Unmasking the Association between Psychopathic Traits and Adaptive Functioning in Children

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Abstract

The appearance of positive adjustment is a theoretically relevant element of psychopathy, and is valuable for demonstrating its incremental validity over a broader antisocial orientation. We examined associations between psychopathic-like features and two measures of adaptive functioning: psychometric intelligence and (immunity to) internalizing problems. Ratings of psychopathy and behavioral problems were obtained in a community sample of children (N=1210). A bifactor model was fit to the psychopathic personality items to capture the underlying variance common to all traits (i.e., general factor) and to isolate a unique cluster of interpersonal traits. We hypothesized that the general psychopathy factor and specific interpersonal factor would exhibit opposing patterns of associations with external criteria. As expected, the general psychopathy factor was associated with greater anxiety/depression and lower cognitive ability. Contrary to hypothesis, the interpersonal factor was not associated with adaptive functioning (i.e., reduced internal distress or superior cognitive ability), although the predicted relations emerged after controlling for antisocial behavior. Hence, in a large representative sample of children, there is limited support for the premise that psychopathic traits are associated with positive adjustment and enhanced intelligence. Implications regarding the construct validity of psychopathy are discussed, including the role of heterogeneity in sample characteristics and instrument.

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1. Introduction

1.1 Unmasking the Association between Psychopathic Traits and Adaptive Functioning in Children

Psychopathy is based on several seeming contradictions. On one hand, the prototypical psychopath is described as showing "good" intelligence, an absence of nervousness, and social potency (Cleckley, 1941; Lynam & Derefinko, 2006). In other respects, the same individual shows profound ineptness: unreliability, impulsiveness, lack of long-term goals, and proneness to fits of anger. The complex and multi-faceted structure of psychopathy stems from the cooccurrence of socially advantageous features, on one hand, and harmful, self-destructive traits on the other hand. This intriguing paradox led Hervey Cleckley (1941) to describe psychopathy as a "mask of sanity".

In order to jointly accommodate the socially strategic features (e.g., superficial charm) and undercontrolled behaviors, most instruments operationalize psychopathy in such a manner that two broad factors arise: an "interpersonal" factor and an "impulsiveness" factor.[1] The external correlates of the two factors are often distinct, especially when controlling for their shared variance. The interpersonal factor often correlates with positive adjustment (e.g., extraversion and stress immunity), whereas the second factor is typically associated with maladaptive traits such as negative emotionality and poor self-control (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003).

Given that the two factors tend to have distinct correlates with criterion measures, use of the global (full-scale) psychopathy score may obscure the underlying personality processes (Blonigen et al., 2010). In particular, the considerable covariance between facets of the Psychopathy Checklist-Revised (PCL-R; Hare, 1991) often leads to suppressor effects; it is not unusual for the two factors to exhibit opposing relations with an external criterion when entered simultaneously in a prediction model (Hicks & Patrick, 2006). This phenomenon suggests that prevailing conceptualizations of the psychopathy construct, which is typically modeled as a single higher-order dimension responsible for two or more lower-order domains, could profitably be reconsidered.

Alternative ways of modeling the structure of psychopathy in adult offenders have been investigated by Patrick, Hicks, Nichol, and Krueger (2007). They used a hierarchical approach to account for the general variance permeating all of the PCL-R items, and then modeled specific factors (interpersonal, affective, and impulsivity) to account for the unique variance shared by certain subsets of items. By adopting this approach, it became much easier to isolate the specific aspects of psychopathy that were related to external variables. The general psychopathy factor was found to be positively correlated with negative emotionality, whereas the specific interpersonal factor was inversely related to negative emotionality (Patrick et al., 2007). Moreover, they showed that the common variance

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[1]According to empirical work with the dominant psychopathy instrument (i.e., Psychopathy Checklist-Revised), the first factor can be subdivided into interpersonal and affective facets, and the second factor can be subdivided into lifestyle and overtly antisocial components (Hare, 2003). Nevertheless, this four-factor model easily reverts to the original two-factor framework (Hare & Neumann, 2008).

underlying all items of the PCL-R was essentially redundant (i.e., correlation approached unity) with symptoms of antisocial personality disorder and child conduct disorder.

Although a full-blown manifestation of psychopathy is not applicable to children, psychopathic-like dimensions can be measured at an early age (Farrington, 2005; Lynam, 1997). Psychopathy demonstrates validity not only among incarcerated males, but also in mixed-gender community samples, where psychopathic characteristics are more benign (Bare, Hopko, & Armento, 2004; Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005). Few studies, however, have examined the relationship between psychopathic-like traits and measures of positive adjustment in nonclinically ascertained children.

1.2. Psychopathy and Negative Emotionality

Abnormally low anxiety/nervousness is considered a core feature of psychopathy (Lykken, 1995). Cleckley (1988) describes the prototypical psychopath as "embodying the concept of a well-adjusted, happy person" and showing "relative immunity from such anxiety and worry as might be judged normal or appropriate" (pp. 339-340). This leads to an apparent contradiction. Contrary to theory, individuals who chronically engage in antisocial behavior tend to be *more* anxious and depressed than typical individuals (Sareen, Stein, Cox, & Hassard, 2004). Conduct-disordered children are at elevated risk for anxiety/depression, and there is high comorbidity between antisocial personality disorder and anxiety disorders (Russo & Beidel, 1994; Widiger, 2006). How can this be reconciled with the hypothetically low anxiety of psychopaths?

This paradox may stem from the fact that the two psychopathy factors exhibit divergent associations with anxiety and depression (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). For example, emotional distress is strongly and positively related to the impulsive/ antisocial factor of the PCL-R, but is negatively related to the interpersonal factor (Hicks & Patrick, 2006; Vaugh, Edens, Howard, & Smith, 2009; Pennington, Cramer, Miller, & Anastasi, 2015). As a result, higher levels of anxiety/distress and depression are observed in the bulk of antisocial individuals, who happen to lack the compensatory interpersonal features of psychopathy.

1.3. Psychopathy and Intelligence

It is well established that an inverse association between externalizing problems and intelligence prevails. The overlap between low IQ and antisocial behavior is particularly strong in boys, and appears to be genetically mediated (Koenen, Caspi, Moffitt, Rijsdijk, & Taylor, 2006). Antisocial outcomes in adolescents are generally associated with lower IQ, especially the verbal component. As a result, one might assume that psychopathy is inversely related to verbal intellectual functioning, as appears to be the case in community samples of adults (Neumann & Hare, 2008).

However, the various psychopathy facets often show divergent associations with IQ. When partialling out the variance shared between different facets, the interpersonal factor of the PCL-R is positively related to IQ, whereas the affective factor is negatively related to IQ (Vitacco, Neumann, & Jackson, 2005; Vitacco, Neumann, & Wodushek, 2008; Neumann & Hare, 2008; De Tribolet-Hardy, Vohs, Mokros, & Habermeyer, 2014). A similar pattern is

obtained in community samples of children (Fontaine, Barker, Salekin, & Viding, 2008); interpersonal manipulation is positively related to IQ, whereas callous/unemotional traits and impulsivity are negatively related to IQ. It lends credence to Cleckley's assertion that the prototypical psychopath is not intellectually deficient, particularly if he is superficially charming.

2. Present Study

In summary, there is evidence that low IQ and high negative emotionality are ubiquitous in individuals with externalizing psychopathology. However, according to Cleckley's (1976) influential treatise, the classic psychopath is distinguished by his "good intelligence" and absence of nervousness. These contradictions can potentially be explained by invoking a hierarchical (i.e., bifactor) conceptualization of psychopathy, in which there is a general factor accounting for the covariance among the subscales alongside one (or more) specific factors. This would explain the overall coherence of the psychopathy construct while also accounting for the multi-factor structure. A general factor should permeate all of the psychopathy subscales, representing a broad liability for antisocial behavior (Patrick et al., 2007). This general factor should be associated with the typical correlates of externalizing problems in children (e.g., lower IQ and greater anxiety/depression). However, the specific interpersonal facet—independent of the general psychopathy factor—should be related to good cognitive and psychological functioning.

We applied a bifactor modeling approach to items from the Childhood Psychopathy Scale (CPS) in order to demonstrate its incremental validity over a broader antisocial orientation. Previously, using a second-order factor model in the present sample, Bezdjian, Raine, Baker, and Lynam (2011) showed that the covariance among CPS items is reducible to two moderately correlated factors: Manipulative/Deceitful and Callous/Disinhibited. However, these two factors are equivalently related to antisocial behavior (Bezdjian, Raine, Tuvblad, & Baker, 2011), suggesting that a general externalizing factor pervades the CPS domains. Examination of the two factors without considering their shared variance prohibits a clear interpretation of how each psychopathy facet is uniquely related to external criteria. We hypothesized that a bifactor approach would enable the emergence of a distinct interpersonal component which would demonstrate the hypothesized relationships with reduced negative emotionality and superior cognitive ability.

3. Method

3.1. Participants

The sample was drawn from participants in the USC Twin Study of Risk Factors for Antisocial Behavior, a longitudinal study of the interplay of genetic, environmental, social, and biological factors on the development of antisocial behavior (Baker, Barton, Lozano, Raine, & Fowler, 2006). The twins were recruited from Greater Los Angeles, and primarily contacted from enrollment records at local school districts. The sample is representative of the ethnic and socio-economic makeup of this region (Baker, Barton, & Raine, 2002). The ethnic distribution of the sample is as follows: 37.5% Hispanic, 26.6% Caucasian, 14.3% Black, 4.5% Asian, and the remaining 17.0% of mixed/other heritage. The present research

is based on data collected from the first wave of assessment in 2000-2004, when the children were 9-10 years old. The mean age at the time of assessment was 9.56 years ($SD = 0.58$). There were a total of 605 participating families ($N = 1210$ twins), including 591 boys and 619 girls.

Assessments of psychopathic personality and behavior problems were provided by caregivers, the majority of whom (91.4%) were biological mothers ($n = 553$). Caregivers were administered the questionnaires/interviews in either English ($n = 492$) or Spanish ($n = 113$), depending on their language proficiency and preference. The twins were required to be proficient in the English language.

3.2. Procedure

Families took part in 6-8 hours of assessment during a laboratory visit, entailing interview and neurocognitive measures for both the twins and their caretakers. Only the caregiver ratings of twins' psychopathic traits, rather than self-reports, were used for the present study, as the latter were not reliable. During the neurocognitive assessment, a 30-minute intelligence test was administered to the twins according to standard protocol.

3.3. Measures

3.3.1. Psychopathy—Psychopathic personality was measured using a modified version of the Childhood Psychopathy Scale (Lynam, 1997). The CPS was designed to operationalize in childhood the personality traits of psychopathy, as measured in adults via the PCL-R (Hare, 1991). Several domains from the adult instrument (e.g., promiscuous sexual behavior) were omitted in order to produce a developmentally appropriate measure of psychopathy (Lynam, 1997). Items reflecting blatant antisocial behavior (e.g., juvenile delinquency) were also excluded in order to produce a more personality-based conceptualization (Lynam et al., 2005). As a result, the CPS only assesses 14 of the 20 PCL-R criteria: Glibness, Grandiosity, Boredom Susceptibility, Untruthfulness, Manipulation, Lack of Guilt, Poverty of Affect, Callousness, Impulsiveness, Parasitic Lifestyle, Behavioral Dyscontrol, Lack of Planning, Unreliability, and Failure to Accept Responsibility.

The original 41-item CPS has undergone several revisions and expansions. The present version is a questionnaire of 58 yes-no items that shows good criterion-related validity among youth offenders (Falkenbach, Poythress & Heide, 2003). Internal consistencies of the various subscales are reported for this sample by Bezdjian et al. (2011). Furthermore, test-retest reliabilities were calculated for 60 individuals who were rated twice within a period of approximately six months. The test-retest correlations ranged from 0.48 (Lack of Guilt) to 0.81 (Boredom Susceptibility).

Previous investigators (e.g., Bijttebier & Decoene, 2009; Falkenbach et al., 2003; Lynam et al., 2005) typically organized the 14 subscales into two broad factors that reflect the traditional factor structure in adults (Hare, 1991). This was based on rational considerations, rather than arrived at empirically. However, upon submitting these subscales to a factor analysis with oblique rotation, Bezdjian et al. (2011) found that the two-factor solution was not structured according to Hare's original conceptualization. Two subscales – Grandiosity

and Lack of Guilt – failed to load on either factor. [Grandiosity was in fact negatively skewed, as the (reverse-scored) items appear to reflect a healthy self-concept rather than arrogance per se (e.g., "Does she have a low opinion or think badly of herself?")] Consequently, we omitted Grandiosity and Lack of Guilt from further analysis, and used the remaining 12 subscales.

3.3.2. Antisocial Behavior—Antisocial behavior in the present analyses was indexed by a latent factor based on three measures: reactive aggression, proactive aggression, and conduct problems. Reactive and proactive forms of aggression were operationalized using the Reactive-Proactive Aggression Questionnaire (RPQ; Raine et al., 2006). The RPQ consists of 23 items about various aggressive behaviors, which are subdivided into reactive aggression (11 items; e.g., hitting back when teased) and proactive aggression (12 items; e.g., threatening or bullying others). Caregivers responded to the items on a 3-point scale: 0 = *Never*, 1 = *Sometimes*, and 2 = *Often*. Items were averaged to compute an overall score for each scale.

The two-factor structure of the RPQ was validated in the present sample by Baker, Raine, Liu, and Jacobson (2008). Cronbach's α for reactive and proactive aggression were 0.83 and 0.77, respectively. Also, the test-retest reliabilities obtained for 60 participants were $r = 0.81$ and $r = 0.79$ for reactive and proactive aggression, respectively.

The third indicator of the antisocial behavior latent factor (conduct problems) was indexed by the lifetime number of conduct disorder symptoms as assessed using the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Caregivers reported on a wide range of delinquent behaviors, including stealing/shoplifting, lying to avoid obligations, skipping school, and bullying/fighting. These behaviors could occur at any point in the child's life. There are typically a total of 15 possible symptoms on the DISC-IV. However, an item regarding sexual activity was omitted due to its inappropriateness in preadolescents, thereby yielding an effective total of 14 symptoms.

3.3.3. Intelligence—Cognitive ability was assessed using the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999). The WASI consists of four subtests: Vocabulary, Similarities, Block Design, and Matrix Reasoning. Raw scores on each subtest were standardized with respect to the subjects' age, and ultimately converted into T scores (with a population mean of 50 and a standard deviation of 10). Although the four subtests can yield a summary (full-scale) IQ score, we instead decided to estimate latent general ability (*g*) using the four indicators in order to account for measurement error.

There were significant mean level differences in WASI performance among racial/ethnic groups. In order to reduce the possibility of spurious associations due to these mean group differences, we standardized participants' subtest scores within their respective racial/ethnic group. These adjusted scores were then used as indicators of *g*.

3.3.4. Anxiety/Depression—A latent internalizing factor was indexed using the Anxious/Depressed scale of the Child Behavior Checklist (CBCL; Achenbach, 1991) as well as

DISC-IV symptom counts of Generalized Anxiety Disorder (GAD) and Major Depression. The Anxious/Depressed scale of the CBCL contains 14 items that pertain to personal distress. Caregivers responded to each item on a three-point scale: 0 = *Not True*, 1 = *Somewhat or Sometimes True*, and 2 = *Very True or Often True*. Raw scores were obtained by summing the responses. Using the semi-structured interview format of the DISC-IV, caregivers also reported on various anxiety (GAD) symptoms in their children, including excessive worrying, irritability, and somatic complaints. Symptoms of Major Depression included excessive self-blame, diminished pleasure, feelings of worthlessness, fatigability, and depressed mood.

4. Statistical Analyses

Scores on each CPS subscale were positively skewed. Since most subscales were composed of three to five items, it was appropriate to treat scores as ordinal rather than continuous. All analyses were conducted in Mplus Version 6 (Muthen & Muthen, 2010) using techniques that account for the non-independence of observations (i.e., clustering of twins). Given that data were nonnormally distributed, we employed a robust weighted least squares estimator.

Our basic strategy in these analyses involved two steps: 1) constructing a bifactor model of psychopathy, and 2) examining its structural relations with adaptive functioning. We were motivated by the work of Patrick et al. (2007), who found that a bifactor model provided a better fit to the PCL-R facets than did a higher-order factor model. Bifactor models have several advantages over higher-order (correlated) factor models, especially when a given construct is composed of several highly related domains (see Chen, West, & Sousa, 2006). This approach is particularly suitable for the CPS facets, as the two psychopathy domains identified by Bezdjian et al. (2011) in the present sample are correlated $r = .71$ at the latent variable level. (The structure of these two correlated factors is depicted in Figure 1.) In the bifactor scheme, by contrast, the general factor accounts for the considerable overlap among the domains, while the specific factor(s) account for the unique influence of each domain independently of the general factor. In Figure 2, we illustrate a simplified bifactor model with one specific (interpersonal) factor. (The callous/disinhibited cluster is not represented as a specific factor due to the fact that it encompasses traits that are theoretically far removed from one another; i.e., it lumps affective items with impulsivity items.)

The fit of various measurement models was assessed using the root mean square error of approximation (RMSEA) and comparative fit index (CFI). The RMSEA provides an index of absolute model fit, in which values less than .07 are considered acceptable (Hu & Bentler, 1999). The CFI should approach 1, with values greater than .94 indicating good fit (Hu & Bentler, 1999). We also compared the fit of the correlated-factors and bifactor models. Because the former is nested within the latter (i.e., the correlated-factors model is more parsimonious), a chi-square difference test can determine whether the constraints of the former are justifiable. Since the difference in chi-square values of the two models is not distributed as chi-square (given that variables are non-normal), a robust chi-square difference test was performed using a mean and variance adjustment (DIFFTEST).

Prior to examining structural associations between psychopathy and external criteria, it was necessary to determine whether the bifactor model is measurement invariant with respect to sex. At the very minimum, a similar pattern of factor loadings should manifest in males and females if one is to gain assurance that the construct of psychopathy is comparable. Measurement invariance was tested by comparing a nested model (in which factor loadings were constrained to equality across sex) to a less restrictive model where loadings were free across sex. We allowed the item thresholds to differ across sex.

5. Results

Descriptive statistics and factor loadings for all external criteria are listed in Table 1. For each measure, information was available on at least 99.2% of boys ($n = 586$) and 98.1% of girls ($n = 607$). Data on the CPS were available for the entire sample of participants. Mean differences between boys and girls were tested by regressing each criterion on sex (males = 0, females = 1).

Participants scored near the population mean for all WASI subtests. Males scored higher than females on Block Design, while the reverse was true for Similarities. Not surprisingly, males received significantly higher ratings of aggression and conduct disorder. Proactive aggression garnered low rates of endorsement, and was consequently recoded into ten ordinal categories. For conduct disorder, very few participants possessed more than nine symptoms (and most girls had no symptoms), so we also treated this measure as ordinal. Levels of anxiety/depression were similar between the sexes, which is a typical observation in preadolescent children. Mean sex differences in psychopathy are not detailed here, as they have been reported elsewhere (Bezdjian, 2008); briefly summarized, males received significantly higher scores than females on all subscales except Manipulation and Poverty of Affect.

5.1. Measurement Model of Psychopathy

In an exploratory factor analysis, we found that a single factor solution was untenable. For males and females individually as well as the combined sample, two factors emerged with eigenvalues greater than one. As expected, a primary factor explained much of the variance (eigenvalue = 4.6), dwarfing the second factor (eigenvalue = 1.6). This finding mirrors the work of Bezdjian et al. (2011), who established a two-factor solution for the CPS subscales using oblique rotation. Three subscales unequivocally loaded more highly on the secondary factor than on the primary factor: Glibness, Manipulation, and Failure to Accept Responsibility. Untruthfulness and Parasitic Lifestyle showed substantial loadings on both factors. We modeled this correlated two-factor structure (as represented by Figure 1) in a confirmatory factor analysis, and observed a mediocre fit (RMSEA = .078, CFI = .91).[2]

Next, we proceeded to test the fit of our theoretically-driven bifactor model (see Figure 2). The fit of this model (RMSEA = .065, CFI = .95) was noticeably improved relative to the correlated-factors model. A chi-square difference test supported this conclusion, $\chi^2 =$

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[2]We also fit a model in which we permitted Untruthfulness and Parasitic Lifestyle to load on both factors. This was somewhat better-fitting (RMSEA = .074, CFI = .92), although still not reaching conventional criteria of good fit (Hu & Bentler, 1999).

75.64, $df = 4$, $p < 0.01$. Thus, the constraints of the correlated-factors model are too strict; the pervasive general factor cannot be disregarded. We also evaluated the fit of a bifactor model expanded to include a "callous/disinhibited" factor in addition to the interpersonal factor. Fit properties of this model (RMSEA = .067, CFI = .95) were not superior to those of the bifactor model depicted in Figure 2.[3]

We examined whether metric invariance across sex was viable using a chi-square different test. In a multigroup confirmatory factor analysis, we noticed that females had substantially lower mean levels than males in the general psychopathy domain, $p < .01$. There was no mean sex difference in the interpersonal domain, $p = 0.48$. However, the psychopathy construct might not be identical, as loadings could not be equated between males and females without significant loss of fit; $\chi^2 = 33.34$, $df = 17$, $p = 0.01$. (This finding is probably due to the high statistical power afforded by our large sample size.) As a result, we conducted subsequent analyses in each sex separately. According to conventional fit statistics, the bifactor model was adequate for both males (RMSEA = .073, CFI = .94) and females (RMSEA = .059, CFI = 95).

The factor loadings of the bifactor model are presented in Table 2. Most subscales had substantial loadings on the general factor. Notable exceptions include Glibness and Manipulation, which loaded more strongly on "Interpersonal Manipulation".

5.2. Construct Validity

Associations between psychopathy and each criterion dimension – antisocial behavior, anxiety/depression, and intelligence - are summarized in Table 3. Estimates are derived from the structural model shown in Figure 3. As expected, the association between general psychopathy and antisocial behavior (ASB) was high in both sexes, $r = .76$. Interpersonal Manipulation was also positively correlated with ASB, albeit to a lesser extent. Next, we incorporated our latent internalizing (INT) construct into the structural model. General psychopathy showed moderate to high correlations with INT in both sexes. By contrast, there was no association between Interpersonal Manipulation and INT.

Finally, we examined the associations between psychopathy and intelligence, in which the latter was conceived as a g factor. The overall pattern, if not magnitude, of effects was similar between the sexes (refer to Table 3). As expected, general psychopathy was inversely related to g. The correlation between general psychopathy and g was particularly strong in males, $r = -.35$. Interpersonal Manipulation was weakly and non-significantly related to g in both sexes.

5.3 Controlling for Antisocial Behavior

One impediment to our ability to detect associations between interpersonal manipulation and intelligence is the fact that the former is associated with ASB. That is, interpersonal features might positively relate to adaptive outcomes only among children that are similar in their level of antisocial behavior. As a result, we expanded our structural model to account for the

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[3]Besides empirical fit, there were conceptual grounds for rejecting the "callous/disinhibited" factor. Its observed associations with external criteria (e.g., negative association with antisocial behavior) rendered the construct uninterpretable.

covariation between interpersonal manipulation and ASB, simultaneously regressing *g* on these two measures (see Figure 4). Interpersonal manipulation was positively associated with cognitive ability in both males and females in this model. We repeated the same procedure using anxiety/depression as our external criterion. Interpersonal manipulation was inversely related to latent INT in both sexes, *p*s < .01. Results of these factor regression analyses are presented in Table 4.

6. Discussion

Psychopathy, as operationalized by the CPS, appears to reflect broad antisocial personality features. This is indexed by the fact that the common variance underlying various psychopathic features is nearly (but not completely) synonymous with antisocial behavior. As a result, individuals who are more psychopathic-like resemble individuals who have greater externalizing problems. This includes a heightened manifestation of internalizing psychopathology and intellectual disadvantage, which is contrary to the Cleckley prototype but consistent with the personality correlates of conduct-disordered youth. A subset of individuals, however, may manifest high interpersonal psychopathic traits without also exhibiting elevated impulsivity. It is this latter group that should coincide with conceptualizations of psychopaths as showing good adaptive functioning (Fontaine et al., 2008; Patrick et al., 2007).

We detected an interpersonal manipulation domain in the present sample of preadolescent children. The construct validity of this specific factor was examined within the framework of a bifactor model, which capitalizes on the residual covariance among facets. This permitted us to directly tap into the unique qualities of interpersonal manipulation, as separate from other psychopathic-like traits. We hypothesized that the general psychopathy dimension would index externalizing psychopathology and other maladaptive outcomes, whereas the specific interpersonal factor would be associated with positive adjustment. Results were consistent with a "weak" version of this hypothesis, in that interpersonal manipulation and general psychopathy were differentially (but not divergently) related to adaptive functioning. The premise that interpersonal features are indicative of superior intelligence and immunity to anxiety/depression lacked clear support. Links between interpersonal manipulation and adaptive functioning only emerged after controlling for ASB.

It is interesting that interpersonal manipulation was associated with good (i.e., normal) psychological functioning despite its overlap with ASB. This indicates that it represents a particular antisocial process that cannot be characterized by internal distress and inferior cognitive ability. This leads to the possibility that a subset of glib/manipulative children may engage in antisocial behavior for adaptive or instrumental reasons. From the perspective of delinquency prevention efforts, these children may be difficult to identify because they appear to be coping well and are free of intellectual deficits.

Previous studies using other instruments have revealed that interpersonal features are uniquely and positively correlated with IQ (Fontaine et al., 2008; Salekin et al., 2004; Vitacco et al., 2008; but see Heinzen, Kohler, Godt, Geiger, & Huchzermeier, 2011). The investigation by Fontaine et al (2008) is particularly relevant to the present study as the

sample consisted of a population-based sample of preadolescent twins. Nonetheless, there are some important differences across studies. Our interpersonal domain does not capture elements of grandiosity, whereas Fontaine et al. (2008) used an instrument that better operationalizes narcissistic traits. Moreover, they used teacher reports of psychopathy rather than caregiver reports. Finally, we used factor regression weights to measure the interpersonal domain rather than forming a simple composite score.

Latent anxiety/depression was not associated with interpersonal manipulation in the present study. In general, associations between psychopathy and anxiety are equivocal in the childhood literature. Some studies indicate that affective features of psychopathy are inversely related to trait anxiety in juvenile male offenders (Dolan & Rennie, 2007; Seveck, Lehmkuhl, & Krischer, 2009), whereas others have reported a positive relationship (e.g., Kubak & Salekin, 2009). Crucially, these studies are unanimous in their failure to demonstrate an inverse relationship between interpersonal psychopathic features and trait anxiety. This contrasts with observations in adult offender samples (Hall, Benning, & Patrick, 2004; Patrick et al., 2007), in which interpersonal rather than affective features are specifically related to low internal distress.

6.1 Limitations

There are several elements that may limit the generalizability of our findings. First, our sample consisted of community volunteers, where antisocial behavior was mostly benign; only 2.5% of participants ($n = 30$) were diagnosed with conduct disorder. Our results might not necessarily apply to clinical samples. Interpersonal features might show greater adaptive properties in antisocial populations. However, compared to normal (well-socialized) children, there is little rationale to assume that individuals who are high in interpersonal manipulation should demonstrate higher IQ. Indeed, Neumann and Hare (2008) found that the interpersonal domain actually predicted lower verbal aptitude in a sample of community-recruited adults.

The "good" intelligence described by Cleckley may be a characteristic of resilience when viewed within the context of an otherwise antisocial lifestyle. Several studies have found that psychopathic-like delinquents are more intelligent and less anxious relative to their non-psychopathic peers, but not when compared to non-delinquents. For example, Andershed, Gustafson, Kerr, and Stattin (2002) identified a group of undersocialized adolescents who demonstrated high narcissistic and psychopathic-like traits. These individuals showed less trait anxiety than their undersocialized non-psychopathic peers, but did not differ in this respect from normal controls in a large population-based sample. Additionally, Loney, Frick, Ellis, and McCoy (1998) reported that clinic-referred children with psychopathic tendencies had higher verbal intellectual abilities than non-psychopathic children with conduct problems, but did not differ from non-antisocial control patients. These studies indicate the contextual importance of antisocial behavior, and militate against the simple hypothesis that interpersonal psychopathic features are associated with higher intelligence and emotional stability.

Another limitation is our choice of a single instrument (and single rater) to measure psychopathy. Relative to other instruments, the CPS is poor at assessing guiltlessness and

grandiosity. Items from the Grandiosity subscale appear to reflect whether the child possesses normative self-esteem. This poor operationalization necessarily limited the inclusion of narcissistic features in our measurement model of psychopathy. (In exploratory analyses, Grandiosity revealed a substantial negative loading on the general psychopathy factor.) It is possible that an inverse association between interpersonal manipulation and anxiety/depression would have borne out if narcissistic features were adequately represented.

Finally, the high correlation between antisocial behavior and general psychopathy was likely inflated by item overlap between the CPS and the Reactive-Proactive Aggression Questionnaire. Although the CPS was purged of items involving overt misconduct (e.g., stealing, destroying property, or starting physical fights), one of the Callousness items ("Does he/she tease and pick on other people?") coincides with proactive aggression. Similarly, the Behavioral Dyscontrol subscale contains reactive aggression content (e.g., "Does he/she get irritated or mad over little things?")

6.2 Concluding Remarks

Positive adjustment is an important criterion with which to evaluate the construct validity of psychopathy. According to classic conceptualizations, absence of both internal distress and intellectual deficits supposedly characterizes psychopaths (Cleckley, 1976). These characteristics are very interesting, in our view, as they appear to contradict the typical attributes of individuals with externalizing disorders. Given that psychopathic-like individuals are inherently antisocial according to criteria contained in the PCL-R and related instruments, it is difficult to reconcile adaptive functioning with psychopathy. This is particularly the case in nonclinical samples of children, where psychopathic-like individuals are certainly more antisocial relative to their peers.

Individual differences in ASB largely masked evidence of adaptive functioning in the present study. Interpersonal psychopathic features were indicative of higher IQ and lower internalizing problems only after controlling for ASB. Thus, interpersonal manipulation may confer resilience in children who are otherwise on an antisocial trajectory. Perhaps this is what allows some psychopathic-like individuals to blend in, and assume the mask of normal adjustment.

Acknowledgments

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Highlights

- A bifactor model provided the best fit to facets from the Childhood Psychopathy Scale.

- An "interpersonal" factor was identified, encompassing superficial charm and deceitfulness.

- The general psychopathy factor was associated with low IQ and greater anxiety/depression.

- Contrary to expectation, the interpersonal factor was unrelated to measures of adaptive functioning.
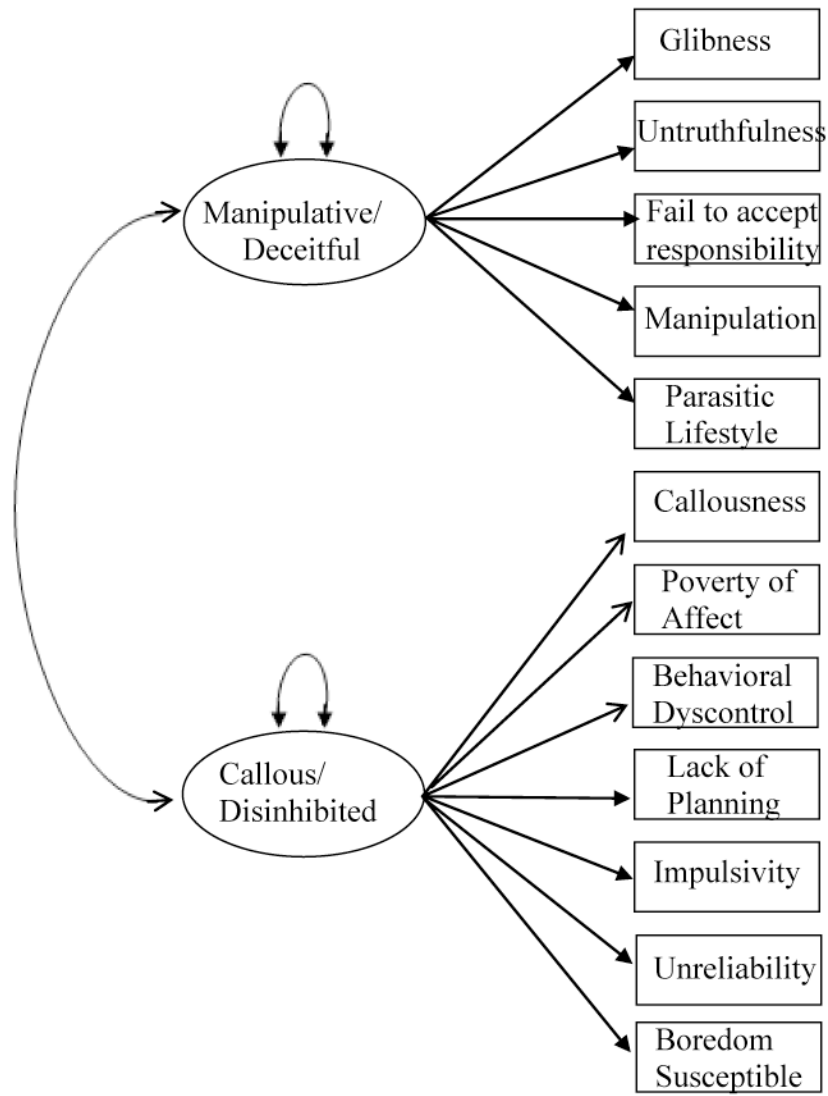
Figure 1.
Depiction of a correlated factors model for traits from the Childhood Psychopathy Scale (Bezdjian et al., 2011).
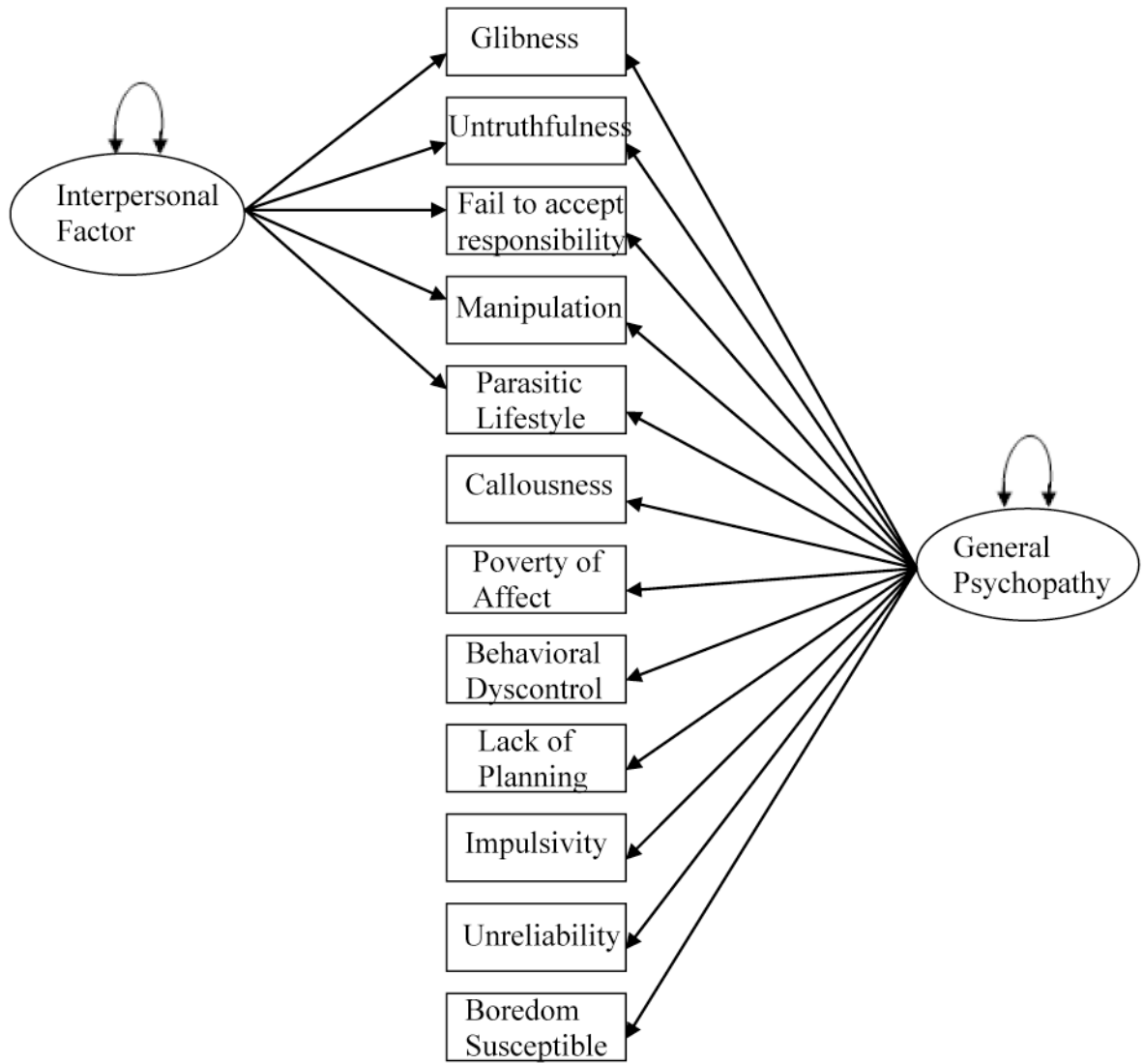
Figure 2.
Depiction of an alternative bifactor approach with one specific psychopathy factor and a general factor. Double-headed arrows represent factor variances that were fixed at one.
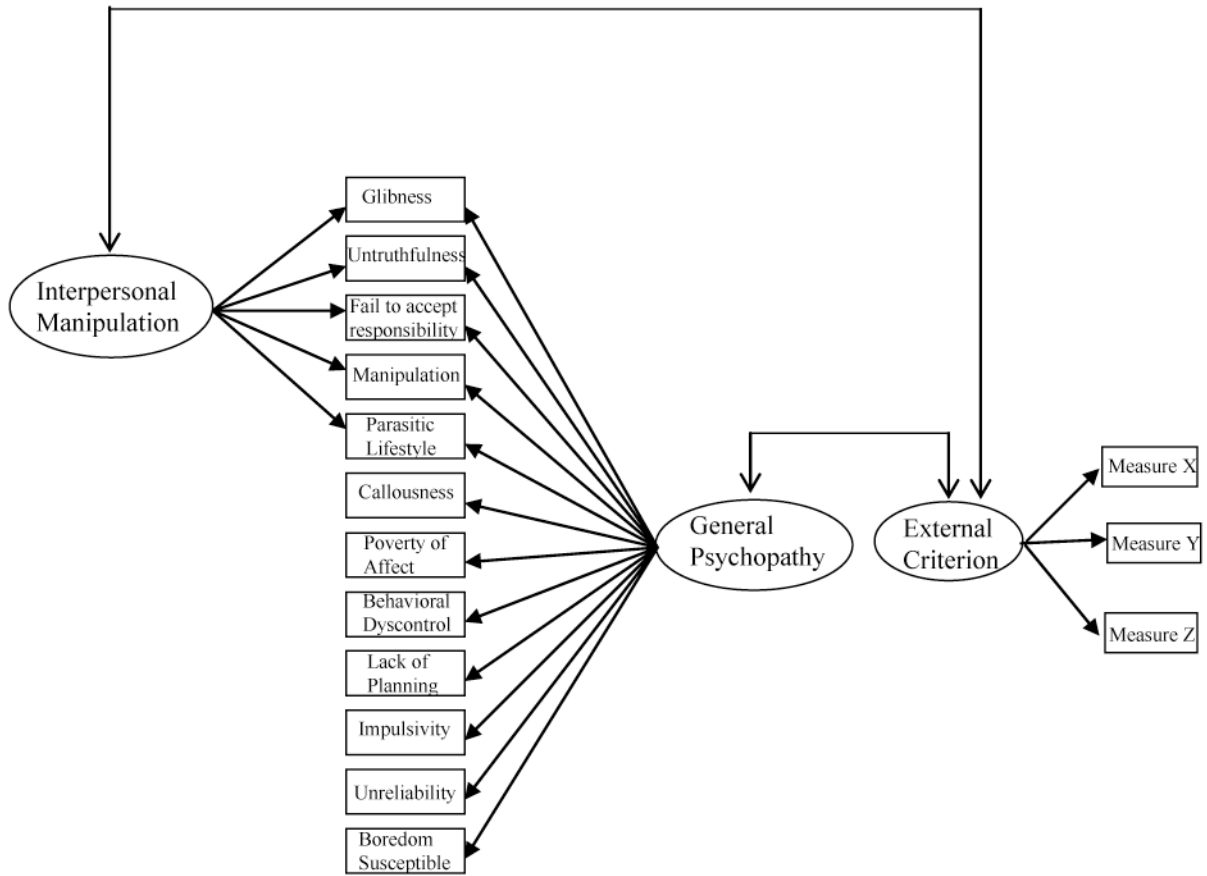
Figure 3.
Model depicting the structural associations between psychopathy and a latent criterion variable.
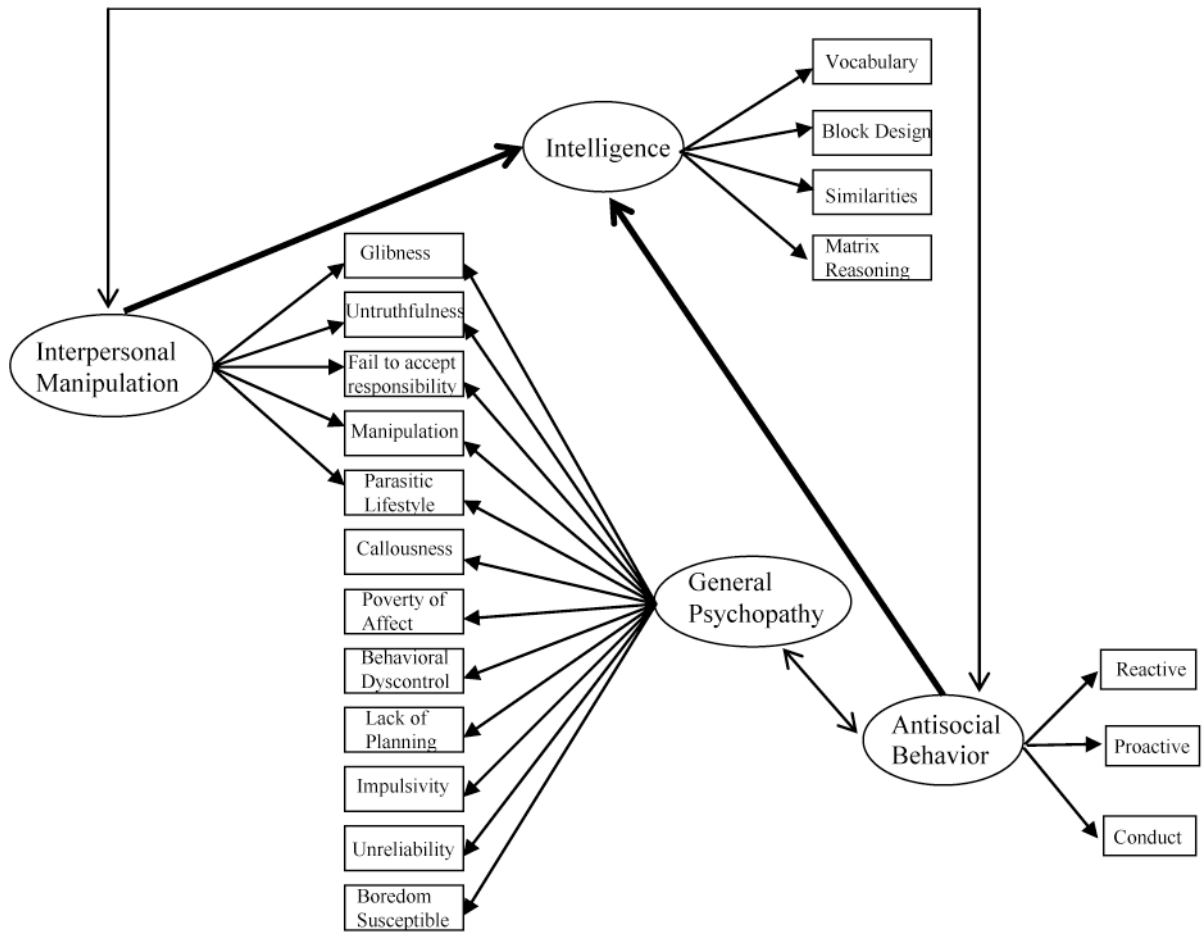
Figure 4.
Path diagram of a model in which interpersonal manipulation and antisocial behavior both influence a latent dependent variable (intelligence). Regression weights associated with the bolded paths are summarized in Table 4.

Table 1

Means, standard deviations, and factor loadings of criterion measures

Measure	Males			Females			
	M	SD	p	M	SD	p	z
WASI Performance							
Vocabulary T-score	49.6	9.5	.81	49.8	10.1	.75	0.35
Block Design T-score	48.9	9.8	.48	47.1	9.7	.57	-2.77**
Similarities T-score	51.1	10.0	.72	52.6	9.7	.75	2.53*
Matrix Reasoning T-score	52.3	10.1	.66	52.4	10.2	.60	0.17
Antisocial Behavior							
Reactive Aggression	0.71	0.33	.74	0.64	0.33	.79	-3.62**
Proactive Aggression	0.11	0.17	.76	0.08	0.14	.83	-2.26*
Conduct Disorder symptom count	1.45	2.02	.66	0.90	1.54	.68	-4.91**
Internalizing Problems							
Generalized Anxiety Disorder symptom count	2.81	2.49	.64	2.85	2.44	.72	0.38
Major Depression symptom count	3.27	3.07	.85	3.21	3.07	.78	-0.40
CBCL Anxious/Depressed	2.77	3.07	.71	3.04	3.25	.72	1.19

Notes. WASI = Wechsler Abbreviated Scale of Intelligence; CBCL = Child Behavior Checklist. β = standardized loading of each measure on its latent factor; *z*-test represents the linear or ordinal logistic regression of each criterion on sex (0 = males, 1 = females).

*
p < .05;

**
p < .01

Table 2

Factor loadings in males (and females) generated from a bifactor model of psychopathy

CPS Subscale	General Factor	Interpersonal Manipulation
Glibness	.19 (.24)	.50 (.42)
Untruthfulness	.57 (.47)	.38 (.43)
Failure to Accept Responsibility	.45 (.45)	.43 (.45)
Manipulation	.19 (.37)	.77 (.70)
Parasitic Lifestyle	.61 (.58)	.40 (.42)
Callousness	.65 (.59)	
Poverty of Affect	.55 (.57)	
Behavioral Dyscontrol	.60 (.68)	
Lack of Planning	.48 (.31)	
Impulsivity	.75 (.70)	
Unreliability	.76 (.70)	
Boredom Susceptibility	.65 (.60)	

Notes. Factor loadings in males are listed first; loadings in females are enclosed in parentheses. Subscale scores are treated as ordinal.

Table 3

Correlations between latent psychopathy factors and external criteria

Latent Criterion	Males		Females	
	General Factor	Interpersonal Manipulation	General Factor	Interpersonal Manipulation
Antisocial Behavior	.76**	.42**	.76**	.43**
Anxiety/Depression	.49**	.06	.58**	-.07
Intelligence (*g*)	-.35**	.03	-.18**	.08

**
p<.01

Table 4

Standardized partial regression coefficients in models predicting adaptive functioning

Predictor	Intelligence				Anxiety/Depression			
	Males		Females		Males		Females	
	b	SE	b	SE	b	SE	b	SE
Interpersonal Manipulation	0.26**	0.08	0.19*	0.08	-0.19*	0.07	-0.42**	0.08
Antisocial Behavior	-0.43**	0.06	-0.18*	0.07	0.60**	0.05	0.69**	0.05

*
$p < .05$;

**
$p < .01$