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The Relationship Between the Youth Psychopathic Traits Inventory and Psychopathology in a U.S. Community Sample of Male Youth

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The Youth Psychopathic Traits Inventory (YPI) is a self-report measure of juvenile psychopathic traits. Validity data for this measure are limited, especially for nonreferred samples. This report investigated the concurrent validity of the YPI by assessing 171 nonreferred male youth (M age = 12.96 years) with a battery of self-, parent-, and peer-report measures including the Child Behavior Checklist (CBCL), the Reactive-Proactive Aggression Questionnaire (RPQ), the Antisocial Process Screening Device (APSD), and a peer-sociometric measure of aggression. Results confirmed the expected correlations between the YPI and measures of proactive aggression, other externalizing and internalizing behavior, and parent-report psychopathic-like traits. In addition, cluster analyses of YPI scores revealed 2 groups of youth (low vs. high) who scored differently on measures of externalizing behavior. This study supports the utility of the YPI as a research tool for assessing juvenile psychopathic traits.

Adolescence is a developmental period associated with increased risk for various forms of antisocial behavior. The construct of psychopathy has proven useful in identifying a subset of antisocial individuals, but has only recently been applied to youth due in large part to what was perceived as instability of the construct of psychopathy in children and adolescents. Other areas of concern related to the topic of psychopathic traits in youth have centered on whether the descriptive or predictive utility of the construct outweighs the negative consequences associated with labeling children and adolescents and on the reliability, validity, and developmental appropriateness of current assessment tools (Edens, Skeem, Cruise, & Cauffman, 2001).

In recent years, there have been several developments in the assessment of psychopathic traits in youth, and some of the issues just mentioned are increasingly being addressed (Sharp & Kine, 2008). For example, studies have demonstrated the stability of psychopathic traits over a 4-year period in adolescents (Frick, Kimonis, Dandreaux, & Farell, 2003). Offenders with psychopathic personality often show an earlier onset of dysfunctional behavior compared to other offenders (Hare, 1998; Lynam, 1996), and more recent work has suggested that psychopathic traits even in younger children manifest themselves similarly to those in adults (see Lynam & Gudonis, 2005; Kotler & McMahon, 2005; and Frick, 2009, for reviews). The items (e.g., lying, manipulation, shallow affect, remorselessness, impulsivity, etc.) making up the three core personality dimensions of adult psychopathy (interpersonal, affective, behavioral) have been shown to cluster into these core dimensions in children as well (Frick, Bodin, & Barry, 2000; Johnstone & Cooke, 2004). The affective (callous-unemotional) dimension, in particular, has been shown to distinguish a subgroup of conduct-disordered youth with more prominent features of aggression, delinquency, and antisocial behavior (Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick et al., 2003; Lynam, 1997), and specifically unprovoked, instrumental (proactive) aggression (Christian et al., 1997; Frick & Ellis, 1999; Pardini, Lochman, & Frick, 2003).

There is evidence that youth with psychopathic traits might be more responsive to some interventions than their adult counterparts (Hawes & Dadds, 2005). Not surprisingly, researchers have called for the identification of psychopathic traits in younger individuals, with the argument that interventions can be specifically targeted toward this at-risk group (Frick, 2002; Salekin, Rodgers, & Machin, 2001). Nevertheless, questions of whether the descriptive or predictive utility of the construct outweighs the negative consequences associated with labeling children and adolescents are persistent and complicated. Adolescents labeled as psychopathic are more likely to receive harsher and perhaps longer sentences than those not labeled as such, for otherwise equal offenses (Edens et al., 2001). However, if the label of psychopathy is used appropriately, it might enable the early identification of youth who are at risk of being persistent offenders. Given the possible legal and social ramifications related to the psychopathy label, research in this area must be based on theoretically and psychometrically sound measures of psychopathic traits.

Although interview-based measures of psychopathy like the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2004) have shown acceptable reliability and validity, they are labor intensive because of their reliance on thorough case file evaluations and interviews. This has led to the development of more time-efficient methods of measuring psychopathic traits in larger samples of youth, such as the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) in the United States and the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002) in Sweden.

Self-report measures are particularly important to obtain better insight into the core affective traits of psychopathy (Lilienfeld & Andrews, 1996). Subjective feelings of empathy or guilt (or the lack thereof), for example, might be difficult to observe,

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especially to observers such as parents or teachers (Andershed, Kerr, Stattin, et al., 2002; Lilienfeld & Andrews, 1996). Further, there is evidence that the reliability and validity of self-report for assessing most types of child psychopathology increases in adolescence, whereas the validity of parent and teacher report decreases (Kamphaus & Frick, 2002). Although the APSD was initially developed as a parent/teacher report measure (Frick, O'Brien, Wootton, & McBurnett, 1994), it has been modified to a self-report format (Frick & Hare, 2001). Internal consistency reported for the self-report version of the APSD in a community sample has been adequate for total score (.78–.81), but has been less desirable for factor scores, ranging from .50 to .68 (Munoz & Frick, 2007). Nevertheless, the APSD is the most widely used and researched brief psychopathy measure in the United States (Kotler & McMahon, 2005; Sharp & Kine, 2008).

One potential limitation of the APSD is that items are presented in a straightforward, face-valid manner (e.g., the child "is not concerned with the feelings of others" or "uses or cons others"). This was less problematic for parent or teacher report measures, but it renders self-report measures particularly vulnerable to the association between psychopathic traits and deceptive self-perception. This potential weakness was addressed in the development of the YPI (Andershed, Kerr, Stattin, et al., 2002) by constructing items to be framed in a more positive (less transparent) way. In addition, because the YPI was developed for use in community samples and because it contains several items for each trait, it might provide a better range of scores for community samples, making it a potentially more useful instrument for research at the trait level (Andershed, Kerr, Stattin, et al., 2002).

Initial validity for the YPI was demonstrated in an unselected community sample consisting of 1,024 eighth graders in a medium-sized Swedish community (Andershed, Kerr, Stattin, et al., 2002). The YPI's 10 scales (dishonest charm, grandiosity, lying, manipulation, callousness, unemotionality, remorselessness, impulsiveness, thrill-seeking, and irresponsibility) were found to be internally consistent (average $\alpha = .74$) and conformed well with the authors' hypothesized three-factor structure (see Cooke & Michie, 2001) of Interpersonal, Affective, and Lifestyle dimensions (Comparative Fit Index = 0.98). The YPI generally was moderately associated with a range of deviant behavior, including self-report indexes of the age of first contact with the police, early behavior problems, conduct problems, and teacher ratings of problem behaviors (Andershed, Kerr, Stattin, et al., 2002).

Few studies outside of Sweden have examined the YPI for its validity. Skeem and Cauffman (2003) examined its comparability with the PCL:YV in a U.S. sample of 160 adolescent offenders. Although both measures showed acceptable reliability, there was only moderate empirical overlap in the two measures. Whereas both significantly predicted different forms of short-term deviant behavior, a cluster analysis using YPI scores yielded two groups whose PCL:YV scores did not differ. In addition, the YPI, but not the PCL:YV, was inversely associated with anxiety, supporting the contention by the YPI's developers that the measure focuses more tightly on core interpersonal and affective features (Skeem & Cauffman, 2003).

Poythress, Dembo, Wareham, and Greenaum (2006) investigated the validity of the YPI in a correctional setting in the United States. Their study examined 165 adolescents enrolled in a juvenile diversion program with measures including the YPI and the APSD. Findings from this work confirmed the expected positive correlations between the YPI and criminal justice measures and measures of externalizing and internalizing psychopathology. The YPI also showed superior internal consistency as compared to the APSD (Poythress et al., 2006). Additional work with this sample extended support for the superior psychometric properties of the YPI and supported its utility in distinguishing subgroups of adolescents for further assessment (Wareham, Dembo, Poythress, Childs, & Schmeidler, 2009).

Dolan and Rennie (2007) investigated the validity of the YPI in a correctional setting in the United Kingdom. Their study examined 115 male adolescents with Conduct Disorder as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision [*DSM–IV–TR*]; American Psychiatric Association, 2000) on measures including the YPI and the Child Behavior Checklist (CBCL; Achenbach, 1991). Findings from this work confirmed the expected positive correlations between the YPI and aggression, delinquency, attention problems, and impulsivity. Through cluster analyses, the YPI was also able to identify a "psychopathic-like" subgroup with higher impulsive/aggressive and delinquent scores and lower empathy (Dolan & Rennie, 2007).

Therefore, although the YPI was initially developed for use in community samples, research in the United States evaluating this measure has done so in incarcerated or conduct-disordered samples. Although the attention paid to this population is appropriate, validity studies in U.S. community samples are also necessary. Previous research indicates that subclinical levels of psychopathic traits are associated with antisocial behavior at a less severe level (Frick et al., 2000). Studying psychopathy solely within referred samples therefore provides information that might be limited to only a subset of the distribution of individuals with psychopathic traits. It is important to focus on community samples to understand the full breadth of the manifestation of psychopathy and to gain insight into the relation between psychopathic traits and the risk for maladaptive behavior. Research with community youth samples can provide clues to the processes that underlie the development of psychopathic traits and suggest how this development can be prevented (Dadds, Fraser, Frost, & Hawes, 2005). To this end, psychopathy measures should also be assessed for validity in community samples.

In the only validity study in North America of the YPI with a nonforensic sample of 217 Canadian undergraduates, Campbell, Doucette, and French (2009) reported high internal consistency for the YPI, with factor score alpha levels ranging from .74 to .85. In addition, the YPI demonstrated convergent validity with the Psychopathic Personality Inventory–Revised (PPI–R; Lilienfeld & Widows, 2005) and the Levenson Self-Report of Psychopathy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), and concurrent validity in its pattern of correlations with measures of personality (Campbell et al., 2009).

Against this background, the goal of this study was to investigate the concurrent validity of the self-report YPI in a U.S. community sample of boys. The first aim of the study was to compare YPI scores to a standard and well-studied measure of psychopathy, the APSD. We predicted that self-reported YPI scores would be positively correlated with self- and parent-reported APSD scores. Specifically, we expected that the strongest relations would exist between YPI Interpersonal–APSD Narcissism, YPI Affective–APSD Callous/Unemotional, and YPI

Lifestyle–APSD Impulsivity, as these scales conceptually overlap.

Because few studies have examined the unique characteristics of the YPI against a background of measures of child adjustment, our second aim was to examine the correlations between YPI scores and self-, parent-, and peer-report indexes of psychopathology. We predicted that YPI scores would be positively correlated with parent reports of externalizing behaviors, including aggressive behavior and rule-breaking behavior. Our expectation was that differential correlations would be seen between psychopathy scores and attention problems, with behavioral domain scores (YPI Lifestyle) being significantly positively associated with attention problems. Although work with adult and juvenile offenders has suggested that callous-unemotional traits might be related to attention problems (Dolan & Rennie, 2007; Kosson, 1996, 1998), this relation has not been clearly seen at lower trait levels (i.e., in community samples; Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002). Following previous research findings (e.g., Christian et al., 1997) we also predicted that YPI scores would be positively correlated with a measure of proactive aggression but not with a measure of reactive aggression, and positively correlated with a peer sociometric measure of interpersonal aggression.

The complicated relation among internalizing behavior (particularly anxiety), antisocial behavior, and psychopathic traits in juveniles (see Kubak & Salekin, 2009) made predictions concerning the relation between internalizing behavior and psychopathy difficult. Although the behavioral domain of traits involved with psychopathy is positively associated with internalizing behavior, including anxiety (Frick, 1998; Kubak & Salekin, 2009; Lilienfeld, 1994; Moffitt, 2003), significant negative associations with anxiety measures would instead be expected of the YPI Affective factor, focusing on the core affective traits of psychopathy (rather than on antisocial behavior), and provide evidence of discriminant validity.

The third aim of the study was to explore the utility of YPI scores in grouping nonreferred male youth. Here, we tried to answer the question whether individuals who cluster together on traits measured by the YPI differ in construct-relevant ways from individuals who do not cluster together on these traits. This classification of antisocial behavior is an important aspect of the usefulness of the psychopathy construct for determining treatment strategies (Coccaro, Astill, Herbert, & Schut, 1990; Crick & Dodge, 1996; Mathias et al., 2007; Tremblay et al., 1992), and here represents an alternate but complementary approach to the correlation analyses. We predicted that YPI scores would identify a subset of youth that differ on behavioral correlates of psychopathy such as aggression and rule-breaking behavior, based on previous work with the YPI both in the initial validation community sample (Andershed, Kerr, Stattin, et al., 2002) and with conduct-disordered samples (Dolan & Rennie, 2007).

To address these three aims, this study examined the relation between YPI scores and psychopathy and psychopathology scores from multiple perspectives (parent-, self-, and peer-report). To our knowledge, this is the first study to examine the relation among YPI scores; APSD scores; and self-, parent-, and peer-report measures of internalizing and externalizing psychopathology in a U.S. community sample. It is also the first study that examines the YPI in relation to a peer sociometric measure of interpersonal aggression. The results of this study provide important information about concurrent validity for the YPI beyond the current work, which is limited to a few research groups and samples (Kotler & McMahon, 2005).

METHODS

Participants

This study was part of a larger project focusing on the impact of reputations in peer relations on externalizing problems; thus a context was purposefully sought in which participants had a history of association with one another. Further, given the inclusion of peer sociometric status as external criterion for the YPI, it was necessary to recruit participants who knew each other. Participants were 171 males ages 8 to 18 recruited through a local Boy Scout troop in Houston, Texas. Six participants, not significantly different from others in the sample, lacked complete data on all measures and were excluded from the hierarchical cluster analysis. The final data set for that analysis therefore consisted of 165 males. The mean age for our sample was 12.96 years ($SD = 1.90$). Although 48.5% ($n = 80$) of children were between ages 8 and 12 and 51.5% ($n = 85$) of children were between ages 13 and 18, only 1 boy was age 8, and no boys were age 9. Therefore, the majority of the sample was 10 to 18 years old.

Participants knew one another for an average of 2.3 years ($SD = 1.4$), and met for weekly meetings for 1 hour. Most also participated in weekend camping trips several times yearly and a month-long summer camp once yearly. Boy Scout samples, although technically "community" samples, might differ from normal samples because some scout troops, including those from this study, purposefully recruit some youth that are at-risk for behavior problems; that is, youth who are economically disadvantaged, live in single- or no-parent homes, or are growing up in hostile environments such as crime- or drug-infested neighborhoods (see, e.g., Scoutreach Division, 2010). Thus, this sample was expected to have a range of psychopathology scores reflecting this diversity, which is important for trait-level investigations (Andershed, Kerr, & Stattin, 2002).

The sample was approximately 62% White, 15% Hispanic, 11% African American, 10% Asian, 2% Middle Eastern, and 1% other. Based on school demographic information (highest level of parental educational attainment), the socioeconomic status of the sample was estimated to be primarily middle class. Approximately 10% of sample's parents had obtained a high school diploma or equivalent certification, 18% received some college, 48% obtained a bachelor's or associate's degree, 17% received a master's degree, and 7% received doctorate-level training.

Procedure

Prior to the study, ethics approval was obtained from the institutional review board. Information on the study was posted on the scout troop's Web site for parents to read or sent out by e-mail through organization leaders. The research team's contact information was provided and leaders, parents, and youth were encouraged to ask any questions they had about the study or consent procedures. Self-report measures were administered in groups of 5 to 10 scouts with parent-report measures administered concurrently. Three research staff members were present to assist participants with questions regarding measures. With the exception of a couple of isolated cases, participants did not feel it necessary to clarify the questions. Care was taken not

to influence youth's answers to the questions in cases where clarification was sought.

Measures

The Youth Psychopathic Traits Inventory. The YPI (Andershed, Kerr, Stattin, et al., 2002) is a 50-item self-report measure of the personality traits associated with psychopathy. It includes 10 five-item subscales measuring different psychopathic traits. The YPI has three higher order factors: an Interpersonal factor, composed of the subscales dishonest charm, grandiosity, lying, and manipulation; an Affective factor, composed of the subscales callousness, unemotionality, and remorselessness; and a Lifestyle factor, composed of the subscales impulsiveness, thrill-seeking, and irresponsibility. In the YPI developmental study in a community sample of eighth graders (Andershed, Kerr, Stattin, et al., 2002) Cronbach's alpha was .88 for the YPI Total score; alphas of .84, .74, and .78 were obtained for the Interpersonal, Affective, and Lifestyle domains, respectively. Given the YPI's purpose as a research tool, no clinical cutoff scores were recommended.

A strength of the YPI is that, rather than frame personality traits as deficits (e.g., "My emotions are more shallow than others'"), the YPI instead frames traits as neutral or appealing characteristics (e.g., "I usually feel calm when other people are scared," "It's fun to make up stories and try to get people to believe them," and "To feel guilt and regret when you have done something wrong is a waste of time"). Phrasing the items in this neutral manner is thought to reduce the likelihood that youths are selecting a socially desirable answer. Respondents are asked to rate the degree to which the individual statements or items apply, using a 4-point Likert-type scale ranging from 1 (*Does not apply at all*) to 4 (*Applies very well*). For interpretability across factors (which differ in number of items per factor), factor scores and total scores are typically reported as averages, yielding scores between 1 and 4. It might be helpful to note when comparing YPI scores across other samples that some investigators have coded YPI scores using a scale from 0 to 3 rather than 1 to 4 (e.g., Wareham et al., 2009); in this study we coded YPI items according to the 1 to 4 convention. Given the empirical support for the three-factor structure for the YPI, combined with the fact that these factors are conceptually equivalent to the APSD's (see later), factor scores rather than their constituent subscales were used for correlation analyses. For this sample, the YPI Interpersonal, Affective, and Lifestyle scales had internal consistencies of .91, .83, and .85, respectively.

Antisocial Process Screening Device. The APSD (Frick & Hare, 2001) is a 20-item self-report measure designed to assess traits associated with the construct of psychopathy similar to those assessed by the PCL–R (Hare, 1991). For this study both self- and parent-report APSD scores were used. Each item on the APSD is scored either 0 (*not at all true*), 1 (*sometimes true*), or 2 (*definitely true*). Previous studies have reported that the APSD appears to best fit a three-factor structure, composed of the dimensions Narcissism, Callous/Unemotional, and Impulsivity (Vitacco, Rogers, & Neumann, 2003). Internal consistency previously reported for the self-report version of the APSD in a community sample was adequate for Total Score (.78–.81) but less so for factor scores, which ranged from .50 to .68 (Munoz & Frick, 2007). For this sample, the parent-report APSD Narcissism, APSD Callous/Unemotional, and APSD Impulsivity scales had internal consistencies of .75, .66, and .62, respectively, and the self-report APSD internal consistencies were poorer, at .64, .53, and .56, respectively.

The Child Behavior Checklist. The CBCL (Achenbach, 1991) is a measure of psychopathology completed by parents. The measure contains 112 problem items, each scored on a 3-point scale ranging from 0 (*not true*) to 2 (*very or often true*). The measure yields a number of scales, some empirically derived (the Syndrome scales) and some theoretically based (the *DSM*-Oriented scales). This study examined the empirically derived scales most often associated with core interpersonal, affective, and behavioral dimensions of psychopathy and with internalizing problems. The Total Problems scale yields a *T* score of general psychiatric functioning and two broad subscales of Externalizing behavior problems and Internalizing behavior problems. Externalizing is composed of the subscales aggressive behavior and rule-breaking behavior; Internalizing is composed of the subscales anxious/depressed, withdrawn/depressed, and somatic complaints. In addition, the attention problems subscale was examined as an important correlate of the behavioral domain of functioning. For this study, the CBCL scales all had internal consistencies greater than .79.

The Reactive-Proactive Aggression Questionnaire. The Reactive-Proactive Aggression Questionnaire (RPQ; Raine et al., 2006) is a 23-item self-report measure of aggression yielding three scales: Reactive, Proactive, and Total aggression. Internal consistencies reported for the three scales ranged from .81 to .90 (Raine et al., 2006). For this sample, all three scales had internal consistencies greater than .87. Unprovoked, instrumental (proactive) aggression is thought to be associated with psychopathic traits (Christian et al., 1997; Frick & Ellis, 1999; Frick et al., 2003; Pardini et al., 2003).

Because previous research has observed significant proactive–reactive correlations (Brown, Atkins, Osborne, & Milnamow, 1996; Day, Bream, & Pal, 1992; Dodge & Coie, 1987; Poulin et al., 1997), the authors of the RPQ recommended creating residualized measures of proactive and reactive aggression to help assess "pure" proactive and reactive aggression independent of each other. Essentially, these are partialed variables in which each variable (proactive and reactive) serves as the controlling variable to the other. A very good argument has been made that with the creation of residualized variables, one can no longer be certain of what the leftover variance truly represents (Lynam, Hoyle, & Newman, 2006). With that caveat in mind, and because we retain other measures of aggression (the CBCL, the unresidualized RPQ scales, and peer nomination), because the focus is specifically on examining the differential relations of the two scales, we utilized residualized measures created in the same method used by Raine et al. (2006): Reactive aggression was regressed on proactive scores and Pearson standardized residuals ($M = 0$, $SD = 1$) were used to represent purely proactive aggression, and the standardized residuals of proactive aggression on reactive aggression were used to represent purely reactive aggression. For correlation analyses we examined both raw scores and residualized scores and used the pattern of correlation results to determine which scoring method to use for the cluster analysis.

Peer Nomination of Relational Aggression. A peer-nomination instrument developed by Werner and Crick (1999) was used to assess relational aggression. The measure consists of 24 items. Seven of the items make up a relational aggression subscale (e.g., "this person retaliates by excluding others from activities"). This subscale has been found to be highly reliable, with an alpha of .87. Following Werner and Crick, participants were provided with a group membership roster to be used during self-administration of the peer-nomination instrument. For each of the behavioral items, participants were instructed to nominate up to five peers who best fit each description. The number of nominations each participant received from his or her peers was summed for each item and totaled.

Statistical Analysis

Before conducting analyses, the data were cleaned and examined for missing data and outliers. Mahalanobis difference tests revealed no significant outliers, and tests for skewness and kurtosis as well as examining residual *z*-score distributions revealed that YPI and APSD scores did not violate assumptions of normality.

Analyses were carried out in SPSS v. 17 (SPSS, Inc., 2009, Chicago, IL). Correlation analyses were used to examine the relation among YPI scores, APSD scores, and measures of psychopathology. Spearman's rank correlation statistic was used for correlation analyses, given the nonnormal distributions of some of the measures (e.g., RPQ proactive aggression). Hierarchical cluster analysis using Ward's (1963) method was performed to generate subgroups for further analyses. Ward's method is an analysis of variance (ANOVA)-type approach that maximizes between-group differences and minimizes within-group distances (Kaufman & Rousseeuw, 2005), and has been favored in the literature investigating these measures (Andershed, Kerr, Stattin, et al., 2002; Dolan & Rennie, 2007; Skeem & Cauffman, 2003). Although this approach lacks the capacity for formal model testing present in Bayesian or model-based approaches (e.g., latent class analysis), it requires somewhat fewer assumptions (e.g., the independence of observed constituent variables) and most of the advantages of model-based approaches (the ability to deal with mixed measurements levels, issues with scaling, etc.) are inapplicable to the current analysis (Vermunt & Magidson, 2002). In this analysis, youth were grouped by their YPI Interpersonal, YPI Affective, and YPI Lifestyle scores. More details about the clustering algorithm and cluster selection are provided in the Results section. The resulting groups were compared on measures of externalizing and internalizing psychopathology.

RESULTS

Descriptive Statistics

Descriptive statistics are provided in Table 1. Scores of the variables of interest were in the range expected for a community sample. In this sample, 6.1% of participants had *T* scores in the clinical range (>63) for Externalizing behavior on the CBCL, and 12.8% had *T* scores in the clinical range (>63) for Internalizing behavior, consistent with national prevalence estimates (Merikangas et al., 2010). The mean parent-report APSD Total score was 8.81 ($SD = 4.89$). No participants had parent-report APSD Total scores above the clinical cutoff of 27 recommended by Blair, Mitchell, and Blair (2005), although 2 participants (1.2%) had a score of 26. Given that the prevalence of psychopathy within community samples has been estimated at 0.5% to 1.0%, this indicates that the sample reported here was representative of nonreferred samples (Hart & Hare, 1997). It is interesting to note that, consistent with previous research (Munoz & Frick, 2007), self-report APSD scores were higher than parent-report APSD scores. Given the centrality of relatively unobservable traits to the psychopathy construct (Andershed, Kerr, Stattin, et al., 2002; Lilienfeld & Andrews, 1996), this might be expected, but it also can be seen as demonstrating that the face validity of the self-report APSD did not lead to socially desirable responding in this sample.

TABLE 1.—Descriptive statistics.

	M	*SD*	Min–Max
Age	12.96	1.9	8–18
CBCL			
Total	49.73	9.75	24–77
Externalizing	48.85	9.47	33–80
Internalizing	50.88	9.85	34–75
Aggressive	53.92	6.66	50–94
Rule breaking	53.01	4.67	50–77
Attention	54.76	6.26	50–86
Anxious/Depressed	53.74	5.58	50–74
Withdrawn/Depressed	55.57	6.74	50–82
Somatic	53.87	5.57	50–78
Thought	53.69	5.45	50–72
YPI Total	2.09	.47	1.16–3.66
YPI Interpersonal	1.98	.58	1.05–3.70
YPI Affective	2.12	.53	1.27–4.00
YPI Lifestyle	2.22	.53	1.13–3.93
APSD Total	12.28	5.39	1–32
APSD NAR	3.54	2.33	0–11
APSD CU	3.76	2.13	0–11
APSD IMP	4.22	1.97	0–10
Parent APSD Total	8.81	4.89	0–26
Parent APSD NAR	2.06	2.10	0–13
Parent APSD CU	2.81	2.18	0–10
Parent APSD IMP	3.65	1.81	0–9

Note. CBCL = Child Behavior Checklist; YPI = Youth Psychopathic Traits Inventory; APSD = Antisocial Process Screening Device; NAR = Narcissism; CU = Callous/Unemotional; IMP = Impulsivity. CBCL scores are presented as *T* scores. YPI scores are presented as standardized (average) scores. APSD scores are presented as raw scores.

One-way ANOVAs performed at α levels of .05 revealed no significant differences on variables of interest related to ethnicity. YPI scores were not significantly correlated with age. Nevertheless, given that this study involves a broad age range (8–18) as well as a downward extension of the YPI, Table 2 provides the results of *t* tests examining age differences between younger (8–12) and older (13–18) children for YPI and APSD scores. These results show no age differences for total or subscale scores, with the exception of small differences on both the Lifestyle factor on the YPI (Cohen's $d = .31$ and the Impulsivity factor on the APSD (Cohen's $d = .35$), with older boys demonstrating significantly higher scores.

Given the lack of work in community samples with these measures, subscale intercorrelations are presented for the YPI and the self-report APSD (Table 3). Although the YPI and the APSD are made up of factors that are conceptually equivalent, the YPI's three factors all showed strong, significant intercorrelations (range $r = .52$–$.69$), whereas the APSD's factors did not. Specifically, the APSD Callous/Unemotional scale displayed a moderate correlation with the APSD Narcissism scale, $r(166) =$

TABLE 2.—Comparison of younger (8–12) with older (13–18) youth on self-report psychopathy scores.

	8–12[a]		13–18[b]			
	M	*SD*	*M*	*SD*	*t* Test *p* Value (2-Tailed)	Cohen's *d*
YPI Total	2.05	.48	2.14	.47	.22	.19
YPI Interpersonal	1.93	.57	2.03	.59	.31	.17
YPI Affective	2.11	.58	2.12	.48	.93	.02
YPI Lifestyle	2.14	.48	2.30	.56	.04	.31
APSD Total	11.58	5.83	12.94	4.90	.10	.25
APSD Narcissism	3.48	2.42	3.59	2.27	.75	.05
APSD CU	3.66	2.20	3.85	2.06	.57	.09
APSD Impulsivity	3.86	1.89	4.55	2.00	.03	.35

Note. YPI = Youth Psychopathic Traits Inventory; APSD = Antisocial Process Screening Device; CU = Callous/Unemotional. YPI scores are presented as standardized (average) scores. APSD scores are presented as raw scores.
[a]$n = 80$. [b]$n = 85$.

.19, $p = .013$, and a weak correlation with the APSD Impulsivity scale, $r(166) = .15$, $p = .054$.

Convergent Validity of the YPI With APSD Scores

As both the YPI and self-report APSD are brief, self-report measures of juvenile psychopathy, it was expected that they would correlate positively and strongly with one another. As shown in Table 3, YPI scores were moderately to strongly correlated with self-report APSD scores. The strongest correlations were seen between Total scores. Among the factor scores, as expected, YPI Interpersonal was most strongly related to APSD Narcissism, $r(164) = .63$, $p < .001$; YPI Affective was most strongly related to APSD Callous/Unemotional, $r(165) = .47$, $p < .001$; and YPI Lifestyle was most strongly related to APSD Impulsivity, $r(165) = .57$, $p < .001$. Each factor had the highest cross-measure correlation with the counterpart factor of the other measure, thus supporting convergent validity between the two measures.

Also shown in Table 3, all YPI factor scores and YPI Total scores were significantly correlated with parent-report APSD Total scores and with parent-report APSD Narcissism scores. All YPI factor scores with the exception of the YPI Affective factor were also significantly correlated with parent-report APSD Callous/Unemotional score. The strength of these correlations ranged from modest to moderate (range $r = .18$–$.29$). None of the YPI factors or Total score was correlated with parent-report APSD Impulsivity scores. This pattern of correlations showed generally poor convergence between the conceptually related factors of each measure, given that the parent-report APSD Impulsivity factor was uncorrelated with all YPI scores and that the weakest correlation for the YPI Affective factor was seen with the parent-report APSD Callous/Unemotional factor.[1]

Relation Between YPI Scores and Psychopathology on the Child Behavior Checklist

Table 4 summarizes the relations between YPI scores and psychopathology as measured by the CBCL. All YPI factor and Total scores were significantly positively correlated with CBCL Rule-breaking behavior and CBCL Somatic complaints. YPI Total and YPI Lifestyle scores were significantly positively correlated with CBCL Aggressive behavior and CBCL Externalizing total. Only the YPI Lifestyle factor was correlated with CBCL Attention problems and CBCL Total problem scores. None of the YPI factor or Total scores was correlated with CBCL Internalizing total or with CBCL Withdrawn/Depressed, but the YPI Affective factor had a significant negative correlation with CBCL Anxious/Depressed. Significant correlations between the YPI and the CBCL ranged from modest ($r = .16$) to moderate ($r = .29$)

Relation Between YPI Scores and Proactive Versus Reactive Aggression RPQ Scores

Table 4 also summarizes relations between YPI scores and proactive/reactive aggression. This study was consistent with previous research that observed significant proactive–reactive correlations of .41 to .76 (Brown et al., 1996; Day et al., 1992; Dodge & Coie, 1987; Poulin et al., 1997), in that the RPQ raw proactive aggression score was significantly correlated with the RPQ raw reactive aggression score ($r = .55$, $N = 167$, $p < .001$). Therefore, partial correlations were examined by creating residualized variables (see earlier). Given recent criticisms against using residualized scores (Lynam et al., 2006), both raw scores and standardized residuals were used in the correlation analysis. As expected, YPI Total and factor scores were significantly positively correlated to youth self-report raw scores of both proactive and reactive aggression. However, when standardized residuals were used, YPI Total and factor scores were not significantly related to youth self-report of reactive aggression. There were significant moderate to strong positive correlations between YPI Total scores and each of the three YPI factor scores and the residualized proactive aggression scores.

Given that the residualized RPQ scores appeared to be serving in this instance to differentiate reactive and proactive aggression in the expected way for the YPI (i.e., patterns of correlations were either formed or maintained by using the residualized scores, but not reversed), it was decided that using residualized

[1]To explore the contention that the self-report APSD's face validity makes response bias more likely, the convergence between the self- and parent- report APSD was also examined. As shown in Table 3, all self-report APSD factor scores and self-report APSD Total scores were significantly correlated with parent-report APSD Total scores and with parent-report APSD Narcissism scores($r = .18$–$.30$). All self-report APSD scores with the exception of the APSD Impulsivity factor were also significantly correlated with parent-report APSD Callous/Unemotional score ($r = .20$–$.26$). None of the self-report APSD factors or Total score was correlated with parent-report APSD Impulsivity scores. Although a priori hypotheses were not specified, these correlations were somewhat weaker than is typically seen between self- and parent report in community samples (e.g., Verhulst & van der Ende, 1992). This, combined with the pattern of correlations among factors, does not support a strong convergence between self- and parent report APSD scores.There was better convergence between YPI Interpersonal factor and parent-report APSD Narcissism factor than there was for child- and parent-report APSD Narcissism factor and, with the exception of the Callous/Unemotional scale, generally stronger correlations than were seen between child- and parent-report APSD. Given that the effects of item overlap would tend to favor APSD to APSD correlations, these findings could be seen as supporting the idea that the face validity of the APSD makes it more vulnerable to response bias. However, the higher scores on self- versus parent-report APSD calls into question whether the self-report APSD is particularly susceptible to socially desirable responding, at least within community samples such as this, in which the pressures for socially desirable responding are less than in a forensic context.

TABLE 3.—Subscale intercorrelations and convergent validity for YPI and APSD scores.

	Self-Report Psychopathy Traits							
	YPI Scale				APSD Scale			
	i	ii	iii	iv	v	vi	vii	Viii
i. YPI Total	1							
ii. YPI Interpersonal	.92**	1						
iii. YPI Affective	.80**	.59**	1					
iv. YPI Lifestyle	.85**	.69**	.52**	1				
v. APSD Total	.77+	.69**	.58**	.70**	1			
vi. APSD Narcissism	.61**	.63+	.39**	.52**	.82**	1		
vii. APSD CU	.45**	.33**	.47+	.42**	.59**	.19*	1	
viii. APSD Impulsivity	.56**	.48**	.38	.57+	.78**	.60**	.15	1
Parent APSD Total	.28**	.26**	.18*	.29**	.30**	.19*	.26**	.18*
Parent APSD NAR	.29**	.26**	.29**	.24**	.26**	.19*	.19*	.18*
Parent APSD CU	.21**	.20*	.14	.22**	.26**	.20*	.26**	.12
Parent APSD IMP	.09	.08	.01	.14	.11	.05	.07	.11

Note. YPI = Youth Psychopathic Traits Inventory; APSD = Antisocial Process Screening Device; NAR = Narcissism; CU = Callous/Unemotional; IMP = Impulsivity.
*$p < .05$, 2-tailed. **$p < .01$, 2-tailed. +Correlations indicate convergent validity between measures and are significant at $p < .01$, 2-tailed.

scores for the cluster analysis would best facilitate comparisons between clusters.

Relation Between YPI Scores and Peer Status as Interpersonally Aggressive

Table 4 also summarizes the relations between YPI and peer sociometric status variable. YPI Total, Interpersonal, and Lifestyle scores had significant modest positive correlations with frequency of nominations as "interpersonally aggressive" by peers, although YPI Affective scores did not.

TABLE 4.—Correlations between YPI scores and CBCL scores, RPQ scores, and peer nominations as interpersonally aggressive.

	YPI Total	YPI Interpersonal	YPI Affective	YPI Lifestyle
CBCL Total	.10	.07	.01	.21**
CBCL Internalizing	.06	.05	−.02	.11
CBCL Anxious/Depressed	−.08	−.04	−.20*	.02
CBCL Withdrawn/Depressed	.06	.03	.02	.09
CBCL Somatic	.20*	.16*	.16*	.24**
CBCL Externalizing	.20*	.14	.15	.25**
CBCL Rule breaking	.27**	.22**	.19*	.29**
CBCL Aggressive	.16*	.10	.15	.21**
CBCL Attention	.07	.06	−.05	.20*
Reactive aggression	.38**(.09)	.38**(.14)	.20*(−.01)	.36**(.07)
Proactive aggression	.58**(.41**)	.54**(.34**)	.43**(.33**)	.49**(.39**)
Peer nomination	.18*	.16*	.11	.23**

Note. Correlations in parentheses are for residualized scores. YPI = Youth Psychopathic Traits Inventory; CBCL = Child Behavior Checklist; RPQ = Reactive-Proactive Aggression Questionnaire.
*$p < .05$, 2-tailed. **$p < .01$, 2-tailed.

Cluster Analyses to Derive Subgroups of Nonreferred Youth Based on Psychopathy Scores

Hierarchical cluster analysis in SPSS v. 17 (SPSS, Inc., 2009, Chicago, IL) using Ward's (1963) method was performed to classify groups based on psychopathy scores. Ward's method is an agglomerative approach; in other words, it begins with *N* number of clusters of 1 case each. The sum of squared Euclidean distances from each case to the mean of all variables is calculated, and the cluster to be merged is the one that will increase the sum the least. This process continues until the data are merged into one cluster (Blashfield & Aldenderfer, 1988).

Although there is no universally accepted way to determine the optimum number of clusters, three general elements in evaluating clusters are agreed on: interpretability, or the meaning of each cluster should be readily discerned from the constituent variables (in this case, YPI factor scores); criterion validity, or the clusters should differ on other variables known from theory or prior research to correlate with the concept that clustering is supposed to reflect; and size, or a cluster must consist of a sufficient amount of cases to be meaningful. What size is "sufficient" can vary, but to assess the validity of the clusters, the size of the cluster is ideally such that difference tests are interpretable (Aldenderfer & Blashfield, 1984; Kaufman & Rousseeuw, 2005).

An important index of interest in evaluating solutions based on these elements is the ratio of between-group variance to total variance explained. To determine the optimum number of clusters, a variance-ratio method related to the scree method used in exploratory factor analysis (EFA) is utilized: change in the percentage of variance explained (in cluster analysis, the agglomeration, or fusion, coefficient is used rather than eigenvalue as in EFA) is graphed relative to the number of clusters. Ideally, an "elbow" in the slope of the line can be identified where the change in percentage of variance explained levels off. This point would mark the optimum number of clusters, and beyond that point is "scree," or rubble at the bottom of the more significant cliff (Kaufman & Rousseeuw, 2005; Romesburg, 2004).

For this study, the scree/variance-ratio criterion clearly suggested a two-cluster solution (Figure 1). The two-cluster solution was also more tenable based on interpretability and criterion validity. For example, with a six-cluster solution we identified a

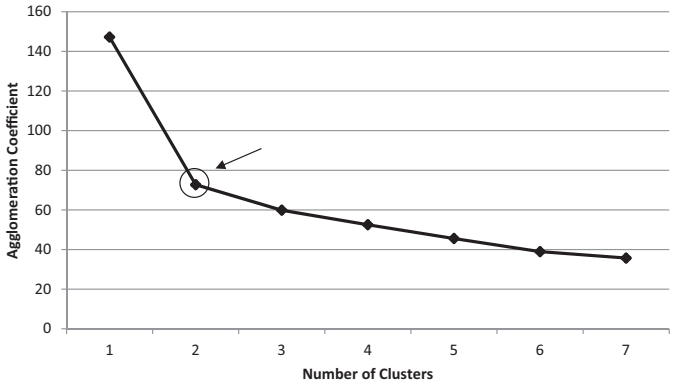

FIGURE 1.—Scree-plot for cluster analysis using Youth Psychopathic Traits Inventory scores. The circle indicates the "elbow," after which the ratio of between-cluster variance to total variance changes less significantly.

cluster of youth ($n = 18$) with a relatively higher mean score on the Lifestyle factor as compared to the Interpersonal and Affective factors. Therefore, this cluster might be conceptually interpretable. Based on the theory underlying the psychopathy construct, we would expect this cluster to differ from another cluster ($n = 20$, with higher scores on all three factors) in ways consistent with a group that, although high on the behavioral domain of traits (e.g., impulsivity), lacked the interpersonal and affective traits that round out the "psychopathic-like" profile. However, comparing these two clusters on the psychopathology indexes of interest, significant differences were not found. Therefore, although this cluster is conceptually pleasing, the six-cluster solution was not tenable based on either the variance-ratio criterion or cluster criterion validity. Because the two-cluster solution was most defensible based on the three elements of cluster interpretation, the comparison of these two clusters is described in detail next.

The cluster means from the hierarchical two-cluster solution were submitted to a nonhierarchical, k-means cluster analysis to further validate the cluster solution, and to further reduce the risk of cluster misassignment common with hierarchical cluster methods (Blashfield & Aldenderfer, 1988). Comparing the original to the k-means cluster assignments, the overall agreement was 92% and the kappa statistic was .82, $t = 10.73$, $p < .0001$. Kappa statistics greater than .80 indicate high agreement (McGinn et al., 2004)

Consistent with positive correlations seen between YPI factors, cluster analysis identified one group of youth with relatively lower scores on all three factors (low-trait, $n = 109$, 66% of the sample) and one with relatively higher scores (high-trait, $n = 57$, 34% of the sample). A follow-up discriminant function analysis examined the relative contribution of each factor to the grouping procedure (Table 5). Each factor contributed significantly to group membership, and contributed relatively equally to the clustering, as can be seen by examining the standardized canonical correlation coefficient, which functions analogously to a standardized regression coefficient in ordinary least squares regression. These coefficients were .44 for Interpersonal, .45 for Affective, and .56 for Lifestyle. Means (on a scale from 1.00–4.00) for the low-trait group were 1.68 ($SD = .38$), 1.87 ($SD = .36$), and 1.95 ($SD = .31$) for the Interpersonal, Affective, and Lifestyle factors, respectively. Means for the high-trait group were 2.57 ($SD = .42$), 2.60 ($SD = .48$), and 2.77 ($SD = .43$), respectively.

TABLE 5.—Discriminant function analysis of the constituent variables (YPI factor scores) for the two-cluster solution.

Factor	Canonical Coefficient	Chi-Square	*df*	*p*
YPI Interpersonal	.44	187.90	3	<.001
YPI Affective	.45	187.90	3	<.001
YPI Lifestyle	.56	187.90	3	<.001

Note. YPI = Youth Psychopathic Traits Inventory.

A comparison of the two groups on measures of psychopathology revealed significant differences in CBCL Externalizing total, CBCL Rule-breaking behavior, CBCL Aggressive behavior, CBCL Somatic complaints, RPQ total aggression, RPQ residualized proactive aggression, peer nomination as interpersonally aggressive, and parent- and self-report APSD scores, with the exception of parent-report APSD Impulsivity (Table 6). Effect sizes for these differences were in the medium range for parent- and peer-report measures, and in the large range for self-report measures. The groups did not differ on CBCL Total, CBCL Attention problems, CBCL Internalizing, CBCL Anxious/Depressed, CBCL Withdrawn/Depressed, RPQ residualized reactive aggression, or parent-report APSD Impulsivity scores.

DISCUSSION

We examined the concurrent validity of the YPI in relation to measures of externalizing behavior that are thought to be associated with psychopathy in youth and adults. To our knowledge, this is the first study to examine the relation between the YPI across self-, parent-, and peer-report measures of internalizing and externalizing pathology, peer sociometric status, and the APSD in a U.S. community sample, thereby addressing issues of shared method variance that made previous studies hard to interpret.

In this study, as in previous studies (Andershed, Kerr, Stattin, et al., 2002; Dolan & Rennie, 2007; Poythress et al., 2006; Skeem & Cauffman, 2003), the YPI generally outperformed the APSD on measures of internal consistency. The YPI has less face validity than similar measures, presenting items as neutral or positive rather than in a negative light, thus reducing the pressure for socially desirable responding. This is thought to better enable the YPI to measure the affective (callous/unemotional) dimension of traits associated with psychopathy, and the greater number of items per trait indexed provides a larger ranges of scores for trait-level research in community samples (Andershed, Kerr, Stattin, et al., 2002). Although the YPI was developed for use in community samples, care should be taken to contextualize these results given the potential impact of the psychopathy label. The purpose of investigating the range of traits often associated with psychopathy in community samples is not to identify "undiscovered" psychopaths or even necessarily to identify "precursors to psychopathy" in individual children, but rather to examine the cumulative risk for maladaptive behavior associated with different levels and specific constellations of these traits (Dadds et al., 2009).

YPI scores were moderately to strongly correlated with self-report APSD scores. The relations among the factor scores

TABLE 6.—Group differences between the high-trait and low-trait groups on the constituent variables (YPI scores) and measures of psychopathology.

	Low-Trait			High-Trait						
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p* Value	Mean Difference	Cohen's *d*
CBCL Externalizing	47.14	7.73	105	52.09	11.40	54	2.74	.008	3.75	0.51
CBCL Rule-breaking	51.97	2.92	104	54.87	6.38	55	2.96	.004	1.60	0.58
CBCL Aggressive	52.58	4.11	105	56.42	9.47	54	2.49	.015	2.44	0.53
CBCL Attention	54.16	5.39	105	55.95	7.68	55	1.58	.117	1.03	0.30
CBCL Internalizing	50.10	9.75	105	52.05	10.07	55	1.13	.260	1.06	0.20
CBCL Anxious/Depressed	53.68	5.38	105	53.91	6.11	55	0.04	.972	.02	0.04
CBCL Withdrawn/Depressed	55.28	7.01	105	56.04	6.13	55	0.68	.498	.76	0.16
CBCL Somatic	53.09	4.92	105	55.38	6.56	55	2.28	.025	2.30	0.39
CBCL Total	48.43	9.02	104	52.13	10.75	55	1.80	.075	5.95	0.37
Total aggression	8.73	5.27	109	14.98	8.53	56	5.01	<.001	6.25	0.88
Residualized proactive aggression	–0.27	0.65	109	0.56	1.30	56	4.50	<.001	.83	0.81
Residualized reactive aggression	–0.01	0.92	109	0.01	1.14	56	0.12	.902	.02	0.02
Mean child	8.38	8.91	109	12.39	13.47	56	2.02	.047	4.02	0.35
APSD-Child Total	9.77	3.75	108	17.09	4.89	56	10.66	<.001	7.32	1.68
APSD-Child CU	3.18	1.92	108	4.88	2.12	56	5.19	<.001	1.70	0.84
APSD-Child Narcissism	2.65	1.84	108	5.21	2.29	56	7.78	<.001	2.57	1.23
APSD-Child Impulsivity	3.56	1.63	108	5.50	1.99	56	6.70	<.001	1.94	1.07
APSD-Parent Total	7.92	4.59	105	10.48	5.13	54	3.08	.003	2.56	0.53
APSD-Parent CU	2.52	2.22	105	3.37	2.05	54	2.39	.018	.85	0.40
APSD-Parent Narcissism	1.66	1.89	105	2.80	2.35	54	3.08	.003	1.14	0.53
APSD-Parent Impulsivity	3.51	1.75	105	3.89	1.94	54	1.19	.236	.37	0.21

Note. YPI = Youth Psychopathic Traits Inventory; CBCL = Child Behavior Checklist; APSD = Antisocial Process Screening Device; CU = Callous/Unemotional.

appear to support convergence between each measure's three-factor structures. In addition, the YPI had, overall, stronger correlations with the parent-report APSD than did the self-report APSD. Given that the effects of item overlap would tend to favor APSD to APSD correlations, these findings are noteworthy, and could be seen as tentative support for the notion that the high face validity of the APSD might lead to socially desirable response, thereby decreasing the measure's overall validity.

Across parent- and peer-report measures of internalizing and externalizing pathology, correlations were generally in the moderate range for the YPI Lifestyle factor, and somewhat weaker for the YPI Interpersonal and YPI Affective factors, which consist of less directly observable traits. As predicted, we found that the YPI Total scores correlated positively with measures of externalizing behavior, including rule-breaking, aggressive behavior, and peer nominations as "interpersonally aggressive," as did YPI Lifestyle scores. YPI Interpersonal and Affective scores were correlated with CBCL Rule-breaking behavior, but not with CBCL Aggressive behavior. All YPI factor scores were correlated with residualized RPQ scores measuring proactive aggression, but not with reactive aggression. This result is consistent with studies of conduct-disordered youth in which psychopathic traits are associated with unprovoked, instrumental (proactive) aggression rather than reactive aggression (Christian et al., 1997; Frick & Ellis, 1999; Pardini et al., 2003).

All YPI factors were significantly positively correlated with CBCL Somatic complaints, the strongest correlations seen with the YPI Lifestyle scale. This result is consistent with research demonstrating a relation between internalizing problems and antisocial behavior problems (Hill, 2002). Conversely, the YPI Affective scale had a unique negative correlation with the CBCL Anxious/Depressed scale. Although the relation between anxiety and psychopathic traits in juveniles is complicated (see Kubak & Salekin, 2009, for an excellent overview), the fact that the affective dimension was associated specifically with decreased anxious behavior supports the expectation that the YPI measures features more specific to the construct of psychopathy as opposed to antisocial behavior in general, and consistent with the view that the absence of neuroticism is an important trait of psychopaths (Cleckley, 1941). Another interesting pattern related to the YPI Affective scale was that although it was the only YPI factor not significantly correlated with parent (CBCL Aggressive) and peer (nominations as interpersonally aggressive) reports of overall aggression, it had the strongest correlation with self-report of proactive aggression (residualized RPQ score).

We found that the YPI Lifestyle factor was the only YPI factor correlated with CBCL attention problems. Although this is satisfying (because the Lifestyle factor contains the impulsive dimensions of psychopathy one might expect to be related to attention problems), it is also noteworthy because work with adult and juvenile offenders has suggested that the attention problems often associated with psychopathy might be related to callous/unemotional traits (Dolan & Rennie, 2007; Kosson, 1996, 1998). Dolan and Rennie's (2007) study with conduct-disordered youth found a relation between the YPI Affective factor (measuring callous/unemotional traits) and attention problems. Our findings were consistent with Kosson et al.'s (2002) work with nonincarcerated adolescents, which failed to find a relation between attention problems and psychopathy. This might suggest that callous/unemotional traits relate to attention problems only above some critical level (as in adult or juvenile offenders).

The YPI was designed to identify a subgroup of conduct-disordered youth who were "psychopathic-like" (Andershed, Kerr, Stattin, et al., 2002) as part of a broader movement to acknowledge the heterogeneity of antisocial behavior. The classification and subtyping of antisocial behavior is important for determining the etiology (Barratt, Felthous, Kent, Liebman, & Coates, 2000) and treatment strategies for antisocial behavior (Coccaro et al., 1990; Crick & Dodge, 1996; Mathias et al., 2007; Tremblay et al., 1992). In the sample reported here, cluster

analysis was used to determine whether YPI scores, measuring the cluster of traits associated with "psychopathy," were useful in categorizing community-sample youth. In other words, do "psychopathic-like" traits as measured by the YPI discriminate between non-conduct-disordered youth in similar ways as they do conduct-disordered youth? A hierarchical cluster analysis on this sample using YPI scores indicated a two-cluster solution: those with higher YPI scores (high-trait, $n = 56$), and those with lower YPI scores (low-trait, $n = 109$). As should be noted based on the size of these groups (about one third of the sample was identified as high-trait), this method is not diagnostic, in that it does not incorporate even basic clinical decision-making tools (i.e., clinical cutoff scores), and would obviously be overinclusive if used in this way (i.e., these are not 56 "psychopaths"). Nevertheless, the mean YPI scores for the high-trait group were about 2 *SD* higher than YPI scores for the low-trait group.

Generally speaking, these two groups differed on measures of externalizing psychopathology, across self-, parent, and peer report, as well as on somatic complaints, but not on other measures of internalizing psychopathology. Effect sizes for these differences were large for self-report measures (not unexpectedly, given that the YPI scores used to form the groups were self-report), and medium for parent- and peer-report measures. The two groups differed on a residualized measure of proactive aggression, but not on a residualized measure of reactive aggression. This suggests that, in terms of the behavioral correlates, the two groups identified by the YPI differ on domains that are theoretically relevant to the construct of psychopathy, and not on irrelevant domains. The groups also differed, with the exception of the parent-report APSD Impulsivity scale, on APSD scores, supporting the convergent validity of the YPI. The two groups did not differ on CBCL Attention problems, again consistent with Kosson et al.'s (2002) work with nonreferred youth and suggesting that the association between callous/unemotional traits and attention problems often seen in conduct-disordered youth (Dolan & Rennie, 2007; Kosson, 1996, 1998) might only be present at higher levels of the trait(s).

This finding, that nonreferred youth grouped together by higher YPI scores differ in construct-relevant ways from those with lower scores, provides evidence for the utility of the YPI in measuring psychopathy traits in community samples. It also suggests that the correlates of the core personality dimensions of psychopathy manifest themselves similarly among nonreferred youth as among referred youth (Dolan & Rennie, 2007).

In conclusion, it has been argued that the early identification of psychopathic traits can provide a basis for early and targeted interventions to reduce the risk of offending. Although research on youth psychopathy is sparse, overall this study supports the concurrent validity of the YPI in relation to measures of externalizing and internalizing behavior that have been shown to be associated with psychopathy in children, adolescents, and adults. These findings support the use of the YPI as a research tool in U.S community samples for studying the role of psychopathic traits in antisocial behavior.

Although the APSD was selected as a convergent measure of psychopathy given its wide use, this study was consistent with some previous research suggesting problems with internal consistency and possibly factor structure for the APSD (e.g., Munoz & Frick, 2007). In explaining the poor internal consistency of the APSD, particularly the self-report version, it has been speculated that the measure's face validity makes response bias more likely; however, no study has specifically examined response bias in the APSD. Although this study did not assess response bias directly, the somewhat stronger correlations between the YPI and the parent-report APSD compared to those between the self- and parent-report APSD scores could be seen as support for this idea. On the other hand, the higher scores seen on self- versus parent-report APSD scores seen in this and other samples (e.g., Munoz & Frick, 2007) call into question whether such a bias (which would presumably be for socially desirable responding) has much significance in nonreferred samples. Furthermore, like all self-report measures, the YPI could remain subject to bias as well. Further studies investigating the YPI's potential utility as a screening tool are needed to assess its vulnerability to bias in situations where the assessment might have therapeutic or criminal justice implications for the individual.

Another limitation to this study is that it lacked a true gold standard for psychopathy given the problems with the APSD. For the YPI to be clinically informative, additional studies investigating the validity of the YPI for measuring psychopathic traits within this population are necessary. For the YPI to be used as a screening measure, work is needed to establish appropriate critical levels, or cut-points, to identify at-risk youth for further assessment. To meet both of these goals, larger samples are needed to investigate the relation between YPI scores and phenomena that are at lower base rates in community samples such as criminality, as are longitudinal studies to evaluate the stability of these traits and their associations with long-term maladaptive behavior.

Another potential limitation is that this study extended the use of the YPI to preadolescent children. Although our results regarding age differences support equivalence of the measure's functioning across age groups, it is possible that younger children had more difficulty understanding questions. Indeed, van Baardewijk et al. (2008) recently developed a child version of the YPI (currently only available in Dutch), which could be considered in future studies using the YPI.

Finally, alternate criterion measures related to psychopathy with which to validate self-report measures should be explored in future studies using the YPI. For example, recent research has uncovered functional neural connectivity differences in adolescents high in psychopathic traits (Marsh et al., 2008). Future work might examine how the core dimensions of psychopathic traits relate to these neurocognitive differences in community samples.

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