Associations Among Early Abuse, Dissociation, and Psychopathy in an Offender Sample

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Theorists have postulated that some variants of psychopathy result from childhood abuse and neglect. Dissociative symptoms are also thought to arise from abuse. To date, the conjoint associations among abuse, dissociation, and psychopathy have not been examined systematically. Some have hypothesized that abuse relates primarily to the affective symptoms of psychopathy, with dissociative experiences mediating this relationship. Others have suggested that abuse more directly affects the impulsive lifestyle features of psychopathy. The authors used structural equation modeling to examine these hypotheses in a sample of 615 male offenders who had completed a retrospective self-report measure of childhood abuse, the Dissociative Experiences Scale, and R. D. Hare's (2003) Psychopathy Checklist—Revised. Abuse exerted no direct or indirect effect on the core interpersonal and affective features of psychopathy but was directly related to the facet of psychopathy associated with an impulsive and irresponsible lifestyle. Implications for psychopathy subtypes are discussed.

Keywords: psychopathy, abuse, dissociation, primary, secondary

Contemporary conceptualizations of psychopathy date to the work of Cleckley (1941/1976), who operationalized the construct largely in terms of deficits in affective and interpersonal functioning. Psychopathic individuals are often superficially charming but are insincere and have difficulty developing or sustaining meaningful attachments to others. They lack a normal range and depth of emotions and tend to be narcissistic and manipulative, at times even predatory. They are callous toward others and substantially lacking in remorse or guilt for the harm that they cause.

Cleckley (1941/1976) posited a constitutional rather than sociocultural etiology for psychopathy, noting that "no type of parent or parental influence, overt or subtle, has been regularly demonstrable" (p. 412). Similarly, Hare (1993) indicated, "I can find no convincing evidence that psychopathy is the direct result of early social or environmental factors" (p. 170). Others view psychopathy as a heterogeneous construct and distinguish subtypes on the basis of etiology, with certain subtypes being largely sociocultural in origin.[1]

For example, Karpman (1941, 1955) contrasted Cleckley's constitutionally based idiopathic, or primary, psychopath with a symptomatic, or secondary, psychopath. The secondary psychopath's features were attributed to unresolved conflicts (e.g., neuroses) arising from environmental factors, including parental rejection or harsh punishment. In addition to their etiological differences, Karpman (1948) also indicated that impulsivity distinguished primary (low) and secondary (high) psychopaths. Lykken (1995) also noted the potential for environmental factors, including poor or ineffective parenting, to produce an individual who appears phenotypically psychopathic (although he preferred the label *sociopath* for such cases). Porter (1996) similarly postulated a specific subtype of secondary psychopath whose symptoms result from early abuse or abandonment. Thus, from Karpman's day to the present, there is clinical and theoretical interest in the potential

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[1] In this article we take no stance regarding the taxonicity of psychopathy or any of its putative subtypes. Subtypes, if they exist, may represent taxa or merely high-density concentrations of individuals in multivariate space.

contribution of abuse, neglect, and other adverse experiences to the development of psychopathic features.

The present article reports findings regarding two aspects of the association between abuse history and psychopathy. First, given that psychopathy is a multifaceted construct, we examined whether abuse history is preferentially associated with certain facets of psychopathy. Second, given that a history of abuse or neglect experiences has been associated with dissociative symptomatology, we examined the possible mediating role of dissociative symptoms in the association between abuse history and psychopathy.

Early Abuse, Psychopathy, and Dissociation

There are several empirical and theoretical links among abuse history, psychopathy, and dissociation. First, several studies have indicated that parental rejection, neglect, and abuse are associated with later antisocial behavior (American Psychological Association, 1996; Jaffee, Caspi, Moffitt, & Taylor, 2004; Lahey, Moffitt, & Caspi, 2003; Lang, af Klinteberg, & Alm, 2002; Margolin & Gordis, 2000) and psychopathy (Lang et al., 2002; Marshall & Cooke, 1999; McCord & McCord, 1964). For example, in a sample of over 1,000 individuals, Weiler and Widom (1996) found that participants who had been abused, neglected, or both had significantly higher Psychopathy Checklist—Revised (PCL–R; Hare, 2003) scores than participants who had not, even after controlling for differences in demographic characteristics and criminal history. This finding is relevant to Karpman (1941), Lykken (1995), and Porter's (1996) hypothesis that one variant of psychopathy may be related to adverse environmental factors. Nevertheless, the causal role of early environmental factors in predisposing an individual to psychopathy and antisocial behavior remains controversial (DiLalla & Gottesman, 1991).

Second, dissociative symptoms are relatively frequently reported by people who have experienced abuse or trauma (Chu & Dill, 1990; Kirby, Chu, & Dill, 1993). Spiegel and Cardena (1991) concluded that "the literature on early sexual or physical abuse suggests a reliable connection between abuse and dissociative phenomenology" (p. 368). Abuse-related trauma is also mentioned in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*; American Psychiatric Association, 1994) as a possible etiological factor for several dissociative disorders, including dissociative amnesia (p. 478), dissociative fugue (p. 482), and dissociative identity disorder (p. 485). Again, however, the etiological significance of abuse-related trauma for individuals with dissociative symptoms and disorders remains controversial (see Lilienfeld & Lynn, 2003).

Given that abuse history may predispose an individual to both dissociative symptoms and psychopathic features, an interesting and potentially important question concerns the relationships among abuse history, dissociation, and psychopathy. To date, however, the relationship between dissociation and psychopathy has not been examined systematically.

The best validated measure of psychopathy is Hare's (2003) PCL–R, which involves a clinical interview and review of file information. The PCL–R's traditional two-factor model provides a useful framework for examining potential subtypes of psychopathy and their possible associations with dissociative experiences.

PCL–R Factor 1 assesses core affective (e.g., shallow affect, lack of remorse or guilt) and interpersonal (e.g., glib, superficial charm; conning/manipulative) features, whereas Factor 2 assesses features associated with a longstanding socially deviant lifestyle (e.g., impulsivity, poor behavior controls). After their shared variance is controlled, these factors exhibit selective associations with an array of external criterion measures that mirror, in important ways, the clinical and theoretical attributes of primary and secondary psychopathy. As summarized by Hicks, Markon, Patrick, Krueger, and Newman (2004), the pattern of associations with Factor 1 (e.g., negative correlations with anxiety, neuroticism, negative emotionality; little or no association with anger, impulsivity, conscientiousness, and constraint) reflects features ascribed to primary psychopathy, whereas those associated with Factor 2 (e.g., positive correlations with anxiety, neuroticism, negative emotionality, anger, and substance abuse; negative associations with conscientiousness and constraint, encompassing impulse control and fearfulness) reflect features ascribed to secondary psychopathy.[2]

Some literature suggests a specific link from abuse to the psychopathic features indexed by Factor 1. More specifically, some authors have hypothesized that abuse results in a diminished capacity for affective responding and that this relationship may be mediated by dissociative experiences. For example, in discussing the possible mechanisms by which psychopathy mediated the abuse–violence association in their sample, Weiler and Widom (1996) suggested that as a result of early abuse, "a child might become 'desensitized' to future painful or anxiety provoking experiences" and that this desensitization might make "him or her less emotionally and physiologically responsive to the needs of others, to be callous and lack empathy, and to lack remorse or guilt" (p. 264)—all features tapped by Factor 1. Similarly, Porter (1996) indicated that the "capacity for empathetic responding . . . is 'turned off' with repeated disillusionment of the child through physical or sexual abuse or other mistreatment . . . . This should be considered a dissociative disorder with the child's emotion being dissociated from or unconnected with cognition and behavior over time" (p. 183). Porter's theorizing implies that traumatic events can trigger a dissociation of affective capacities, as assessed by Factor 1.

In contrast, other findings suggest that dissociative symptoms relate positively to the impulsive and socially deviant psychopathic features indexed by Factor 2. Groth-Marnat and Jeffs (2002) reported that dissociation correlated positively with a measure of neuroticism ($r = .58$) and negatively with conscientiousness ($r = -.46$), a pattern described earlier by Hicks et al. (2004) as characteristic of Factor 2 (but see Skeem, Miller, Mulvey, Tiemann, & Monahan, 2005, for alternative correlates, including low agreeableness). Moreover, dissociative symptoms are associated posi-

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[2] It is important to keep in mind that despite the different patterns of correlates with external variables, the putative etiologic differences (i.e., constitutional deficit vs. environmental insult) distinguish primary from secondary psychopathy. At least in cross-section, the two types of individuals may appear "phenotypically (and diagnostically) indistinguishable in most respects" (Porter, 1996, p. 183). As noted in the text, Karpman (1948) argued that primary and secondary psychopaths are distinguished in terms of low (primary) versus high (secondary) impulsivity.

tively with several *DSM–IV* Cluster B personality disorder diagnoses (e.g., antisocial personality disorder, borderline personality disorder; Lauer, Black, & Keen, 1993; Waldo & Merritt, 2000), which generally display stronger associations with PCL–R Factor 2 than with Factor 1 (Hare, 2003, pp. 96–97). Although indirect, these data are consistent with an emotional instability model in which abuse increases one's vulnerability to a range of maladaptive strategies for coping with negative emotions (e.g., anxiety, depression), including impulsive, aggressive, and antisocial behavior. In this model, dissociative symptoms would merely be an index of (generally) maladaptive coping mechanisms. These findings would also be compatible with several social psychological models, particularly a vicarious conditioning model in which children acquire impulsive, irresponsible, aggressive behaviors by observing aggressive role models, including parents (Bandura, Ross, & Ross, 1963; Berkowitz, 1993; Parker & Rogers, 1981; but see Wilson & Herrnstein, 1985, for alternative explanations of observational learning findings). In this model, dissociative symptoms are extraneous.

The Present Study

The present study provides a direct examination of the associations among abuse history, dissociation, and psychopathy, as well as a test of competing models of the relation between abuse and both psychopathy and antisocial behavior. We obtained retrospective self-report measures of early abuse from a large sample of offenders, and we applied structural equation modeling (SEM) to test causal paths among abuse history, dissociative experiences, and psychopathy. Of particular interest was the comparison of two sets of models described above: (a) a diminished affective responding model that posits a positive association between abuse and the affective features of psychopathy that is mediated by dissociative experiences and (b) an emotional instability or vicarious conditioning model that posits a positive association between abuse and the impulsive lifestyle features of psychopathy that is not mediated by dissociative experiences.

Method

Participants

Participants in this study were Euro American and African American men serving sentences in state prisons in Florida, Nevada, Utah, or Oregon or court ordered to residential drug treatment at sites in the same four states or in Texas. Participation was limited to English-speaking individuals between the ages of 21 and 40 (inclusive) and to Euro American or African American racial groups. Participants also had to obtain an estimated IQ ≥ 70 (see below). At all sites, individuals receiving psychotropic medication for active symptoms of psychosis were excluded from the study.

From the 702 men enrolled in this ongoing study through April of 2004, data were analyzed from 615 cases (88%). Of the excluded cases, 59 had missing data on one or more of the measures required for analyses[3] and 28 had invalid profiles (see *Profile Validity* below).[4] Of participants included in analyses, 71% were of Euro American descent, and 29% were African American. Their average age was 30.5 years ($SD = 6.2$, $n = 578$), and they had attained an average educational level of 10th grade ($SD = 1$, $n = 467$). Approximately half (53%) of participants were drawn from residential drug treatment sites.

Measures

The research reported here is based on a substudy involving selected instruments from a larger research protocol used to investigate antisocial personality disorder and psychopathy. Here, we describe only the measures used in this substudy and group them into two domains. The first domain measures basic information that characterizes the participants and their eligibility for the study. The second domain measures the constructs of interest in the study—early abuse, dissociative experiences, and psychopathy.

As discussed below, the original scales for these constructs often fit the data poorly. Given our use of SEM to test hypothesized relations among abuse, dissociation, and psychopathy, it was important to identify reliable indicators of each of these constructs. Adequate measurement models must be used in SEM to permit valid tests of the model's structural elements. Otherwise, poor model fit may reflect the measurement model rather than the hypothesized pattern of relations among the latent variables of interest. Thus, in this section, we describe the development of adequate measurement models that were applied in later analyses.

Demographics. Basic demographic information (e.g., age, gender, race) was obtained from each participant by self-report and validated through official records in agencies in which the participants resided.

Intelligence screen: Quick Test (QT; Ammons & Ammons, 1962). The QT is a brief screening measure of intellectual functioning. While showing the participant a card displaying four pictures, the examiner reads aloud a word that represents an item or concept that is present in only one of the four pictures. The participant indicates the picture in which he or she believes the item or concept is portrayed. This process continues through a list of 50 words, or until 6 consecutive words are missed. Participants ($n = 3$) who obtained an estimated IQ <70 were excused from the study.

The QT is an excellent predictor of IQ scores in the normal range (Traub & Spruill, 1982) and provides a good estimate of Wechsler Adult Intelligence Scale—Revised (Wechsler, 1981) IQ scores in both genders, for both Euro and African American respondents (Craig & Olson, 1988) and in offender populations (DeCato & Husband, 1984; Simon, 1995).

Reading Screen: Basic Reading Inventory (BRI; Johns, 1997). The BRI was used to assess the reading ability of some participants. Participants were allowed to complete the self-report questionnaires if they (a) either had a GED or had completed the 10th grade in regular curriculum classes (i.e., not in special education classes) and (b) demonstrated that they could easily read the first few items of the Personality Assessment Inventory (PAI; Morey, 1991; see below). Participants not meeting these criteria were required to read silently a 9th-grade-level passage from the BRI and then complete an oral test of comprehension. The research assistant read aloud items from self-report measures to participants who did not demonstrate a 9th-grade reading level.

Profile Validity: Personality Assessment Inventory (PAI) and Psychopathic Personality Inventory (PPI). We wished to exclude cases with questionable protocol validity given the self-report format of the measures of child abuse and dissociation. The PAI (Morey, 1991) is a 344-item self-report measure designed to assess symptoms of psychopathology and personality traits. The PAI includes four validity scales. Inconsistency and Infrequency assess departures from conscientious responding, and Negative and Positive Impression management scales assess the tendency to

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[3] Missing data occurred for a variety of reasons; for example, prior to completing the protocol, some participants withdrew voluntarily, were placed in segregation for disciplinary reasons, were transferred to another facility, or were rearrested or absconded from residential drug treatment programs. In other cases, there were errors in the electronic transfer of completed protocols from research assistants to the database assembly site.

[4] To explore the impact of these invalid cases, we repeated the primary analysis (depicted in Figure 1) with these 28 cases included. The results were highly similar.

present oneself in a negative or positive light. These scales have been shown to identify random and "fake good/fake bad" response patterns (Morey, 1991). In the present study, 25 cases were excluded from analyses because the respondent's (a) Inconsistency, Infrequency, or Negative score exceeded two standard deviations of the sample's mean or (b) Positive score exceeded the traditional normative cut score of 70.

For 65 participants who had incomplete PAI data, we used the Variable Response Inconsistency (VRIN) subscale of the PPI to exclude invalid profiles. The PPI (Lilienfeld & Andrews, 1996) is a 187-item self-report measure of psychopathy. Its VRIN subscale examines the consistency of responses to item pairs for which responses are moderately to highly ($r = $ .30) correlated. High scores on the VRIN are indicative of inconsistent, careless, or random responding. In the present study, 3 participants were excluded because the respondent's VRIN score exceeded two standard deviations of the sample's mean.

Abuse: Child Abuse and Trauma Scale (CATS, Sanders & Giolas, 1991). The CATS is a self-report measure containing 38 items that address physical abuse or punishment, verbal or psychological abuse, sexual abuse, neglect, and a negative home environment. A 5-point scale is used to rate from *never* to *always* the frequency with which particular types of events occurred during the respondent's youth. The CATS has been used widely in studies of relationships among childhood abusive experiences, personality features, dissociative symptoms, and victimization (e.g., Becker-Lausen, Sanders, & Chinsky, 1995; Ruiz, Pincus, & Ray, 1999).

The CATS includes three original subscales (6 items on sexual abuse, 6 items on punishment, and 14 items on neglect) and 12 additional items that contribute to a total abuse score. This original hierarchical structure inadequately fit our sample's data, $\chi^2(662, N = 615) = 3,196.85, p < .001$, root-mean-square error of approximation (RMSEA) = .08, comparative fit index (CFI) = .82. (Note that chi-square tests are almost always statistically significant in large samples and are accorded less weight than other fit indices here.) Thus, we conducted exploratory (EFA) and confirmatory (CFA) factor analyses to develop a suitable measurement model of abuse, as recommended by Byrne (1994).

Specifically, we conducted EFA to summarize the pattern of relationships among items and to suggest valid indicators for potential factors. Then, we reviewed the literature on the CATS and the multifaceted nature of abuse (Commission on Behavioral and Social Sciences & Education, 1993; National Clearinghouse on Child Abuse & Neglect Information, 2003) to inform CFA, which was used to develop and refine a hypothesized model of abuse that included four factors: physical, verbal, sexual, and emotional impact.

The final model was selected on the basis of an integration of empirical (e.g., fit; representation of factors with four or more items) and theoretical (e.g., relation to models of abuse) criteria. This four-factor, hierarchical model provided an adequate fit to the data, $\chi^2(73, N = 615) = 244.96, p < .001$, RMSEA = .05, CFI = .97. In this model, abuse is defined by physical, verbal, sexual, and emotional effect components.[5] The model's factor loadings and items are described in Table 1. We formed four new composite variables by summing the items associated with each of these first-order factors. In analyses presented below, these four variables (and the 14 items used to create them) indicate the latent construct of abuse.

Dissociation: Dissociative Experiences Scale (DES; E. M. Bernstein & Putnam, 1986). The DES is a 28-item self-report measure that describes "disturbances in identity, memory, awareness, and cognition and feelings of derealization or depersonalization or associated phenomena such as déjà vu and absorption" (p. 729). Respondents are asked to indicate how frequently they have experienced each such disturbance. The original DES used visual analogue scoring; respondents made a mark on a 100-mm line (with endpoints anchored at 0% and 100%). In this study, we used the DES–II (Carlson & Putnam, 1993), an 11-point scale in 10% increments ranging from 0% (*never*) to 100% (*always*); respondents select the number that best describes their experience of the item. The mean score across all 28 items represents an individual's DES total score.

Table 1
Measurement Model of Abuse

Factor or item (indicated with CATS item number)	Factor loadings
Physical	
34. Parents hit or beat you	.89
37. Physically mistreated	.87
21. Home charged with possibility of violence	.85
23. Felt safe living at home	−.74
Verbal	
8. Parents insulted you or called you names	.84
25. Parents verbally lashed out	.82
28. Parents yelled at you	.78
Sexual	
13. Traumatic or upsetting sex	.91
26. Traumatic sexual experience	.83
35. Relationship with parents involved sex	.49
Emotional effect	
7. Felt unwanted or emotionally neglected	.82
19. Felt disliked by parents	.82
14. Wanted to leave family for another family	.77
38. Childhood was stressful	.76
Abuse (second-order factor)	
Physical	.94
Verbal	.96
Sexual	.45
Emotional effect	.96

Note. CATS = Child Abuse and Trauma Scale. All loadings significant at $p < .001$.

The DES possesses excellent internal consistency and test–retest reliability (Van Ijzendoorn & Schuengel, 1996), and mean total DES scores for various diagnostic groups tend to follow a predictable ordering: low in nonclinical samples; moderate for personality disorders, mood disorders, and schizophrenia; and highest in samples selected on the basis of abuse history or diagnoses related to trauma history (e.g., posttraumatic stress disorder) or dissociative disorders (Carlson & Putnam, 1993, Table 1; Van Ijzendoorn & Schuengel, 1996, Table 3).

The factor structure of the DES is unclear. Investigators have reported evidence for one-factor (I. H. Bernstein, Ellason, & Ross, 2001), three-factor (Stockdale, Gridley, Balogh, & Holtgraves, 2002), and even seven-factor models (Ray, June, Turaj, & Lundy, 1992). The DES–II has three designed subscales (eight items on amnesia, six items on depersonalization, and nine items on absorption) and five additional items that contribute to a total score. This a priori hierarchical structure inadequately fit our sample's data, $\chi^2(347, N = 615) = 1,656.53, p < .001$, RMSEA = .09, CFI = .82.

Using the process and selection criteria described earlier, we analyzed our data using EFA and CFA to develop a suitable measurement model for dissociative experiences. The final model for the DES adequately fit the data, $\chi^2(101, N = 615) = 407.03, p < .001$, RMSEA = .06, CFI = .92. The model includes the following three factors, which were named after their designated scales because they consisted of a reduced set of items from these scales: amnesia, depersonalization/derealization, and absorption/imagination. The model's factor correlations, factor loadings, and items are described in Table 2. We formed three new composite variables by summing the items associated with each of these factors. In analyses

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[5] Notably, a two-factor model that (a) combined verbal, physical, and emotional effects (which were highly correlated) into a single factor and (b) retained the sexual abuse factor fit the data more poorly, $\chi^2(76, N = 615) = 401.54, p < .001$, RMSEA = .08, CFI = .94, and is not in keeping with theoretical models of abuse.

Table 2
Measurement Model of Dissociation

Factor or item (indicated with DES item number)	Factor loadings
Amnesia	
3. No idea how you got to a place	.79
4. Don't remember dressing	.74
8. Told that you don't recognize friends, family	.62
5. Don't remember buying	.58
Depersonalization	
13. Feel that body doesn't belong to you	.76
12. Feeling that others, objects, etc. are not real	.74
11. Not recognizing yourself in the mirror	.67
7. Standing next to, or watching yourself	.56
Absorption	
15. Not sure whether something happened or you dreamed it	.75
16. In a familiar place, but find it unfamiliar	.74
18. Immersed in a daydream or fantasy	.71
14. Remember an event vividly, as if reliving it	.66
22. Act so different, you feel like two different people	.64
20. Stare into space, unaware of time passage	.64
17. Watching tv, totally absorbed	.62
23. Do unexpected things with ease (e.g., sports)	.47
Factor correlations	
Amnesia and Depersonalization	.67
Amnesia and Absorption	.53
Depersonalization and Absorption	.66

Note. DES = Dissociative Experiences Scale. All loadings significant at $p < .001$.

presented below, these three variables (and the 16 items used to create them) indicate the latent construct of dissociative experiences.

Psychopathy: Hare's PCL–R. The PCL–R consists of 20 items that assess features of psychopathic personality. Item ratings of 0 (*item does not apply*), 1 (*item applies somewhat*), or 2 (*item definitely applies*) are assigned by trained raters on the basis of information gathered during a lengthy (about 1.5 hr) semistructured interview and review of available file information. Participants' average PCL–R score was 22.8 (*SD* = 7.4).

An extensive literature has documented the reliability and validity of the PCL–R (Hare, 2003). In large sample studies with offender and forensic samples, two-factor (Harpur, Hare, & Hakstian, 1989), three-factor (Cooke & Michie, 2001), and four-facet (2-factor; Hare, 2003) structural models for the PCL–R have been proposed. Because the 13-item, three-factor model (Cooke & Michie, 2001) appears to provide the best fit to the present data (Skeem, Douglas, & Poythress, 2004), for our primary analyses we computed composite scores that represent affective (items 6, 7, 8, 16), interpersonal (items 1, 2, 4, 5), and (impulsive) lifestyle (items 3, 9, 13, 14, 15) domains. For some analyses, we used the items associated with each psychopathic domain as indicators of that latent construct. For supplemental analyses, we used the traditional PCL–R Factor 2 to explore the role of antisocial behavior and impulsivity in relation to abuse and dissociation.

Procedure

Research assistants received extensive training on the entire protocol, including 2.5 days of face-to-face didactic and clinical training from an expert on the PCL–R (Stephen Hart) and subsequent supervised scoring of practice tapes obtained from the author of the PCL–R (Robert Hare). To avoid rater drift during the course of the study, the project coordinator conducted regular site visits to observe interviews and independently score the PCL–R. On the basis of 51 cases, interrater reliability for PCL–R total scores was intraclass correlation coefficient = .88.

At each site, eligible participants were randomly recruited from lists of individuals who met basic inclusion criteria (i.e., age, race, English fluency). Enrollment interviews were conducted in a private room, and informed consent was obtained with procedures approved by a university institutional review board. After informed consent was obtained, the IQ screening and reading ability tests were administered. Upon determination of a participant's reading ability, the research protocol was administered. The PAI was administered as a paper-and-pencil measure; the PPI, DES, and CATS items were entered into a software program; and participants completed these items using a laptop computer. The larger protocol, which took on average 4.5 hr to complete, was typically administered in two sessions. Except at one agency that did not permit participant payments, participants were paid $20 for study participation.

Analyses

We used Pearson product–moment correlations in preliminary analyses to examine the pattern of relations among key aspects of the original scales and the new composite scales developed for use in the chief analyses. To investigate the relationship between early abuse and psychopathy (including relationships with domains of psychopathy separately) and the possible mediating role of dissociation, we applied SEM. The structural model involved one exogenous factor (abuse) and two endogenous factors (dissociation and psychopathy). In separate analyses, the total effect of abuse on psychopathy (and each of its domains) was partitioned into two sources: direct effects and indirect effects. Support for the diminished affective responding model would be evidenced by a large indirect effect of abuse on psychopathy (specifically, the affective domain) transmitted through the mediating role of dissociation. Support for the emotional instability or vicarious conditioning models would be evidenced by a large direct effect of abuse on psychopathy (specifically, the impulsive lifestyle domain) with little or no indirect effect through the mediating role of dissociation.

We fit all SEM models within Amos 5.01 (Arbuckle, 2003) using maximum-likelihood estimation techniques. The significance of the indirect effects was tested with Z scores (MacKinnon & Dwyer, 1993), which we developed by applying Sobel's (1982) formula for the standard error of the mediated effect (using the tool of Preacher & Leonardelli, 2001). Model fit was tested with chi-square, CFI, and RMSEA. Given the large sample size of this study, model fit was assessed less on the significance of the chi-square statistic than on the value of the CFI ($\geq$ .95, with good fit) and RMSEA ($\leq$ .05, with good fit) (Muthén & Muthén, 2001).

Results

Bivariate associations among key aspects of the original scales and the new composite scales developed for use in the chief analyses are shown in Tables 3 and 4, respectively. As shown in Table 3, the psychopathy, abuse, and dissociation scales were weakly but significantly associated with one another. Tests of the significance of the difference between dependent correlations (Cohen & Cohen, 1975) revealed that the lifestyle features of psychopathy were significantly more highly correlated with abuse (total CATS) scores than either the affective, $t(612) = 4.52$, $p < .001$, or interpersonal, $t(612) = 4.26$, $p < .001$, features of psychopathy. Parallel tests revealed that the lifestyle features of psychopathy were significantly more highly correlated with DES total scores than the interpersonal, $t(612) = 2.88$, $p < .01$, but not affective, $t(612) = 0.67$, *ns*, features of psychopathy.

Initially, we conducted a general test of associations among abuse, dissociation, and psychopathy using the full Cooke and Michie (2001) 13-item model of psychopathy, fitting the model portrayed in Figure 1 to the data. This model includes abuse (with four new composite indicators), dissociative experiences (with

Table 3
Zero-Order Correlations Among Key Measures

Measure	Abuse (CATS total)	Dissociation (DES total)
Dissociation (DES total)	.15**	
Psychopathy (PCL–R total, 13 items)	.15**	.11**
Affective	.02	.13**
Interpersonal	.03	.03
Lifestyle	.22**	.16**
Psychopathy and antisocial behavior (PCL–R total, 20 items)	.19**	.16**
Antisocial	.26**	.17**

Note. CATS = Child Abuse and Trauma Scale; DES = Dissociative Experiences Scale; PCL–R = Psychopathy Checklist—Revised.
** $p < .01$.

three new composite indicators), and psychopathy (with three composite indicators). Table 5 presents the fit of this model, along with the direct, indirect, and total effect of abuse on psychopathy. As shown in the first row of that table, this model provided an adequate fit to the data. Also shown in the table, abuse exerted no significant direct or indirect effect on psychopathy measured as a unitary construct.

Notably, highly similar results were obtained when new composite scores for the original subscales and "orphaned items" of the CATS and DES were substituted as indicators of the abuse and dissociative experiences constructs portrayed in Figure 1. When we used these original (but poorly fitting) subscales, abuse still exerted no significant direct (.06), indirect (.02), or total (.08) effect on global psychopathy.

To ensure that this theoretical model applied across ethnic groups (Euro American v. African American) and settings (prison vs. substance abuse), we performed group-based analyses. In these analyses, the same model structure (see Figure 1) was specified for two subgroups and then fit simultaneously to these subgroups. In effect, this specification constrained the paths among latent variables (psychopathy, abuse, and dissociation) to be equivalent across groups. These analyses suggested that the structural model shown in Figure 1 was equivalent across ethnicity, $\chi^2(64, N = 600) = 109.48$, $p < .001$, RMSEA = .03, CFI = .98, and setting, $\chi^2(64, N = 615) = 113.67$, $p < .001$, RMSEA = .04, CFI = .98. The entire sample was therefore used for remaining analyses.

We next examined the relationships among abuse, dissociative experiences, and specific constellations of psychopathic traits. If there are phenotypic variations among subtypes of psychopathy, abuse could be more strongly and indirectly related to certain constellations of psychopathic traits than to global psychopathy per se. Although we had no specific hypothesis concerning the relationship of abuse to the interpersonal features of psychopathy, analyses involving the affective and impulsive lifestyle domains allowed us to examine evidence for the diminished affective responding and emotional instability/vicarious conditioning hypotheses, respectively. These structural models were identical to that portrayed in Figure 1, with the exception of the psychopathy construct, which was replaced with interpersonal, affective, or lifestyle constructs in these three additional models. The indicators for these constructs were the PCL–R items with which they were associated.

As shown in Table 5 (row 2), abuse exerted neither a direct nor an indirect effect on interpersonal traits of psychopathy (with PCL–R indicator items 1, 2, 4 and 5). According to the diminished affective responding model, abuse should have asserted a substantial indirect influence of the affective features of psychopathy via the mediating role of dissociative experiences. However, our data did not support this model, as abuse exerted neither a direct nor an indirect effect on these traits (with PCL–R indicator items 7, 8, 6, and 16; see Table 5, row 3). Abuse was unrelated to the core interpersonal and affective features of psychopathy. In contrast, abuse exerted a direct effect on traits that signify an impulsive and irresponsible lifestyle (with PCL–R indicator items 3, 9, 13, 14, and 15; Cooke & Michie, 2001), and this relationship was not mediated by dissociative experiences. This result is consistent with either an emotional instability or vicarious conditioning model.

After completing these primary analyses to address the aims of the study, we conducted a supplemental analysis to explore the role of antisocial behavior and impulsivity in relation to abuse and dissociation. The two-factor, four-facet model for the PCL–R did not fit our data well (Skeem et al., 2004). However, scores on the

Table 4
Zero-Order Relationships Among Composite Variables Used in Models

| New and original composites	Abuse				Dissociation			Psychopathy	
	Physical	Verbal	Sexual	Effects	Absorption	Amnesia	Depersonalization	Affective	Interpersonal
Abuse									
Verbal	.74**								
Sexual	.35**	.32**							
Effects	.70**	.80**	.44**						
Dissociation									
Absorption	.05	.10*	.08*	.08*					
Amnesia	.02	.05	.05	.06	.47**				
Depersonalization	.05	.05	.13**	.06	.56**	.55**			
Psychopathy									
Affective	.00	.05	.00	.00	.10*	.12**	.10*		
Interpersonal	−.01	.05	.04	.02	.04	.02	.02	.54**	
Lifestyle	.10*	.20**	.02	.22**	.12*	.10*	.11*	.37**	.36**

* $p < .05$. ** $p < .01$.
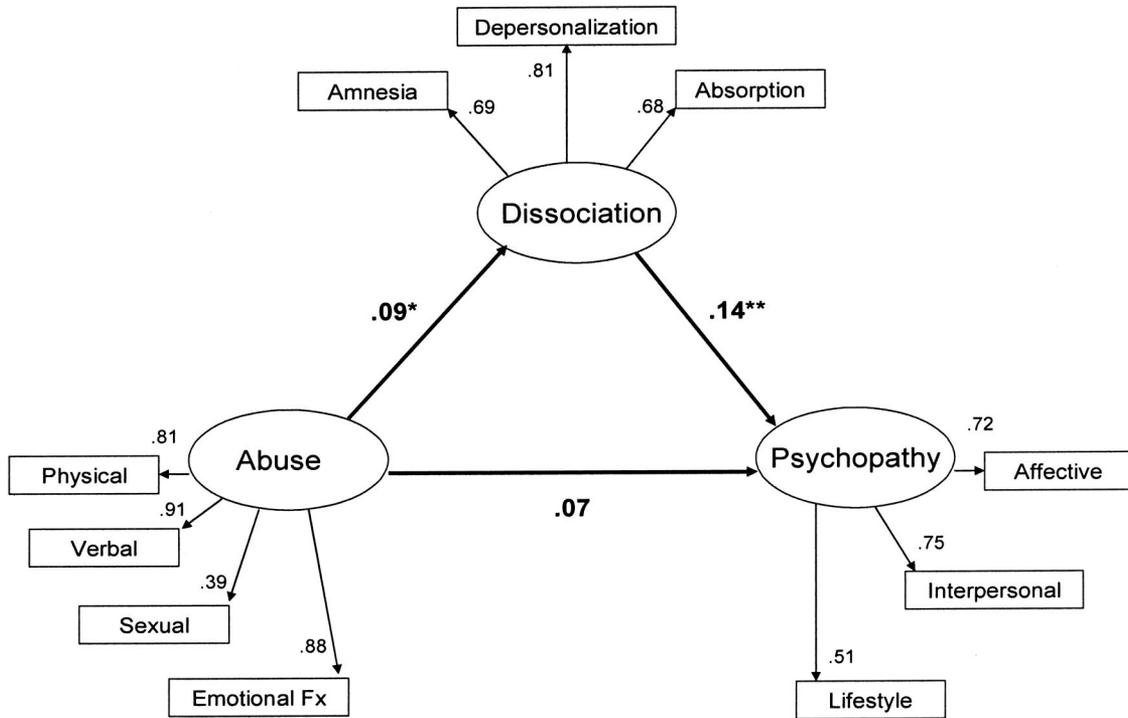
Figure 1. General model of relationships among abuse, psychopathy, and dissociation. All scales loaded on their respective latent variables significantly ($p < .001$). The full original scales were not used because of poor model fit. Fx = effects. *$p < .05$. **$p < .001$.

antisocial facet correlated significantly with both the CATS ($r = .26$, $p < .001$) and DES ($r = .17$, $p < .01$). Thus, for exploratory purposes we examined an additional structural model in which both the impulsivity facet (PCL–R indicator items 3, 9, 13, 14, and 15) and the antisocial facet (PCL–R indicator items 10, 12, 18, 19, 20), which constitute Factor 2 of the PCL–R, were used in place of the psychopathy construct in Figure 1. The resulting model fit was satisfactory, $\chi^2(24, N = 615) = 50.05$, $p < .001$, CFI = .99, RMSEA = .04). In this model, abuse exerted a direct effect (.34, $p < .001$) but not an indirect effect (.02, *ns*) on traits that define Factor 2. This result is consistent with the idea that these two components of the PCL–R tap a common underlying externalizing construct (Patrick, Hicks, Krueger, & Lang, 2005) that is distinct

from the affective and interpersonal facets and with either an emotional instability or vicarious conditioning model.

Discussion

Our findings indicate that a history of child abuse or neglect relates positively but weakly to global psychopathic features. Abuse is unrelated to the core affective and interpersonal traits of psychopathy but relates preferentially and moderately to the impulsive and irresponsible lifestyle or externalizing features of psychopathy. Dissociative experiences do not significantly mediate this relationship. Our findings call into question etiological models positing that early abuse and neglect shut off affective

Table 5
Mediation Models: Fit and Effects

Model	χ^2	df	RMSEA	CFI	Direct effect	Indirect effect	Total effect (D + I)
General test	84.59	32	.05	.98	.07	.01	.09
Psychopathy traits							
Interpersonal	105.06	41	.05	.97	−.01	.00	−.01
Affective	108.10	41	.05	.97	.01	.02	.02
Lifestyle	100.99	51	.04	.98	.26***	.01	.28

Note. All chi-squares are significant at the $p < .001$ level. Total effects are provided for interpretive purposes only; their statistical significance was not tested. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; D = direct effect; I = indirect effect.
*** $p < .001$.

responding, thereby resulting in individuals who possess the cold and callous features of primary psychopathy (see also Rutter, 1972, for a discussion of "affectionless psychopaths"). Our findings extend and clarify previously reported findings linking abuse to psychopathy and antisocial behavior (e.g., Weiler & Widom, 1996; Widom, 1989) and suggest fruitful avenues for the testing of future hypotheses.

For example, our results suggest that abuse could be linked to certain potential variants of PCL–R psychopathy, but not others. In a study of adult offenders who met PCL–R criteria for psychopathy (total score ≥ 29), Hicks et al. (2004) used model-based clustering (Banfield & Raftery, 1993) to identify two subgroups, one of which (aggressive psychopaths) was distinguished by extremely high levels of aggression, alienation, and negative emotionality in general. On a variety of outcome measures (e.g., fighting, anxiety, socialization), associations for this group were similar to those theoretically associated with secondary psychopathy (Karpman, 1941). These aggressive psychopaths obtained PCL–R profiles that were virtually indistinguishable from those of emotionally stable or primary psychopaths: The groups obtained equivalent total and Factor 1 scores, and aggressive psychopaths obtained only marginally higher Factor 2 scores. Hicks et al. did not include measures of early abuse. Nevertheless, many traits of the aggressive psychopath parallel those found to be most strongly related to abuse in the present study. This finding suggests that it would be worthwhile to investigate whether susceptibility (vs. resilience) to negative emotionality mediates the development of psychopathic features in individuals with histories of abuse or abandonment.

Our mediational analyses cast doubt on the hypothesis that the association between early abuse and psychopathy is attributable to the intervening effects of dissociative experiences. Nevertheless, it is possible that different findings would have emerged in a nonclinical sample. For example, Porter (1996) postulated that dissociation-mediated psychopathic features arise as a result of abuse in individuals with constitutionally normal capacities for affective responding. To test this hypothesis, one would require a sample from which individuals with constitutional deficits in affective responding had been excluded. However, our sample presumably included a subset of primary psychopaths with histories of abuse who, according to some authors (e.g., Lykken, 1995), possess a constitutionally fearless temperament. This temperament may render such individuals less vulnerable to the adverse effects of early experiences that are traumatic to those with normal capacities for fear. The likely inclusion of primary psychopaths in our sample could have suppressed the magnitude of observed effects. Specifically, primary psychopaths might be relatively unlikely to experience a dissociative reaction in response to abuse (indirect effect) and relatively likely to manifest high psychopathy scores even in the absence of abuse (direct effect). As progress is made in efforts to identify psychopathy subtypes, including primary psychopathy (Hicks et al., 2004; Poythress & Skeem, 2005), it should become possible to test this hypothesis directly.

In this study, we adopted a simplified posture regarding the putative causal links among abuse, dissociation, and psychopathic features. We argued that the finding that early abuse would be selectively associated with the antisocial and impulsive lifestyle features of psychopathy could provide support for either an emotional instability or a vicarious conditioning model. Both of these models are grossly consistent with the so-called cycle of violence (Widom, 1989) or hostile pedigree (Allan, 1978) hypothesis of abuse, whereby early abuse exerts a direct causal effect on later aggression, predisposing a subset of abused children to become abusers themselves (see also Dodge, Bates, & Pettit, 1990, for hypotheses regarding the causal role of early physical abuse on social information processing deficits that are in turn linked to violence). Of course, these models differ in the hypothesized mechanism (e.g., social learning, cognitive errors, emotional instability) for the link between childhood abuse and later deviant behavior.

Nevertheless, given the cross-sectional nature of our design, several alternative interpretations of our findings are viable. First, the abuse → externalizing arrow could run in the opposite direction. Children born with a difficult temperament may be at heightened risk for abuse because of the challenges and frustration that parents face with these youths. Behavior geneticists refer to this scenario as reactive gene–environment correlation (Plomin, De-Fries, & Loehlin, 1977). Longitudinal studies that incorporate observations of parental reactions to children's behaviors over time could afford at least a partial test of this possibility. Second, some parents who abuse their children may harbor a genetic predisposition toward aggression, impulsivity, and similar traits, which they then transmit to their children, resulting in a correlation between early abuse and childhood aggression. Behavior geneticists refer to this scenario as passive gene–environment correlation (see DiLalla & Gottesman, 1991; Plomin et al., 1977). However, a recent study of 1,116 child twin pairs and their families (Jaffee et al., 2004) suggested that physical abuse (or at least an environmental variable correlated with such abuse) plays a causal role in antisocial behavior rather than acting as a proxy for genetic influences that increase both the likelihood that parents will be abusive and the likelihood that children become antisocial. Third, some features of antisocial behavior disorders (e.g., externalization of blame, hostile attributional biases) may lead some individuals to overreport histories of abuse or abandonment as excuses for bad behavior.

Similarly, the weak, albeit positive and significant, association between abuse and dissociation in the indirect model is susceptible to potential reporting biases. DES scores are correlated positively with fantasy proneness, defined as "a deep and longstanding involvement in daydreaming, imagination, fantasizing, and storytelling . . . that is not necessarily pathological" (Merckelbach & Jelicic, 2004, p. 70). Merckelbach and Muris (2001) noted that "high scores on the Dissociative Experiences Scale are accompanied by fantasy proneness, heightened suggestibility, and susceptibility to pseudomemories. These correlates of dissociation may promote a positive response bias to retrospective self-report instruments of traumatic experiences" (p. 245). Because of these concerns, it would be optimal in future studies to obtain corroborated measures of abuse that are not dependent on retrospective self-report. Nevertheless, official records from child-protection agencies suffer from their own shortcomings (e.g., they do not detect unreported cases) and may not necessarily provide more valid indicators.

Finally, our study design did not permit us to disentangle genetic from environmental influences. We therefore encourage researchers to test competing hypotheses regarding the relation between abuse history and subsequent antisocial/impulsive lifestyle in the

context of genetically informative designs, such as studies of monozygotic twins discordant for a history of early abuse. Such investigations have recently provided support for a causal effect of early abuse (or at least adverse environmental experiences correlated with such abuse) on later psychopathology (Jaffee et al., 2004; Kendler et al., 2000). Similar approaches could allow for more sophisticated and specific tests of the role of early environmental variables, in combination or interaction with genetic predispositions, in the etiology of psychopathy and antisocial behavior.

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