revealed that both PCL:YV factors were similarly and significantly associated with number of Conduct Disorder symptoms and number of violent offenses committed per year (over a 10-year period). Yet, some studies do reveal differential correlates for the two factors. A study of gang membership found that incarcerated adolescents who reported gang affiliation exhibited higher levels of PCL factor 1 than factor 2 scores (King, 1997). Ridenour (1996) found that PCL-R:YV factor 1 scores

were more significantly related to the number of violent offenses committed after release from a treatment facility than were factor 2 scores ( $R^2 = .23$  and .19 respectively, though both p < .01). Conversely, higher factor 2 scores were more associated with the number of nonviolent offenses than were factor 1 scores ( $R^2 = .36$  and .29, respectively, both p <.01). Cruise (2001) demonstrated that only PCL: YV factor 2 scores significantly predicted total institutional infractions and new detentions for those juveniles released from the detention facility. Conversely, in this study, factor 1 scores exhibited little relationship to any external outcome measure (all assessed within three months of the assessment of psychopathy).

Overall, these studies have shown that both the personality-based factor 1 and social deviance factor 2 of the PCL-R exhibit similar levels of associations with important outcomes like physically and verbally aggressive institutional infractions, number of prior arrests, and measures of aggression and CD. Factor 1 scores appear to be more related to crime severity and variety, and possibly more related to sexual types of offenses. Factor 2 scores seem to relate more strongly to total number of institutional infractional infractions (both aggressive and non-aggressive).

Although several studies have examined the differential association of each of the factors with violent and aggressive outcomes, only one published study to date (Brandt et al., 1997) has assessed the incremental validity of psychopathy over other factors to predict violence in adolescents. Yet, this type of analysis is necessary to determine whether psychopathy and/or its dimensions are important over and above other violence-related factors. When Brandt et al. considered the incremental prediction of each of the psychopathic factors, both added significantly to the prediction of the total number of

violent post-release offenses. After demographic, criminal history, and psychometric (i.e., # of Conduct Disorder symptoms, MMPI and CBCL scales, IQ, and training facility behavioral indicators) variables were entered into the hierarchical regression equation, factor 2 scores accounted for an additional five percent of the variance while factor 1 scores accounted for three percent more of the variance over and above factor 2 scores.

Though Brandt et al. (1997) assessed the predictive ability of other variables before considering psychopathy, they did not consider several other factors found to be related to violence in adolescent populations. Lipsey and Derzon (1998) used metaanalytic procedures to determine the best predictors of violence for children age 6-11 and adolescents age 12-14. For the latter age group, lack of social ties (social anomie) (.39), involvement with antisocial peers (.37), and commission of general offenses (.26) were the strongest predictors of violence. In addition, Hawkins et al. (2000) reviewed studies assessing the longitudinal (retrospective or prospective) prediction of physical interpersonal violence in juveniles. These authors listed delinquent peers and gang membership, poor family management practices (no clear parental expectations of children's behavior, poor supervision, and severe and inconsistent discipline), and physical abuse or neglect history as significant predictors of later violence. Early aggressive behavior and involvement in other kinds of antisocial behavior were violence predictors for males, while poor academic achievement was more strongly related to violence for females than for males.

These findings of correlates to adolescent violence mesh with Moffitt's (1994) theory of life-course persistent antisocial behavior. As noted earlier, this theory posits that underlying trait deficits continually interact with certain environmental conditions,

leading to continuity and pervasiveness of antisocial behavior. The type of environmental conditions outlined by Moffitt include poor family attachment bonds and inconsistent child-rearing practices, lack of school achievement, parent and sibling deviance, and socioeconomic status, as well as other person variables. Additionally, the theory of life-course persistent antisocial behavior hypothesizes that one issue that maintains an antisocial lifestyle is a person's dearth of knowledge of prosocial behavior. The neuropsychological deficits lead to a difficult temperament, leading to both parent and peer rejection. Because of such rejection, an individual is not able to establish a repertoire of prosocial behavior, precluding him/her of creating bonds with prosocial peers throughout development. This failure leads to more associations with other antisocial peers. This theory and the empirical findings of important correlates to violence and antisocial behavior make it important to consider other predictors of violence in adolescents when investigating the predictive power of psychopathy.

#### **CHAPTER 4**

# CONCLUSION

In sum, this study helps to elucidate the nature, structure and stability of psychopathy and its relation to severe and violent offending during the adolescent years. This study examines the fit of previously proposed models of psychopathy in an attempt to find the best model for adolescents. In addition, it investigates the stability of psychopathy and its dimensions over time during this stage of development. Finally, the present investigation assesses the ability of psychopathy and its dimensions to predict violent behavior after controlling for social anomie, association with delinquent peers, and poor parental supervision that have been found to be related to violence in adolescence.

#### Hypotheses

Hypotheses are as follows:

1. A non-deviance model of psychopathy will be superior to a model that includes criteria assessing social deviance.

2. A theoretical model conceptualizing psychopathy as a multidimensional construct defined by three factors - affective, narcissistic, and behavioral - will be superior to a model that includes only two factors with the affective and narcissistic traits combined onto the same factor.

3. The affective dimension will demonstrate greater structural stability and relative stability over time than either the narcissistic or behavioral dimensions.

4a. The affective and narcissistic dimensions will replicate across gender better than the

structure of the behavioral factor.

4b. Males will display higher levels than women for each of the psychopathy dimensions. 5. Adolescent offenders with higher levels of psychopathy will exhibit higher levels of aggression after a year's duration than adolescents with lower levels of psychopathy, independent of initial individual differences in family income, parental supervision, the youth's association with delinquent peers, and the youth's lack of social ties.

# CHAPTER 5

# METHOD

## **Participants**

The 149 youth who were part of this study were participating in a larger research project looking at offender trajectory over a one-year period. These youth were between the ages of 10 and 16 years of age (M = 14.7, SD = 1.35). Most (n = 142) were recruited over a two-year period following their appearance before a Hearing Officer in the Clinton County, Michigan Juvenile Justice Court or were referred by a Court Probation Officer during the same period (n = 7). Close to two-thirds of the sample was male. The majority were Caucasian (see Table 3). The children's grade level ranged from 4<sup>th</sup> to 11<sup>th</sup> with a mean of 8.94 (SD = 1.4). A parent of each of the juveniles also participated. For a majority of the youth, biological mothers completed the parent report (74.7%). Other informants were the youths' biological fathers (18.8%), grandmothers (3.2%), stepfathers (1.9%), stepmothers (0.6%), or other relatives (0.6%).

At Time 2, 89 youth remained in the study (see Table 3). Most of the families were lost at Time 2 because they could not be located after a year in spite of precautions set up to avoid this source of attrition (i.e., participants gave a friend's number when they signed up). A few families declined to participate in the second wave of data collection and one youth died in the year between the first and second wave. At Time 2, the mean age was 15.9 years (SD = 1.28) and ranged from 12 to 18. Similar to Time 1, approximately two-thirds of the sample at Time 2 was male. The ethnic breakdown of the youth remaining at Time 2 was also similar to Time 1.

The juveniles came before the court for a variety of offenses ranging from assault and battery or arson to minor in possession of tobacco or curfew violations. Although Table 3

Sample demographics at Time 1 and Time 2.							
	<u>Tir</u>	<u>ne 1</u>	<u>Time 2</u>				
Demographic	Percent	n	Percent	n			
Gender							
Male	61.7	92	65.2	58			
Female	38.3	57	34.8	31			
Ethnicity							
Caucasian	73.8	110	78.7	70			
Mixed	14.8	22	10.1	9			
Hispanic	4.7	7	5.6	5			
Native American	4.7	7	4.5	4			
African American	1.3	2	0.0	0			
Asian	0.7	1	1.1	1			

most (86.8%) were facing charges on only one offense, this number ranged from one to four. Fifty-one percent of the sample reported no prior arrests and approximately 30% reported one prior arrest. Approximately 8% of the sample reported two previous arrests and 11% said they had been arrested three times before participating in the study. Measures

Measures of psychopathy. The study used two measures of psychopathy. The first was the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, 1995). This 24item adolescent self-report measure is designed to assess the two dimensions of

psychopathy measured by the PCL-R in a non-criminal population (see Table 4). Items are assessed on a 1 to 4 scale (strongly disagree to strongly agree). For this study, approximately half of the items were reworded to more closely match the education and reading level of the subjects. For example, the item "success is based on survival of the fittest; I am not concerned about the losers" became "success depends on winning and how strong a person is. I don't worry about the losers." Three items ("I let others worry about higher values; my main concern is with the bottom line," "I don't plan anything very far in advance," "Love is overrated") from the original LSRP were dropped because they were judged to be age inappropriate. The scale was imbedded in a longer (139 item) self-report instrument, the Youth on the Fringe Survey (YOFS, Frank & Schettini, 2001).

The YOFS is actually a compilation of items from several different already published instruments for adolescents. All 149 youth in the study had LSRP data. Because the LSRP did not include social deviance items, three items stemming from other measures, sexual promiscuity, criminal versatility, and juvenile delinquency, were added to the LSRP when it was used in a social deviance model. The sexual promiscuity item came directly from the adolescent version of the Functional Impairment Scale (FISCA) described below (i.e., "During the past 3 months, how often did you act sexually promiscuous or loose, engage in high risk sexual behaviors, or have unprotected sex"). Juvenile delinquency was also based on the mean score of the Delinquency scale from the FISCA. The criminal versatility item was the sum of the number of crimes charged in the current Hearing and the number of times arrested reported in the past, which also came from the FISCA.

The second psychopathy measure employed in the study was the Antisocial

# Table 4

Items from the Levenson Self Report of Psychopathy Scale (LSRP).

- 1. I am often bored
- 2. I'm able to go after one goal for a long time\*
- 3. I feel bad if my words or actions make someone else feel bad\*
- 4. Success depends on winning and how strong a person is. I don't worry about the losers
- 5. People who are stupid enough to get ripped off usually deserve it
- 6. I tell other people what they want to hear so that they will do what I want them to do (I butter them up)
- 7. I have been in a lot of shouting matches with other people
- 8. For me, what's right is whatever I can get away with
- 9. I like playing with other people's feelings
- 10. I quickly lose interest in the tasks I start.
- 11. I try not to hurt other people when I go after what I want\*
- 12. Making sure I look out for myself is the most important thing to me
- 13. I often look up to people who can rip people off (cheat others) and get away with it
- 14. Even if I were trying to sell something, I wouldn't lie about it\*
- 15. In today's world, I feel okay about doing anything I can get away with to succeed
- 16. I would be upset if I succeeded because of someone else's loss\*
- 17. Cheating is not fair because it is unfair to others\*
- 18. Making a lot of money is my most important goal
- 19. Most of my problems are due to the fact that other people just don't understand me
- 20. Before I do anything, I think about all the things that can go right or wrong\*
- 21. When I get frustrated, I often "let off steam" by blowing up
- 22. I say no when someone wants me to do things I know are wrong or dangerous\*
- 23. My main purpose in life is getting as many goodies as I can

\*indicates reversed-scored item

<u>Process Screening Device (APSD; Frick & Hare, in press)</u>. The APSD is a 20-item *parent-report* scale derived from Hare's PCL-R to assess the parents' view of psychopathic traits in their children or adolescents (see Table 5). The measure has been used with youth age 6 to 18. Items are scored on a three-point scale from 1 (the item does not apply at all to your child) to 3 (applies very much to your child). The APSD was introduced into the larger study of which this investigation is a part after the study was underway. Therefore, data for the APSD is not available for all of the 149 participants, but for 79 participants at Time 1. The APSD includes a single social deviance item (item 20).

*Measures of additional variables.* An <u>Aggressive Behavior Scale</u> was developed for this study using items from the Functional Impairment Scale for Children and Adolescents (FISCA; Frank, Paul, Marks & Van Egeren, 2000; Frank, Van Egeren, Fortier, & Chase, 2000). The FISCA is available in a parent and youth self-report version (both were used in this study), identical in content, and each consisting of 184 items used to identify mild, moderate, or severe impairment in eight domains of child and adolescent functioning. The present study sampled items from the Delinquency and Control of Aggression domains for each respondent, yielding identical parent and youth versions of the Aggressive Behavior Scale. Each item was scored on a 3-point Likert scale (0 to 2), indicating frequency of occurrence (never, occasionally, often).

An exploratory factor analysis (EFA) performed on 38 items from the Delinquency and Aggression domains used data at time 1 to test the prediction that items which assess violent behavior and aggression would hang together, forming an aggressive behavior scale. The EFA produced two scales, one of which was made up of all 21 items

# Table 5

# Items from the Antisocial Process Screening Device (APSD).

- 1. Blames others for mistakes
- 2. Engages in illegal activities\*
- 3. Is concerned about how well does at school/work (r)
- 4. Acts without thinking of the consequences
- 5. Emotions seem shallow not genuine
- 6. Lies easily and skillfully
- 7. Good at keeping promises (r)
- 8. Brags excessively about abilities, accomplishments
- 9. Gets bored easily
- 10. Uses or cons others to get what want
- 11. Teases or makes fun of others
- 12. Feels bad or guilty when he does something wrong (r)
- 13. Engages in risky or dangerous activities
- 14. Can be charming at times insincere or superficial
- 15. Becomes angry when corrected or punished
- 16. Seems to think he or she is more important than others
- 17. Does not plan ahead
- 18. Is concerned about the feelings of others (r)
- 19. Does not show feelings or emotions
- 20. Keeps the same friends (r)

# \*social deviance item

from the Control of Aggression scale plus five items from the Delinquency scale, all involving aggression towards property or person (see Table 6). Internal consistency, measured by alpha coefficients, was .91 for the parent report version of the Aggressive Behavior Scale and .85 for the youth-report version. Reliability using time 2 data was comparable ( $\alpha = .91$  for the parent scale and  $\alpha = .81$  for the youth scale). The second factor consisting of 12 items and assessing non-aggressive behavior was not used in this study.

The three additional measures that were used in the predictive analyses, the social anomie, association with delinquent peers, and lack of parental supervision scales, were each tested with a CFA procedure to assess that all items loaded onto the construct as predicted; all items loaded as predicted on the models, at or above .10 (standardized estimate). The <u>association with delinquent peers scale</u> included eight negative peer items from the YOFS. These items assessed how often in the past year the youth's friends had participated in various types of delinquent behavior (i.e., take things that do not belong to them, bang up or destroy things of some value on purpose, fight with someone with a weapon, smoke cigarettes, speak foul language, have sexual intercourse, read pornography). The items were measured on a five-point scale (never to very often). The alpha coefficients at time 1 for the association with delinquent peers scale was .89 and .88 at time 2.

The <u>social anomie scale</u>, measuring the juveniles' lack of social ties, was made up of six items from the YOFS: "I have trouble getting along with adults," "I feel like I am part of this school" (reversed), "I feel close to people at this school "(r), "I can't seem to keep people as friends for very long," "I am not really accepted and liked," and "I often

# Table 6

# Items from the Aggressive Behavior Scale.

1. Argue or fight with other kids

2. Bully, threaten, or shove other kids

3. Tease, ridicule, or pick on other kids

4. Lie, con, manipulate or take advantage of others

5. "Blow up" or get annoyed at other kids over little things

6. Act too young or immature around kids the same age, or prefer to play with younger kids

7. Have trouble getting along with other kids the same age, or find it hard to make or keep friends

8. Have trouble getting along with adults

9. Annoy others on purpose, or damage their belongs on purpose

10. Say mean or cruel things, or verbally abuse others

11. Act very cruel to animals

12. Do things impulsively (without thinking) that were dangerous and could injure others

13. Have temper tantrums or outbursts of anger

14. Destroy or damage property in the home when he or she was angry

\* Items from the Delinquency domain

15. Get very upset if he or she could not do or have something right away

16. Act inappropriately seductive, or do unusual or inappropriate things of a sexual nature in public

17. Act sexually promiscuous or loose, engage in high risk sexual behaviors, or have unprotected sex

18. Participate in gang activities that included harassing or bullying others

19. Bite or throw things at others

20. Physically attack or really try to hurt another child, a parent, or some other adult living in the child's/your home

21. Physically attack or really try to hurt some other child or adult not living in the child's/your home

22. Vandalize or deface property\*

23. Act so out of control that someone filed a complaint\*

24. Go joy riding in a car without permission\*

25. Play with fire so that damage to property or people was likely\*

26. Threaten someone with a weapon\*

go to church or some place of worship" (r). These items were measured on a four-point Likert scale (disagree a lot to agree a lot). The alpha coefficients at time 1 and time 2 were .61 and .59, respectively.

The four YOFS items comprising the <u>lack of parental supervision scale</u> measured the amount of adult supervision youth received during the work week and weekend, as well as parents' knowledge of the youths' whereabouts and activities. Items were measured on a 4-point scale, yielding alpha coefficients of .67 at time 1 and .77 at time 2. A single item from Social History Questionnaire completed by the parent informant provided information on <u>family income</u>. Income was measured on an eight-point scale, each point of the scale representing a successive category of income (from \$8,000 – 11,999 to over \$100,000).

#### Procedure

*Time 1.* After a determination was made by the Hearing Officer as to the dispensation of the case (i.e., warning and dismissal, consent probation, formal probation, or referral for a formal hearing), the Hearing Officer introduced the adolescent and his/her parent to an undergraduate research assistant involved with the study. The adolescent and parent were informed that their decision to participate in the study did not affect any outcomes involved with the court system. In addition, research assistants told potential participants that they would each be reimbursed \$20.00 for their initial participation, that their information would be kept confidential, and that they would be contacted later for additional testing sessions. If they agreed to participate, subjects were given the option to complete the measures immediately at the courthouse or to set up a testing appointment for a later date either at the research office located in the court or at

their home. If potential participants were unsure of their upcoming availability, they were asked to provide a phone number at which one of the research staff could reach them at a later time. All participants choosing to be tested at a later time were called and reminded the night before their appointment. At the time of testing, before measures were completed, research assistants obtained written consent from the parent and written assent from the adolescent. Completion of all measures required between an hour and an hour and a half for the majority of participants.

*Time 2.* Approximately one year after completing the Time 1 assessment, families were recontacted and asked to participate in the follow-up phase of the study by responding to the same measures completed at Time 1. Testing took place at the court offices, at the participants' home, or at another agreed upon location (e.g., local library, university office). At this time, second written consent and assent forms were obtained, and both the adolescents and parents were again each reimbursed \$20.00 for their follow-up participation.

#### Missing Data

All missing data were replaced in the data sets so that means and intercepts would not have to be estimated in confirmatory factor analysis and structural equation modeling procedures, allowing for the calculation of goodness of fit and other statistics. Only ten of the 149 youth at time 1 (6.7%) had missing data for one of the variables employed in the CFA analyses. Even fewer participants were missing data in each of the other data sets (i.e., parents at both time points and adolescents at time 2). The series mean procedure of SPSS was used to replace missing values.

#### **Research predictions**

Predictions are as follows:

1. Confirmatory factor analysis procedures will show that non-deviance models of psychopathy will provide a better fit to the observed data than models that includes criteria assessing social deviance.

Confirmatory factor analysis procedures will demonstrate that a three-factor model of psychopathy provides a better fit to the observed data than a two-factor model
The affective dimension of psychopathy will demonstrate greater structural and relative stability over time (i.e., the factor structures will replicate better and test-retest correlations will be higher) than either the narcissistic or behavioral dimensions.
Confirmatory factor analytic procedures will demonstrate that the affective and narcissistic dimensions of psychopathy will replicate across gender better than the behavioral dimension.

4b. Males will display higher mean levels of psychopathy than women for each of the psychopathy dimensions.

5. Structural equation modeling will show that individual differences in levels of adolescent psychopathy at time 1 can predict changes in adolescent aggression over a one year period after controlling for initial difference in adolescent aggression, family income, lack of parental supervision, association with delinquent peers, and lack of social ties.

# CHAPTER 6 RESULTS

#### Attrition

As noted previously, at time 1, 149 participants had data for the LSRP and 79 had information for the APSD. At time 1, the total sample of 149 participants (all of whom had LSRP data) was comparable in age, grade and ethnic distribution to the subsample of 79 participants who also had APSD data. However, the proportion of males in the APSD subgroup was somewhat smaller than in sample as a whole (46 of 79 or 58.2% versus 92 of 149 or 65.2%).

At time 2, 89 subjects had data for LSRP and only 32 had data for the APSD. Of the 89 with LSRP, 58 were male whereas 31 were female. Participants with LSRP data at time 2 did not differ greatly from the entire sample in percent of each gender (males = 64.4%), mean age (M = 14.8, SD = 1.2), grade (M = 9.0, SD = 1.3), or proportion of Caucasian versus non-Caucasian youth. The 32 youth with APSD data also were demographically comparable to the sample at time 1 (22 were male, M age = 14. 4, SD = 1.3, M grade = 8.7, SD = 1.2, percent Caucasian = 75%).

As noted earlier, fewer participants had APSD data because this measure was added to the larger study several months after it began. Because of the small sample size, several predictions are tested using only the adolescent report LSRP data.

#### Goodness of fit of the structural models

A major goal of this study was to compare the fit of several different models of psychopathy in adolescents. Several two and three factor models suggested in the adult and child literature were initially examined (see Table 2 and Appendices A-D). Alternative two-factor models included one with social deviance criteria and one without social deviance criteria; these models were tested using both the LSRP and the APSD. Comparisons of the two- and three-factor models were also tested using both the LSRP and APSD data sets.

Model comparisons were made within but not between data sets allowing the use of statistics for nested models. Models compared using these nested designs shared all the same free parameters except for certain parameters that were constrained to zero in one but not in the other model (Maruyama, 1998). In the present study, parameters were removed from the models instead of constrained; Fromm (2003) has postulated that removing variables is the same as constraining them to zero (R.P. Deshon, personal communication, July 2003). To compare the nested models, the chi-square difference test was utilized and other appropriate fit indices also were compared.

In regards to fit indices, the literature suggests that the comparative fit index (CFI) and root mean square residual (RMR) are more appropriate for this study than others made available by the AMOS statistical package. Maruyama (1998) does not recommend the normed fit index (NFI) in spite of its popularity as a relative fit index because it does not do well with small sample sizes and is affected by changes in sample size. Relative Type 2 indices, such as the Tucker-Lewis Index (TLI), are much more consistent across sample size than absolute or relative Type I indices. Hu and Bentler (1998) also recommend the use of the RMR in addition to other indices such as the TLI, the CFI, and/or the root mean square error of approximation (RMSEA) to evaluate model fit. However, because the TLI and RMSEA are more affected by small sample sizes than

the RMR or CFI (Hu and Bentler, 1998), the present study focused on the RMR and CFI. Hu and Bentler (1999) suggest that a cutoff value close to 0.08 for the RMR and a value close to 0.95 for the CFI are needed to conclude good model fit whereas Maruyama suggests values over 0.9 for the CFI are sufficient to indicate good fit. When the fit of these models to the data was examined, the following results were found:

Prediction 1 proposes that two-factor models of psychopathy that do not include social deviance criteria will demonstrate better fit to the data. These alternative two factor models were tested employing confirmatory factor analysis (CFA) procedures; all of the CFAs used data collected at Time 1, so that Time 2 data could later be utilized to test the stability of the best model over time (see Prediction 3). If any items loaded poorly (< .10), they were removed and the models rerun.

The first two-factor model tested was that derived from Hare using the youthreport LSRP. Although the LSRP is modeled after Hare's PCL, it does not include social deviance items. Therefore, social deviance items from the youth version of the FISCA that most mirrored those from the PCL: YV (i.e., juvenile delinquency, sexual promiscuity, criminal versatility) were included with the LSRP when assessing the deviance model. For both the deviance and non-deviance models employing the LSRP, item 20 – "before I do anything, I think about all the things that can go right or wrong" – was removed because the factor loadings were under .10 (deviance model – .08; nondeviance model – .07). When the models were rerun without item 20, goodness of fit statistics were essentially the same for the non-deviance and deviance models (see Table 7). Hence, Prediction 1 was not supported by the LSRP data.

In contrast, the second two-factor model tested was that outlined by Frick et al.

(1994) and based on findings using the parent-report APSD. CFA analysis provided some tentative support for the prediction that the non-deviance APSD model would demonstrate a better fit to the data than the model including the deviance item (i.e. engages in illegal activity). That is results of the  $\chi^2$  difference test indicated that the Table 7

Model	χ²	CFI	RMR	χ <sup>2</sup> diff
1. LSRP 2-factor with social deviance criteria (N = 149)	423.2	.763	.087	
2. LSRP 2-factor non-deviance $(N = 149)$	340.8	.778	.081	
Difference between Models 1 & 2				82.4
<ul><li>3. APSD 2-factor with social deviance criteria (N = 78)</li></ul>	179.0	.736	.041	
4. APSD 2-factor non-deviance $(N = 78)$	146.0	.776	.040	
Difference between Models 3 & 4				33.0 <sup>a</sup>
<sup>a</sup> p < .05				

Fit indices for the deviance and non-deviance models of the total sample.

models differed significantly (p = .003) even though the fit indices for the two models were comparable (see Table 7).

Prediction 2: The three-factor models will exhibit a somewhat better fit than the two-factor models. The three-factor model outlined by Cooke and Michie (2001) and that delineated by Frick et al. (2000) employing the APSD differed slightly in item loadings,

so in a preliminary analysis four items were allowed to cross-load (see Appendix D). This analysis demonstrated that loadings were more consistent with the Frick et al. model. The loadings of three of the items (1, 3r, and 5) supported Frick et al.'s model; only one reversed item – "Is good at keeping promises" – loaded according to the Cooke and Michie model. In subsequent analyses, these items were loaded onto the factors on which they loaded more strongly in this preliminary analysis. See Table 8 for factor loadings of cross-loaded items.

# Table 8

Item	Cooke and Michie factor loading	Frick et al. factor loading
1. Blames other for his/her mistakes	Affective (.133)	Behavioral (.539)
3. Is concerned about how well s/he does at school/work <sup>a</sup>	Behavioral (050)	Affective (.468)
5. His/her emotions seem shallow and not genuine	Affective (.031)	Narcissistic (.559)
7. Is good at keeping promises <sup>a</sup>	Behavioral (.503)	Affective (.230)
<sup>a</sup> reversed scored items		

Item loadings of cross-loaded items for the APSD three-factor model.

An initial test of the three-factor model employing the LSRP yielded modification indices suggesting that the reversed item 22 – "I say no when someone wants me to do things I know are wrong or dangerous" – would load better on the affective factor than the behavioral one. In addition, as in the comparison of the deviance and non-deviance two-factor models above, the LSRP item "before I do anything, I think about all the
things that can go right or wrong" was omitted because it failed to contribute substantially to any factor (factor loading of .07).

The final LSRP three-factor model without these two items was compared to the LSRP two-factor non-deviance model. The  $\chi^2$  difference test between these two models indicated that the goodness of fit of the two models differed significantly ( $\chi^2 = 38.4$ , df = 2, p = .00). Also, consistent with Prediction 2, the fit indices indicated that the 3-factor model evidenced a better fit to the data (see Table 9). Similarly, the 3-factor model using the APSD data was compared to the 2-factor non-deviance model using the APSD. In Table 9

Fit indices of the two- and three-factor models using both the LSRP and the APSD.

Model	N	$\chi^2$	CFI	RMR
1. 2-factor non-deviance using LSRP	149	340.8	.778	.081
2. 3-factor model using LSRP	149	302.4	.839	.074
Difference between models 1 and $2 = 38$	.4 <sup>a</sup>			
3. 2-factor non-deviance using APSD	78	146.0	.776	.040
4. 3-factor model using APSD	78	153.3	.875	.035
Difference between models 3 and $4 = 7.3$	3			
$^{a}p = .00$				

general, this analysis provided very weak support for Prediction 2, that is the  $\chi^2$  difference test indicated that the two models did not differ significantly and the RMR values were comparable. However, the CFI was higher for the 3-factor model.

Prediction 3 proposes that the affective dimension of psychopathy will demonstrate greater structural and relative stability over time than either the narcissistic *or behavioral dimensions.* Whereas scores on the factor assessing the affective features of psychopathy are expected to be relatively stable over a one-year period, scores on factors describing narcissistic and the behavioral aspects of psychopathy are expected to show greater fluctuation. Determining temporal stability is a complex task and, ideally, data should be examined at four time points to accurately separate error from stability in scores. Yet, certain procedures are available to estimate stability using two time points. First, using only the LSRP three-factor model, structural stability was evaluated by assessing model fit across the one year period between the first and second assessments.

#### Structural stability

It was not expected that the total three factor model would demonstrate structural stability because it is hypothesized that not all the factors of psychopathy are equally stable over time in adolescents. In addition, the limited sample size at time 2 made an adequate test of the stability of the total model unfeasible. Instead, the structural stability of each of the three dimensions was assessed separately over both time points using CFA procedures, with the expectation that the affective factor would show greater structural consistency across time points than either the narcissistic or behavioral factor.

This prediction was supported by the CFA procedures. As predicted, results showed that the LSRP affective factor structure was stable across the two time points. The  $\chi^2$  was insignificant (p = .4), indicating that the data from both time points run simultaneously did not differ significantly from the model; the CFI fell above the gold standard value of 0.95, the RMR fell below 0.08, and the RMSEA fell below 0.06. As expected, the fit indices for the LSRP behavioral factor did not evidence as adequate stability across the two time points. The  $\chi^2$  was significant (p = .044) and CFI fell below

0.9 (0.897). Likewise, consistent with expectations, the narcissistic factor showed a similar poor fit across the two time points with the CFA yielding a significant  $\chi^2 (p = .00)$  and a CFI values below 0.9 (see Table 10).

Another method used to demonstrate structural stability in the factors over time was to show that the amount of error in measurement was consistent across each time point. Alpha coefficients for each dimension were calculated and compared at time 1 and time 2. Contrary to what was predicted, coefficients for the LSRP scales were more similar for the behavioral and narcissistic factors than for the affective factor (see Table Table 10

Fit indices for the LSRP factors assessed simultaneously at Time 1 and Time 2.

Model	χ <sup>2</sup>	CFI	RMR	GFI	RMSEA
LSRP Affective factor	18.83	.991	.061	.965	.016
LSRP Behavioral factor	29.41 <sup>ª</sup>	.897	.074	.943	.061
LSRP Narcissistic factor	123.9 <sup>a</sup>	.866	.077	.873	.067
<sup>a</sup> p < .05					

## Table 11

Alpha coefficients for the LSRP three psychopathy factors at T1 and T2.

Model	Time 1	Time 2
Affective factor	.58	.69
Behavioral factor	.65	.64
Narcissistic factor	.81	.81

11). Yet, the higher alpha coefficients simply mean that the items measure a more unitary construct, not necessarily the same construct over time.

#### Absolute stability

Mean differences between time 1 and time 2 for all three factors were also calculated. Much like the results of the alpha coefficients, the affective factor demonstrated the largest mean difference between the two time points (see Table 12). The narcissistic factor also evidenced a significant mean difference across the two time points. The affective factor mean level increased from time 1 to time 2 whereas means for each of the other factors decreased over time.

#### Relative stability

Test-retest correlations between time 1 and time 2 were calculated for each factor to examine whether individual adolescents maintained their relative positions (high or low) in level of psychopathy on each of the three psychopathy dimensions. More specifically, it was predicted that the correlation for the affective dimension would be higher than for either the narcissistic or behavioral factors. However, as can be seen in Table 13, the data did not support this prediction.

In sum, support for the prediction that the affective factor would show greater structural, absolute and relative stability was mixed. CFA procedures showed greater structural stability over time for the affective as compared to the narcissistic or behavioral factor, but the alpha coefficients for the affective factor proved to be more inconsistent across time points than those for the other two factors. In addition, the affective factor had the lowest test-retest correlation of the three psychopathy factors.

#### Table 12

Mean differences between T1 and T2 for the LSRP three psychopathy factors (n=87).

Model	T1	T2	M difference	р
Affective factor	2.11	2.28	170	.035
Behavioral factor	2.45	2.37	.085	.180
Narcissistic factor	2.09	1.96	.125	.043

#### Table 13

Test-retest correlations between times 1 and 2 for LSRP total scores and factors (n = 87).

	Model	Correlation
	LSRP Total	.622ª
	LSRP Affective	.251 <sup>b</sup>
	LSRP Behavioral	.565ª
	LSRP Narcissistic	.596ª
<sup>a</sup> p < .001 <sup>b</sup> p < .05		

Prediction 4a proposes that the structure of the affective and narcissistic psychopathy factors will replicate better across gender than the behavioral factor. Only the LSRP three-factor model was used to test this prediction due to the small sample size for the APSD. LSRP data were available for 92 males and 57 females. The CFA did not completely support the prediction. Both the behavioral and affective factors demonstrated good fit, though the fit of the narcissistic factor was only moderate (see Table 14). The statistics for the affective factor were generally good with only a lower CFI value than the behavioral factor. The narcissistic factor displayed a significant  $\chi^2$ , but lower CFI and GFI values, and a higher RMSEA value than those for the other factors.

Table 14

Fit indices for the LSRP factors assessed simultaneously across gender.

Factor	χ <sup>2</sup>	CFI	RMR	GFI	RMSEA
LSRP Affective factor	24.3	.883	.074	.952	.049
LSRP Narcissistic factor	120.8 <sup>a</sup>	.847	.078	.874	.070
LSRP Behavioral factor	20.8	.971	.073	.956	.033
$^{a}p = .00$	.,	<u> </u>			

Prediction 4b: Males will display higher mean levels of psychopathy than females for each of the psychopathy dimensions. Mean levels of the three psychopathy factors were calculated for each gender using both the youth-report LSRP and the parent report APSD at time 1. For the LSRP, the prediction was only partially supported. On the LSRP, males demonstrated higher mean levels for the affective and narcissistic factors, but were lower than the females on the behavioral dimension. Only the narcissistic dimension demonstrated a significant difference (see Table 15). For the APSD, support for the prediction was in the expected direction. Boys displayed higher mean levels than girls on all factors, yet none of the differences were significant (see Table 16). *Predicting changes in aggression from psychopathy* 

Prediction 5 proposes that adolescents' psychopathy scores at time 1 will predict aggressive behavior one year later even after controlling for other variables associated

#### Table 15

Mean levels of psychopathy for both gender measured by the LSRP.

	<u>Male</u> ( <i>n</i> = 92)	<u>Female</u> $(n = 57)$			
Affective factor	2.14 (.57)	2.03 (.60)			
Narcissistic factor <sup>a</sup>	2.16 (.60)	1.91 (.55)			
Behavioral factor	2.35 (.66)	2.54 (.62)			
<sup>a</sup> mean difference significant at $p = .013$					

## Table 16

Mean levels of psychopathy for both gender measured by the APSD.

	<u>Male</u> $(n = 46)$	<u>Female</u> $(n = 33)$
Affective factor	0.83 (.37)	0.71 (.41)
Narcissistic factor	0.75 (.45)	0.64 (.39)
Behavioral factor	1.12 (.40)	1.01 (.46)

with violence, namely, household income, lack of social ties, association with delinquent peers, poor and parental supervision. Structural equation modeling provided a test of this hypothesis using youth self-report of psychopathy on the LSRP. Measures of social ties, involvement with delinquent peers, and parental supervision used items from the YOFS and hence, also depended on youth report. In the initial SEM analysis, aggressive behavior at time 1 and time 2 were measured using the Aggressive Behavior scale from the self-report FISCA. In addition, the total psychopathy score was used. To assess the predictive power of psychopathy over and above these other violence-related variables, structural equation modeling procedures were used and a predictive model was tested. In the model, psychopathy, lack of social ties, association with delinquent peers, and income were measured at time 1. Aggressive Behavior at Time 1 was also controlled for. Aggressive Behavior measured at Time 2 served as the outcome variable. Correlations for all variables are shown in Table 17.

Table 17

Subscale	1	2	3	4	5	6	7
		( <i>n</i> = 89)					
1. T1 LSRP psychopathy		.509 <sup>a</sup>	.459 <sup>a</sup>	.166	.482 <sup>a</sup>	.436ª	.207
2. T1 youth-report aggression			.526 <sup>a</sup>	.341ª	.347ª	.487 <sup>a</sup>	.139
3. T2 youth-report aggression				.132	.290 <sup>a</sup>	.379 <sup>a</sup>	.246 <sup>b</sup>
4. Income					.158	.238 <sup>b</sup>	.021
5. Social anomie						.373 <sup>a</sup>	.253 <sup>b</sup>
6. Assn. with delinquent peers							.028
7. Lack of supervision							
$p^{a} p \le .01$ $p^{b} p \le .05$							

Intercorrelations among the variables in the SEM procedure.

Notably, all of the time 1 variables except for income (i.e., social anomie, association with delinquent peers, lack of supervision, in addition to psychopathy) were significantly related to aggression at time 2. Additionally, psychopathy was significantly

associated to lack of social ties, association with delinquent peers, and lack of supervision.

When the predictive structural equation model was run (see Table 18 and Figure 1), the fit indices indicated a good fit to the data (see Table 19). The  $\chi^2$  was not significant ( $\chi^2 = 10.2$ , p = .071), indicating that the data did not differ significantly from the model. According to the standardized estimates, psychopathy was still significantly associated to both lack of social ties (b = .47, p = .01) and association with delinquent peers (b = .41, p = .01), and aggression at time 1 (b = .33, p = .01). Psychopathy's association to lack of supervision bordered on significance (b = .21, p = .07). In line with Moffitt's theory, psychopathy significantly predicted aggression indirectly through these other variables (p = .01). Psychopathy's direct relationship to aggressive behavior at time 2 bordered on significance (b = .20, p = .07). None of the other variables in the model except for aggression at time 1 (p = .01) were significantly associated with aggression at time 2 (lack of supervision; lack of social ties; association with delinquent peers). All of the significant associations between these other variables and aggression dropped out when psychopathy was included in the model. Association with delinquent peers lost its significant relation to aggressive behavior (b = .12), as did lack of social ties (b = .01) and lack of parental supervision (b = .16).

Because the relationship of many of the variables to time 2 aggression was far from significant, a trimmed model was run. In this trimmed model, only those variables with pathways to time 2 aggression significant at the .10 level or better were allowed to predict time 2 aggression, that is only psychopathy and aggression at time 1 served as predictors for time 2 aggression in the trimmed model. Because the original model

# Table 18

Predictor	social ties	lack of sup.	delinq. peers	T1 agg.	T2 agg.
			( <i>n</i> = 89)		
T1 LSRP psychopathy	.47 <sup>a</sup>	.21 <sup>b</sup>	.41ª	.33 <sup>a</sup>	.20 <sup>b</sup>
Income	.08	.01	.17	.22	
T1 lack of social ties				.04	01
T1 lack of supervision				.05	.16
T1 assn. w/ delinq. peo	ers			.28ª	.12
T1 youth-report agg					.34ª
$p^{a} p \le .01$ $p^{b} p = .07$					

# Standardized estimates for the prediction model of aggression with youth report of psychopathy.

#### Table 19

Fit indices for the predictive model of aggression.

Model	n	$\chi^2$	CFI	RMR
Youth- report predictive model	89	10.2 <sup>a</sup>	.958	.044
Trimmed model	89	14.2 <sup>b</sup>	.949	.044
$p^{a}p = .071$ $p^{b}p = .077$				

proved to be a good fit to the data, all other paths – significant or not – were allowed to remain in the model (see Table 20 and Figure 2). Fit indices for the trimmed model were similar to those found for the original model (see Table 19). In the trimmed model,

psychopathy at time 1 significantly and directly predicted aggression at time 2 (b = .26, p = .021). The significance value for all other remaining relationships in the model went unchanged. Findings supported the prediction that psychopathy significantly predicted aggression over time both directly and indirectly through other variables previously found to be associated to aggression and violence.

Table 20

Predictor	social ties	lack of sup.	delinq. peers	T1 agg.	T2 agg.
			( <i>n</i> = 89)		
T1 LSRP psychopathy	.47 <sup>a</sup>	.21 <sup>b</sup>	.41 <sup>a</sup>	.33ª	.26 <sup>c</sup>
Income	.08	01	.17	.22	
T1 lack of social ties				.04	
T1 lack of supervision				.05	
T1 assn. w/ delinq. pee	ers			.28ª	
T1 youth-report agg.					.39ª
$p^{a} p \le .01$ $p^{b} p = .07$ $p^{c} p \le .05$					

Standardized estimates for the trimmed prediction model of aggression.

As a follow-up analysis, each psychopathy factor replaced total psychopathy in the original model to examine each dimension's ability to predict time 2 aggression. All three models demonstrated fit indices indicating that they were good fits to the data (see Table 21). Like the model with the total psychopathy scale, all three factors demonstrated a significant indirect relationship to time 2 aggression. Also, the significant associations between the other violence-related variables and time 2 aggression became non-significant when the factors were included in the models; the only exception to this was supervision, which still evidenced a significant (p = .05) relationship to time 2 aggression in the affective factor model. Yet, the models differed in some ways in terms of the standardized estimates. Only the narcissistic factor demonstrated a significant direct relationship to time 2 aggression. Additionally, neither narcissism nor the affective characteristics were significantly associated to time 1 aggression, though the path from Table 21

Model	N	χ²	CFI	RMR	
Narcissistic	89	12.9 <sup>a</sup>	.926	.041	
Behavioral	89	15.7 <sup>b</sup>	.909	.055	
Affective	89	12.6 <sup>c</sup>	.922	.042	
$p^{a}p = .024$ $p^{b}p = .008$ $p^{c}p = .028$					

Fit indices for each psychopathy factor in the predictive model of aggression.

narcissism to time 1 aggression showed a statistical trend (p = .06). See Figures 3 through 5 for the SEM models for the three factors.

The relationship between total psychopathy and time 2 aggression was also tested using parent-reported psychopathy (APSD). Because of the smaller number of participants with APSD data, hierarchical regression was used and the only variable controlled for was aggression at time 1. The results indicated that time 1 and time 2 aggression were significantly related (b = .60, p = .001), but, in contrast to the youth model, psychopathy did not explain significant additional variance in aggression at time 2 after controlling for time 1 aggression ( $\Delta R^2 = .867, p = .359$ ).

#### CHAPTER 7

#### DISCUSSION

The first goal of the present study was to examine the structure of psychopathy in adolescence. The results indicated that the best fitting structural model for the adolescent data was a three-factor model when psychopathy was defined by youth report. This finding corresponds to previous results in both the child (Frick et al., 2000) and adult (Cooke & Michie, 2001) literature. In the previous work with children and adults, the measures used were either Hare's PCL-R (adults) or a measure based on the PCL-R, revised to be appropriate for use with children. The youth measure employed in the present investigation was also based upon Hare's PCL-R, but was modified for use with noncriminal populations. The PCL-R and its derivative measures originally had twofactor solutions (see Frick et al., 1994; Hare et al., 1990; Lynam et al., 1999), but subsequently demonstrated an equal or better fit to a three-factor model solution when compared to a two-factor one. The fact that a three-factor solution has been found to be present in samples of children (age 6-13), adults, and now adolescents suggests that this conceptualization of psychopathy might be one that starts early and persists through development, possibly only manifesting in different ways. Of course, the only methodology that can truly answer that question is a longitudinal design that follows the same group of individuals from childhood into adulthood.

The second goal of the current study was to demonstrate the superior stability of the affective dimension of psychopathy compared to the behavioral and narcissistic dimensions. When using the youth-report of psychopathy, evidence of greater stability of

the affective factor was mixed. When examining structural stability, referred to as statistical factorial invariance over time, the affective factor showed greatest stability over a one-year period. Yet, when alpha coefficients provided the definition of stability, stability was found for the narcissistic and behavioral factors, but not for the affective factor. An examination of the alpha coefficients indicated that there was more error in measurement at time 1 than at time 2 for the affective factor. An examination of the mean levels of each factor at both time points revealed that the affective factor varied most whereas the behavioral dimension was the only one without a significant mean difference between times 1 and 2. The reason that these indicators of structural stability did not mesh is unclear. Relative stability, as measured by test-rest correlations for all three factors, was similar to the alpha coefficients. Test-retest correlation coefficients for the narcissistic and behavioral factors each exceeded r = .5 (p < .001) whereas the stability coefficient for the affective factor, though statistically significant (p < .05), was relatively low (r = .251).

For the affective factor, the thinking behind the original stability hypothesis was that the narcissistic and behavioral aspects of psychopathy are confounded by processes generally associated with normal adolescent development. As adolescents develop, these types of characteristics should fluctuate in quality and quantity and then dissipate as youths get older. Conversely, affective characteristics such as lack of empathy and remorse that are not as commonly associated to adolescence, and found to be present in children (see Frick et al., 1994 and 2000), would remain more stable.

One implication of the finding that the narcissistic and behavioral traits might remain stable over time is that the narcissistic and behavioral traits of psychopathy differ

from adolescent-limited characteristics. For example, the egocentricity generally associated with adolescence, which is thought to vary and diminish as youth age, might diverge from the narcissism that remains stable in psychopaths. Egocentricity consists of a self-focus and difficulty separating me from not-me (Elkind, 1967), but might not also entail the more pathological facets, such as incapacity for love of other or guilt, that is included in the narcissism of psychopathy.

As mentioned earlier, determining the stability of characteristics across only two time points is not the ideal and is a limitation of the present investigation; preferably, four time points should be utilized. One difficulty in using only two time points is that levels of the target variable might fluctuate between the two end-point measurements. Therefore, a characteristic will appear stable through the measurement of the two time points when it is in fact instable. Without the additional measurements, potential fluctuations are missed. These potential fluctuations might have been present in the narcissistic and behavioral psychopathy factors, but went undetected in the relative stability measurements due to the lack of measurements.

In addition, it is possible that the one-year gap between the measured time points of the present study is an insufficient amount of time to pick up on major developmental changes that would result in the recession of adolescent-limited narcissistic and actingout behavior. The mean age of the youth at time 1 was approximately 15 years and, therefore, 16 years at time 2. At these ages, youth are generally in high school, moving from ninth to tenth grade. Therefore, this time period misses a critical move from junior high to high school, as well as a move into later high school years when the next developmental stage for the youth (i.e., college, full-time employment) is on the horizon,

possibly spurring developmental growth.

But what about the absolute and relative stability of the affective dimension? Although it was hypothesized that the affective deficits of psychopathy are not as confounded by 'normal' adolescent development as those that are part of the narcissistic and behavioral dimensions, this might not be the case. In retrospect, adolescents have been characterized as callous and unempathic, with these traits theorized as necessary for normal adolescent development to take place. For example, in Blos' theory of adolescent development, he contends that adolescents must undergo a second individuation process during which there is a major restructuring of ego functions and drive organizations (Muuss, 1988). During adolescence, there is a weakening of the self in comparison to more primitive drives as parents are rejected as extensions to the youths' ego, leading to emotional turnoil and rage. Additionally, this process leads to increases in anxiety. Defenses against such anxiety might involve regression to more primitive responses such as sadism, leading to callousness. Blos described such regressions as usual and necessary for an adolescent to establish autonomy and organize his/her own psychic structure.

This study also began with the hypothesis that males and females would demonstrate similar model fit for the affective and narcissistic dimensions of psychopathy, but not for the behavioral factor. In the few studies that have examined gender differences in psychopathy, the differences have generally stemmed from the behavioral and/or social deviance characteristics of psychopathy, whereas the affective and interpersonal traits have been found to be similar for males and females (Salekin et al., 1997, Salekin et al., 2000). In the present investigation, this prediction was not supported. Contrary to past findings, males and females demonstrated the most similarity

on the behavioral factor, indicating that the genders did not differ on the characterological behavior patterns of psychopathy.

If males and females do not necessarily differ on the behavioral personality characteristics of psychopathy, it is possible that the behavioral expression, or characteristic adaptation (Cooke & Michie, 2001), of psychopathy differs across gender. This difference would occur because males high in psychopathy might tend toward more overt aggressive and violent behavior than psychopathic females. For example, Hamburger, Lilienfeld, and Hogben (1996) found that the relationship between psychopathy and Antisocial Personality Disorder (ASPD) and Histrionic Personality Disorder (HPD) was moderated by biological gender. Males high in psychopathy were more likely to express behaviors consistent with ASPD (e.g., history of antisocial, criminal behaviors) whereas females high in psychopathy were more likely to express histrionic behaviors (i.e., self-dramatization, attention seeking, dishonesty, sexual provocation).

The possibility that there might be a gender difference in the behavioral expression of psychopathy was examined post hoc in a number of ways. First, to test the follow-up prediction that males and females might not differ on the characterological behavior patterns associated with psychopathy, but more so on the behavioral manifestations of the disorder, males and females were compared again on the behavioral factor, but with social deviance items (i.e., criminal versatility, juvenile delinquency, and sexual promiscuity) included. When this model was run, the behavioral factor plus social deviance did not evidence as good a fit across gender as it had without the social deviance items. As compared to the behavioral factor without the social deviance items,

the  $\chi^2$  increased from 20.8 to 76.6 and became significant (p = .023). The CFI and GFI values dropped to 0.822 and 0.898, respectively (from 0.971 and 0.956). The RMR and RMSEA values increased to 0.122 and 0.053 (from 0.073 and 0.033).

Second, to examine specifically whether psychopathic males would present with more aggressive behavior than psychopathic females, correlations between psychopathy and both time 1 and time 2 aggression for each gender was tested post hoc. Additionally, both youth and parent report of aggression was examined. Overall, the relationship between psychopathy and aggression was greater for males. Specifically, in terms of youth report, males and females demonstrated comparable significant relationships between psychopathy and time 1 aggression. However, males displayed a significant association between psychopathy and time 2 aggression whereas females did not. Additionally, when a gender interaction variable was added to the SEM trimmed model and used to predict time 2 youth-reported aggression, the estimate bordered on significant (b = -.188, p = .068). The negative sign of the estimate indicates that males had a stronger relationship between psychopathy and time 2 aggression than females. In terms of parent report of psychopathy, males evidenced a significant relationship between psychopathy and both time 1 and time 2 aggression. Yet, for females, there was virtually no association between psychopathy and aggression at either time point (time 1: r = .098and time 2: r = -.006).

In sum, although males do not appear to differ from females in the model fit of the behavioral factor as hypothesized, they do appear to differ on this dimension when social deviance criteria are added; perhaps it is not in the characterological behavior patterns in which they differ, but in the behavioral manifestations (i.e., juvenile

delinquency, sexual promiscuity, criminal versatility) of psychopathy. Additionally, males showed a stronger overall relationship between psychopathy and aggression than did females.

The final objective of the present investigation was to examine the ability of psychopathy to predict aggressive behavior after a year's time, and over and above other variables previously found to be related to aggression and violence. The total youth sample was examined using structural equation modeling procedures to investigate the model for the development of stable aggressive/violent behavior (Moffitt, 1994). In this model, a temperamental/personality predisposition (e.g., psychopathy) lays the groundwork for violence, but that predisposition more likely results in violent or aggressive behavior when other variables, such as a lack of interaction with prosocial peers (e.g., association with delinquent peers, lack of social ties) and lack of parental involvement (e.g., lack of supervision), are present. Moffitt also posited that low income plays a role in the development of aggression, mostly because it allows children and adolescents fewer opportunities and, again, hinders prosocial development.

The SEM analyses provided support for Moffitt's (1994) theory. Moffitt argues for the strong impact of personality or temperament characteristics on the development of violence/aggression and the current study demonstrated that psychopathy significantly predicted later aggression both directly and indirectly. The indirect prediction occurred via other variables (i.e., social anomie, lack of parental supervision, and association with delinquent peers) that have previously been found to be highly associated with violence and aggression (e.g., Hawkins et al., 2000; Lipsey & Derzon, 1998; Moffitt). These variables lost their significant association to later aggression when psychopathy was

included in the model. This finding indicates that psychopathy is accounting for aggression's relationship to these variables and that previous studies finding strong associations between such variables and aggression/violence might have missed examining the personality characteristics driving the associations.

In addition to the indirect association to later violence, psychopathy also directly accounted for variance in aggression over and above these other variables. Interestingly, the follow-up analyses separately examining each of the psychopathy factors in the predictive model found that this direct relationship between psychopathy and later aggression was driven largely by the narcissistic characteristics. The narcissistic factor contains items that relate to a disregard of others stemming from a focus on being better than others and the importance of self-preservation. For example, items like "success depends on winning and how strong a person is. I don't worry about the losers" and "people who are stupid enough to get ripped off usually deserve it" suggest that when a person thinks they are stronger and smarter, the weaker and dumber are losers who deserve whatever they get. Items like "making sure I look out for myself is the most important thing to me" and "in today's world, I feel okay about doing anything I can get away with to succeed" point to the importance of self-preservation in the narcissistic dimension and the lengths taken to maintain it. Lack of empathy and remorse that are the keys to the affective factor might create a lack of concern in psychopathic youth about what happens to others, but it might not be the driving force leading them to aggress against others. The affective deficits cause psychopathic youth not to care when others are hurt, but isn't necessarily behind them causing the actual hurt. Instead, aggression seems to stem from the superior and "taking care of number one" attitudes of the

narcissistic dimension.

An important finding in this study is that data from both the youth and parent measure supported the three-factor model. However, an equally important caveat is the presence of multiple potential confounds, namely in the areas of measurement, reporter and sample size. Two different measures of psychopathy were used for youth and parents. The parent report, the APSD, is a validated measure for use with parents of youth; on the other hand, the youth measure was a revision of an adult measure for use with adolescents and one that had not been used with this population before. Ideally, the same measure would have been used for both reporters so it could have been compared directly. There currently is an adolescent self-report version of the APSD, but this version was not available at the time of data collection for the present study. Because the measures of psychopathy cannot be compared directly, we do not know whether differences in model fit occurred because of measurement differences, reporter differences, or actual differences between the proposed models.

A related caution is that the youth measure of psychopathy is a measure that has been validated for use with adults, but not for use with adolescents; items were revised for use with youth in the current study. Youth- and parent-measured psychopathy differed in their relation to aggression, suggesting that they might not be measuring the same construct of psychopathy. Because the LSRP is not a validated measure of psychopathy in this age group, it becomes suspect on these grounds. Yet, parent report is also suspect due to the fact that parents are more than likely less aware of their children's internal thoughts and feelings. This lack of awareness is especially true during the adolescent years as youth gain more autonomy and begin to break away from parents' ideas. This growing autonomy might also make parents less aware of their children's behavior, leading to less knowledge of their level of aggressiveness. Again, it is difficult to know whether differences are driven by problems with measures, reporter problems, or actual differences.

Sample size is another limitation. Because for each reporter the sample size was different, differences in results between the two measures/reporters could have stemmed from differences in sample size. When determining model fit, it is best to have large samples. As sample size decreases, the amount of confidence one may have in the model fit statistics diminishes as well. The decay in participants between time 1 and time 2 led to a decrease in sample size from the original N of 149. The most affected were the analyses involving the parent report because the parent measure was added to the study after the youth-report measure, leading to a lower initial sample size for analyses involving parent report. Therefore, fit indices for models using parent-reported psychopathy were potentially affected by the smaller sample size. The differences in results between analyses involving youth and parent report might have stemmed from these sample size issues.

Although there was a decrease in sample size from time 1 to time 2, there was no revealing information available regarding the subjects who dropped out of the study between time points, though an examination of demographic variables exhibited very little change in mean age or grade, or frequencies of ethnicities. As noted earlier, the attrition resulted because several participants moved without notice and it was impossible to locate them. It can be speculated that these families are more disorganized or more impoverished than those who remained in the study, forced to move frequently and

without friends or family who know of their new whereabouts (families were asked to give a name of such a person when they sign up). It can only be postulated what difference the presence of these more disorganized youth might have had on results. Most likely, the presence of these youth would add to the numbers of youth lacking social ties. It is also likely that these youth were lower income than those that remained in the study, which might have influenced the effect of income in the predictive modeling.

In addition, there was no information collected at time 2 regarding any intervention or treatment that youth might have received in the year between time 1 and 2. There was generally no formal treatment required by the juvenile court because most youths' cases were dispensed with only a fine. Still, it is reasonable to assume that some parents might have pursued treatment for their children after involvement with the court system. Yet, it was not possible to make any comparison between those who potentially received treatment and the rest of the subjects.

Another issue to consider is that the present study utilized a court-referred sample. Because this was not a community sample, it is difficult to generalize the present results to the population as a whole. Additionally, the lack of gender differences in levels of psychopathy found in the present study might result from the use of an offender sample. Females in this type of sample might possess higher levels of psychopathic characteristics than found in a community population. In past studies, the variability in gender differences on mean levels of psychopathy related to whether the sample was drawn from a clinical, community or offender population (e.g., Myers et al., 1995; Loper et al., 2001). Clinical and community samples tended to demonstrated significant mean gender differences whereas offender samples did not. Females in the current investigation might

also be more aggressive than their community counterparts. Whereas males generally demonstrate higher levels of overt aggression than females, there was no significant gender difference for either youth- or parent-reported aggression found in the present study. In fact, although the difference was not significant, the mean level of youthreported aggression was higher for females than for males.

Another issue is the possible effect of self-report. A problem related to the use of self-report measures for the assessment of psychopathy is the issue that lying and dishonesty can be features of the disorder; leading to questions about the accuracy of the self-report data. Additionally, psychopaths' self-reports might be questioned on different grounds. Psychopaths might be limited in their ability to introspect and understand their own experience, leading to false reports (Lilienfeld, 1994). Alternatively, in some investigations, psychopathy scores on self-report measures have been shown to be somewhat negatively correlated with self-report measures of lying (Lilienfeld, 1994), indicating that psychopaths might be willing to reveal negative traits. Levenson et al. (1995) posited that self-report instruments might be feasible for use with psychopaths, especially in noninstitutionalized samples, because of psychopaths "meta attitude" that it is acceptable and possibly favorable to possess psychopathic characteristics. Other studies have shown that the relationship to lying may be variably related to the different dimensions associated with psychopathy. Zagon and Jackson (1994) found that a measure of the core personality traits of psychopathy correlated positively and significantly with the MMPI Lie Scale and the Crowne-Marlowe Social Desirability Scale. Conversely, a measure of behavioral traits related to psychopathy was significantly negatively associated to scores on the Lie Scale.

Future research should attempt to address some of the limitations of the current investigation. In terms of model fit, the present finding of the superior fit of a threefactor solution for adolescents needs to be replicated. The mixed picture regarding the stability of psychopathy indicates this is an area to be explored further; data collection at a greater number of time points and a larger sample size would aid and improve such exploration. In terms of the predictive power of psychopathy of important outcomes like future aggression, future investigations should again attempt to follow the youth for a longer time period. During adolescence, there is a peak of antisocial behavior. Youth get into more behavioral trouble and flirt with illegal activities. Yet, most youth do not remain on this path; they are what Moffitt (1994) termed adolescent-limited offenders. According to Moffitt, adolescent-limited offenders are more likely to be involved in behavior that attempts to display autonomy, adult privilege, or "status" (e.g., running away, substance abuse, vandalism, public order offenses). Those on the life-persistent course are more likely to participate in a variety of offenses, those outlined for the adolescent-limited, as well as more victim-oriented offenses (e.g., violence, aggression, fraud) and the types of crimes committed by lone offenders. As outlined earlier, psychopathic characteristics are more likely related to life-course persistent behavior.

Moffitt pointed out that during the height of participation in delinquency of these adolescent-limited youth, they will disguise the more persistent adolescents and create 'noise' in investigations of the more persistent group. Through the use of the Aggressive Behavior scale as the outcome measure in the present study, an attempt was made to 'weed out' the effect of the adolescent-limited offender because of the inclusion of more violent behavior. Yet, the best way to limit the 'noise' produced by the adolescent-limited

offender is to follow the youth for a longer time period.

In addition to delinquent behavior, there can also be an increase in psychopathiclike characteristics during adolescence. Adolescents can be mean and spiteful, appearing uncaring and unempathic. The present study hypothesized that the affective traits of psychopathy would present differently in adolescence than the narcissistic or behavioral ones, but it is possible that characteristics such as lack of empathy and remorse also increase during adolescence as part of this adolescent-limited trend. Again, following adolescents over a longer period of time would allow for a reduction in this 'noise' caused by these adolescent-limited youth.

Hare (1993) posits that investigations of psychopathy across the life course are needed to determine what factors are involved when psychopaths become violent offenders rather than con artists or even productive members of society. A greater understanding of psychopathic traits in youth can lead to a measurement technology for identifying a developmental subgroup of antisocial individuals typically marked by patterns of severe aggression and violence (Frick, 2000). This technology would then allow for intervention at an earlier stage of development when the traits or their behavioral consequences may be more responsive to treatment.

APPENDICES

## APPENDIX A

Two-factor model of Hare's Psychopathy Checklist-Revised (PCL-R, Hare et al., 1990)

#### Factor 1 - personality items.

- 1. Glibness/Superficial Charm
- 2. Grandiose Sense of Self
- 3. Pathological Lying
- 4. Conning-Manipulative
- 5. Lacks Remorse or Guilt
- 6. Shallow Affect
- 7. Callousness/Lack of Empathy
- 8. Failure to Accept Responsibility

## Factor 2 - behavioral/social deviance items.

- 9. Need for Stimulation/ Proneness to Boredom
- 10. Parasitic Lifestyle (not included on youth version)
- 11. Poor Behavioral Controls
- 12. Early Behavioral Problems
- 13. Lacks Realistic Goals
- 14. Impulsivity
- 15. Irresponsibility
- \*16. Juvenile Delinquency (scored differently on youth version)
- \*17. Revocation of Conditional Release

# Items that do not load on either factor, but add to the total score

- \*18. Promiscuous Sexual Behavior
- 19. Many Short-term Marital Relationships (not included on youth version)
- \*20. Criminal Versatility (scored differently on youth version)
- \* indicates social deviance items

# APPENDIX B

Two-factor model of APSD based on Frick et al. (1994)

Factor 1 - impulsivity/conduct problems.

- 1. Blames other for his/her mistakes
- 2. Engages in illegal activities<sup>\*</sup>
- 3. Acts without thinking of the consequences
- 4. Becomes angry when corrected or punished
- 5. Brags excessively about his/her abilities, accomplishments, or possessions
- 6. Seems to think that he or she is better or more important than other people
- 7. Teases or makes fun of other people
- 8. Engages in risky or dangerous activities
- 9. Keeps the same friends (r)
- 10. Gets bored easily

#### Factor 2 - callous-unemotional traits.

- 11. Feels bad or guilty when he/she does something wrong (r)
- 12. Is concerned about how well he/she does at school/work (r)
- 13. Does not show feelings or emotions
- 14. His/her emotions seem shallow and not genuine
- 15. Can be charming at times, but in ways that seem insincere or superficial
- 16. Is concerned about the feelings of others (r)

# Items from the APSD not included in the model due to multiple loadings (a) or theoretical reasons (b).

- 17. Lies easily and skillfully<sup>a</sup>
- 18. Is good at keeping promises (r)<sup>a</sup>
- 19. Uses or "cons" other people to get what he/she wants<sup>a</sup>
- 20. Does not plan ahead, or leaves things to the "last minute"<sup>b</sup>

<sup>\*</sup>indicates social deviance item

# APPENDIX C

Two-factor model of LSRP based on Lynam et al. (1999)

Factor 1 - personality traits.

- 1. I feel bad if my words or actions make someone else feel bad (r)
- Success depends on winning and how strong a person is. I don't worry about the losers.
- 3. People who are stupid enough to get ripped off usually deserve it.
- 4. I tell other people what they want to hear so that they will do what I want them to do (I butter them up).
- 5. For me, what's right is whatever I can get away with.
- 6. I like playing with other people's feelings.
- 7. I try not to hurt other people when I go after what I want. (r)
- 8. Making sure I look out for myself is the most important thing to me.
- 9. I often look up to people who can rip people off (cheat others) and get away with it.
- 10. Even if I were trying to sell something, I wouldn't lie about it. (r)
- 11. In today's world, I feel okay about doing anything I can get away with to succeed.
- 12. I would be upset if I succeeded because of someone else's loss. (r)
- 13. Cheating is not fair because it is unfair to others. (r)
- 14. Making a lot of money is my most important goal.
- 15. My main purpose in life is getting as many goodies as I can.

Factor 2 - behavioral traits.

- 16. I am often bored.
- 17. I'm able to go after one goal for a long time. (r)
- 18. I have been in a lot of shouting matches with other people.
- 19. I quickly lose interest in the tasks I start.
- 20. Most of my problems are due to the fact that other people just don't understand me.
- 21. Before I do anything, I think about all the things that can go right or wrong. (r)
- 22. When I get frustrated, I often "let off steam" by blowing up.
- 23. I say no when someone wants me to do things I know are wrong or dangerous. (r)

# APPENDIX D

Items	Cooke and Michie			Frick et al.		
	<u>NAR</u>	<u>AFF</u>	<u>BEH</u>	<u>NAR</u>	<u>AFF</u>	<u>BEH</u>
Becomes angry when corrected or punished	x			x		
Brags excessively about his/her abilities, accomplishments, or possessions	x			x		
Uses or "cons" other people to get what he/she wants				x		
Seems to think that he or she is better or more important than other people	x			х		
Teases or makes fun of other people	x			x		
*His/her emotions seem shallow and not genuine		x		x		
Keeps the same friends (r)		x			x	
Feels bad or guilty when he/she does something wrong (r)		x			x	
*Is concerned about how well he/she does at school/work (r)			x		x	
Does not show feelings or emotions		x			x	
Is concerned about the feelings of others (r)		x			x	
*Is good at keeping promises (r)			x		x	
Gets bored easily			х			x
*Blames other for his/her mistakes		x				x
Acts without thinking of the consequences			x			x
Engages in risky or dangerous activities			x			x
Does not plan ahead, or leaves things to the "last minute"			x			x

Three-factor model based on Cooke and Michie (2001) and Frick et al. (1994)

NAR = narcissism (Frick et al.)/Deceitful Interpersonal Style (Cooke and Michie) AFF = Callous-Unemotional Traits/Deficient Affective Experience BEH = Impulsivity/Impulsive and Irresponsible Behavioral Style \*indicates cross-loaded items

## APPENDIX E

Figure 1.

Predictive model of the prediction of aggression with youth report of psychopathy



# APPENDIX F

Figure 2.

Trimmed model of the prediction of aggression with youth report of psychopathy



# APPENDIX G

Figure 3.

Model of the prediction of aggression with narcissistic factor of psychopathy



# APPENDIX H

Figure 4.

Model of the prediction of aggression with affective factor of psychopathy


## APPENDIX I

Figure 5.

Model of the prediction of aggression with behavioral factor of psychopathy



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