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Clarifying the Link Between Childhood Abuse History and Psychopathic Traits in Adult Criminal Offenders

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Childhood abuse is a risk factor for the development of externalizing characteristics and disorders, including antisocial personality disorder and psychopathy. However, the precise relationships between particular types of childhood maltreatment and subsequent antisocial and psychopathic traits remain unclear. Using a large sample of incarcerated adult male criminal offenders ($n = 183$), the current study confirmed that severity of overall childhood maltreatment was linked to severity of both psychopathy and antisocial personality disorder in adulthood. Moreover, this relationship was particularly strong for physical abuse and the antisocial facet of psychopathy. Sexual abuse history was uniquely related to juvenile conduct disorder severity, rather than adult psychopathy or antisocial behaviors. Additionally, there was a significantly stronger relationship between childhood maltreatment and juvenile conduct disorder than between childhood maltreatment and ASPD or psychopathy. These findings bolster and clarify the link between childhood maltreatment and antisocial behavior later in life.

Keywords: antisocial personality, childhood maltreatment, conduct disorder, psychopathy

Childhood abuse and neglect have been associated with the subsequent development of diverse forms of psychopathology, including both internalizing and externalizing symptoms. Although the relationship between abuse early in life and the development of internalizing disorders such as depression and anxiety has been widely recognized (De Bellis, 2001), the relationship between childhood abuse and subsequent externalizing symptomatology is less clear (but see Beauchaine & McNulty, 2013), particularly with regard to how early maltreatment may exacerbate the development of severe externalizing disorders such as antisocial personality disorder (ASPD) and psychopathy in adulthood.

ASPD is characterized by impulsive, reckless, and aggressive behaviors that commonly result in persistent criminal offending beginning early in development (American Psychiatric Association, 2013). The diagnosis of ASPD in adulthood requires that the individual meet criteria for conduct disorder (CD) before the age of 15. Nearly 80% of the adult prison population meets diagnostic criteria for ASPD (Hare, 1983). By contrast, psychopathy refers to a more specific cluster of traits, with a prevalence of 15% to 25% among the adult prison population (Hart & Hare, 1996). In addition to the reckless and antisocial behavioral components of ASPD, the diagnosis of psychopathy also entails interpersonal and

affective characteristics such as grandiosity, pathological lying, and callousness (Hare, 1996a). The most frequently used measure of psychopathy in forensic samples, the Psychopathy Checklist-Revised (Hare & Neumann, 2006), captures these characteristics in both a two-Factor model (Harpur, Hakstian, & Hare, 1988) and a four-Facet model (Hare & Neumann, 2005). The interpersonal and affective features of psychopathy load onto Factor 1, whereas the lifestyle and antisocial features load onto Factor 2. Factor 1 can be further disaggregated into two Facets; Facet 1 encapsulates the interpersonal components of psychopathy (e.g., glibness, grandiosity) and Facet 2 encompasses the affective traits (e.g., callousness, shallow affect). Similarly, Factor 2 can be broken into Facets 3 and 4; Facet 3 includes the lifestyle features of psychopathy (e.g., impulsivity, irresponsibility) whereas Facet 4 corresponds to the antisocial and criminal features of psychopathy, including characteristics that closely approximate childhood CD (e.g., juvenile delinquency, early behavioral problems). Within this framework, ASPD and psychopathy share Factor 2 traits, whereas Factor 1 is unique to psychopathy. Accordingly, although virtually all highly psychopathic criminal offenders will meet criteria for ASPD, not all who meet for ASPD also meet for psychopathy (Hare, 1996c). Recent empirical studies demonstrate pronounced differences in specific cognitive, affective, and neurobiological characteristics between individuals with ASPD-only and individuals with ASPD + psychopathy (Gregory et al., 2012; Kolla et al., 2013). However, it is unclear whether ASPD and psychopathy differ in terms of their associations with childhood abuse history.

Both ASPD and psychopathy have been associated with adverse early life experiences, including childhood abuse. For instance, diagnosis of ASPD has been associated with severe trauma history, particularly with high rates of physical and sexual abuse (Bierer et al., 2003; Egeland, Yates, Appleyard, & Van Dulmen, 2002). Similarly, juvenile delinquency has been specifically associated with parental hostility (Raskin White, Bates, & Buyske, 2001), and

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some have found that youth who experienced physical abuse early in childhood were at greater risk for being arrested as juveniles, for both violent and nonviolent offenses (Lansford et al., 2007). Using a sample of incarcerated men, Poythress, Skeem, and Lilienfeld (2006) found that high rates of abuse predicted elevated levels of psychopathy, but this relationship was specific to the impulsive-lifestyle features that are associated with both psychopathy and ASPD (Facet 4 items, the juvenile/antisocial features of psychopathy, were not specifically considered in this study). Graham, Kimonis, Wasserman, and Kline (2012) reported similar findings, including a relationship between childhood abuse and Facet 4, though their sample consisted of civilly committed sex offenders, so it is unclear how well these findings would generalize to nonsex offender populations.

One significant gap in the existing literature in this area is how specific types of maltreatment may influence long-term developmental trajectories. Whereas physical abuse has frequently been linked to externalizing behaviors (Lansford et al., 2007), sexual and emotional abuses have greater associations with depression, suicidality, and dissociation (Kisiel & Lyons, 2014; Plunkett et al., 2001; Shapero et al., 2014). Less is known about the long-term consequences of childhood neglect, but there is evidence that emotional neglect, specifically, relates to blunted affective expression, such as alexithymia and the unemotional features of psychopathy (Aust, Härtwig, Heuser, & Bajbouj, 2013; Kimonis, Fanti, Isoma, & Donoghue, 2013). As such, it is possible that emotional neglect is a unique risk factor for the development of psychopathic traits, whereas sexual and emotional abuse are more related to ASPD, which has high rates of comorbidity with internalizing symptoms and suicidality (Verona, Patrick, & Joiner, 2001).

In sum, the extant evidence has identified a relationship between childhood abuse and subsequent ASPD and psychopathy symptomology in child and adolescent samples, as well as in adult criminal offenders. However, there remain several unanswered questions regarding the specificity of these relationships. A better understanding of how childhood maltreatment differentially relates to severe externalizing outcomes may provide further evidence of overlapping but distinct etiologies and, therefore, inform and encourage more specified treatment efforts. Along these lines, it is also informative to investigate which construct is most strongly associated with abuse history. Such information may guide treatment and intervention efforts among afflicted youth and adults.

In addition to replicating the general association between history of childhood maltreatment and adolescent/adult antisocial behavior (as measured by severity of conduct disorder symptoms, ASPD adult symptoms, and psychopathy scores in a large group of incarcerated criminal offenders), the present study will determine whether and how specific subtypes of abuse and neglect (e.g., physical, sexual, emotional) relate differentially to conduct disorder, ASPD, and psychopathy, respectively. Given the broad association between physical abuse and externalizing, we predict that childhood physical abuse will relate to all three measures (conduct disorder, ASPD, and psychopathy), and most strongly to Factor 2 (including both Facets 3 and 4) of psychopathy. Furthermore, given the association between emotional abuse, sexual abuse, and internalizing features, we predict that emotional and sexual abuse will have a relationship with CD, ASPD, and Factor 2 of psychopathy, but not Factor 1. Finally, given the link between emotional neglect and blunted emotional expression, we predict that emo-

tional neglect will have a specific relationship with Factor 1 of psychopathy.

Method

Participants

Participants included $n = 183$ adult males incarcerated at medium security prisons in Wisconsin. Individuals were eligible for participation if they were between the ages of 18 and 55, had no documented diagnosis of a psychotic disorder, and were not currently taking psychotropic medications. Additionally, participants were eligible if they had a 4th grade reading level or above and scored a 70 or above on a standardized measure of intelligence (Wechsler, 1981). Individuals meeting inclusion criteria were asked to participate in an ongoing study on the causes of incarceration and informed that participation was completely voluntary and would have no impact on their incarceration status.

Five participants were excluded because of missing data. One participant was excluded because of outlier data with undue influence on the regression models (Cook, 1977). Descriptive information is included in Table 1.

Assessments

Psychopathy. The Psychopathy Checklist-Revised (PCL-R) was used to assess psychopathy (Hare, 2003). The PCL-R is a scale of 20 items rated 0–2 based on the degree to which the trait is present. Within offender populations the PCL-R is the most widely utilized measure of psychopathy. We computed Factor and Facet scores based on published guidelines (Hare, 2003). Trained undergraduates and professional staff performed all clinical assessments based on information obtained during interviews and reviews of institutional files. PCL-R scores were examined contin-

Table 1
Participant Information (n = 183)

Variable	<i>M</i>	<i>SD</i>	%
Age	32.62	7.74	
IQ	100.46	12.75	
PCL-R score	22.98	6.86	
Factor 1	8.99	2.96	
Facet 1	3.06	1.97	
Facet 2	5.93	1.53	
Factor 2	12.03	4.35	
Facet 3	6.85	2.12	
Facet 4	5.15	2.91	
ASPD total	6.73	3.84	
ASPD adult	3.47	1.75	
CD	3.26	2.83	
CTQ total score	47.03	18.69	
Physical abuse	9.83	4.85	
Physical neglect	8.15	3.56	
Emotional abuse	10.30	5.16	
Emotional neglect	10.96	5.09	
Sexual abuse	7.69	4.95	
Race			
Caucasian			61%
African American			37%
Other			3%

uously for all regression analyses. In our sample, PCL-R scores ranged from 7–37. Interrater reliability ratings were available for 13 participants and yielded a high intraclass correlation ($r = .98$) for PCL-R total scores, as well as Factor (Factor 1, $r = .94$; Factor 2, $r = .98$) and Facet (Facet 1, $r = .91$; Facet 2, $r = .88$; Facet 3, $r = .89$; Facet 4, $r = .98$) scores.

ASPD and CD. ASPD symptoms in adulthood and CD symptoms in childhood were assessed based on criteria set forth by the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (*DSM-IV-TR*; American Psychiatric Association, 2000). Following the PCL-R interview, trained staff assessed ASPD and CD criteria using information gathered from the PCL-R interview and review of institutional files. To receive a diagnosis of ASPD, individuals were required to satisfy at least 3 of a possible 15 CD symptoms (e.g., cruelty to animals before age 15, truancy before age 13), as well as 3 of a possible 7 adult ASPD symptoms (e.g., impulsivity/failure to plan ahead, reckless disregard for safety of others). Total number of criteria met for both CD and adult ASPD was recorded for each participant to assess severity of behavior. In this inmate sample, number of CD symptoms ranged from 0–13, and number of adult ASPD symptoms ranged from 0–7.

Childhood abuse. The Childhood Trauma Questionnaire (CTQ) was used to assess experienced childhood abuse (Bernstein & Fink, 1998). The CTQ is a 28-item scale comprised of five subscales which assess different types of trauma, including physical abuse (e.g., “I was punished with a belt, a board, a cord, or some other hard object”), physical neglect (e.g., “I didn’t have enough to eat”), emotional abuse (e.g., “People in my family said hurtful or insulting things to me”), emotional neglect (e.g., “I felt loved” [reverse scored]), and sexual abuse (e.g., “Someone tried to make me do sexual things or watch sexual things”). All subscales consist of five items scored on a five-point rating scale from *never true* (1) to *very often true* (5). Two items on the physical neglect scale and all items on the emotional neglect scale are reverse scored.

IQ. Intelligence was assessed using the Wechsler Adult Intelligence Scale—Revised (Wechsler, 1981) or the Shipley Institute of Living Scale (Zachary & Shipley, 1986). IQ scores were included as covariates in all regression analyses.

Socioeconomic status. Parent’s education level was used as a proxy for socioeconomic status (SES). Following Hollingshead (1975) guidelines, parent’s education was coded as follows: 1 = did not complete junior high school, 2 = completed junior high school but did not enter high school, 3 = completed some high school, 4 = graduated high school, 5 = some college, 6 = completed 4-year college degree, 7 = graduate school. Mother’s and father’s education level were included as separate covariates in regression analyses.

Data Analyses

Using multiple linear regression, we first examined the relationship between PCL-R total scores and CTQ total and subscale scores. Second, we examined the relationship between PCL-R Factor and Facet scores and CTQ scores. Third, we examined the relationship between ASPD symptoms (total number of criteria met for adult ASPD symptoms) and CTQ scores. Fourth, we

examined the relationship between CD symptoms (number of criteria met) and CTQ scores.

Finally, we examined whether CTQ total scores were more strongly related to CD scores than adult ASPD or PCL-R scores by computing Pearson product–moment correlation coefficients for each relationship. We then compared the relative strengths between these relationships using Steiger’s Z test for two correlated correlation coefficients (Meng, Rosenthal, & Rubin, 1992; Steiger, 1980).

Antisocial personality features vary as a function of age, race, IQ, and socioeconomic status (SES; Harpur & Hare, 1994; Kandel et al., 1988; Piquero, Moffitt, & Lawton, 2005), and prevalence of childhood maltreatment varies across racial and socioeconomic backgrounds (Scher, Forde, McQuaid, & Stein, 2004). As such, age, race, and IQ were included as covariates in all models. Because only a subset of offenders had SES data available ($n = 141$), we performed separate follow-up analyses including this proxy measure of SES as a covariate in the models to confirm the main results. Zero-order correlations among all predictor variables are included in Table 2.

Results

PCL-R Total Score

PCL-R total scores were significantly associated with CTQ total scores, $t(183) = 3.67, p < .001, partial \eta^2 = .07$. Analyses of CTQ subscales revealed that this relationship held for physical abuse history, $t(183) = 4.70, p < .0001, partial \eta^2 = .11$, physical neglect history, $t(183) = 2.93, p < .01, partial \eta^2 = .04$, emotional abuse, $t(183) = 2.15, p < .01, partial \eta^2 = .02$, and emotional neglect history, $t(183) = 2.95, p < .01, partial \eta^2 = .05$. There was no relationship with sexual abuse ($p = .16$; see Table 3).

PCL-R Factors and Facets

When scores for both PCL-R Factors were included in the model, Factor 2 scores were significantly associated with CTQ total scores, $t(172) = 3.27, p < .01, partial \eta^2 = .06$, physical abuse subscores, $t(172) = 4.49, p < .001, partial \eta^2 = .10$, emotional abuse subscores, $t(172) = 2.74, p < .01, partial \eta^2 = .04$, and emotional neglect subscores, $t(172) = 2.10, p < .001, partial \eta^2 = .03$. There was a marginal relationship between Factor 2 scores and physical neglect subscores, ($p = .051$). There was no significant relationship between Factor 1 scores and CTQ total or subscale scores ($ps > .1$).

When scores for all four PCL-R Facets were included in the model, Facet 4 scores were significantly associated with CTQ total scores, $t(167) = 2.17, p = .04, partial \eta^2 = .03$ and physical abuse subscores, $t(167) = 3.67, p < .001, partial \eta^2 = .07$. No other associations between Facet scores and CTQ scores were significant ($ps > .05$).

ASPD Symptoms

Number of adult ASPD symptoms were significantly associated with physical abuse subscores, $t(181) = 3.01, p < .01, partial$

Table 2
Zero-Order Correlations for Predictor Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Age		-.05	.04	-.15	-.05	-.07	-.02	-.16	-.06	.04	-.12	-.09	-.06	-.06	.19	.11	-.04	.17	.14	.29
2. IQ			-.21	.08	.14	-.17	-.07	-.18	.01	-.15	-.10	-.20	-.14	-.04	.05	-.03	-.05	.05	.11	.06
3. Race				-.09	-.11	.23	.14	.21	.19	.02	.17	.19	.06	.17	.03	.12	.05	.17	.14	.29
4. Mom educ.					.45	.01	.09	-.02	.07	.08	-.02	-.02	.03	-.17	-.17	-.05	-.13	-.14	-.16	-.16
5. Dad educ.						-.18	-.11	-.19	-.04	-.16	-.14	-.18	-.13	-.25	-.12	-.17	-.07	-.06	-.09	-.04
6. PCL-R							.81	.91	.73	.64	.73	.85	.79	.64	.22	.32	.20	.11	.15	.06
7. Factor 1								.52	.89	.81	.34	.52	.66	.46	.13	.23	.12	.06	.12	-.02
8. Factor 2									.46	.42	.83	.90	.73	.62	.22	.31	.19	.13	.14	.07
9. Facet 1										.45	.33	.47	.57	.40	.16	.22	.15	.08	.12	.04
10. Facet 2											.30	.42	.56	.38	.06	.17	.05	.01	.09	-.09
11. Facet 3												.51	.61	.44	.17	.21	.17	.12	.10	.06
12. Facet 4													.66	.63	.20	.32	.17	.10	.12	.06
13. ASPD														.42	.15	.22	.14	.05	.14	.03
14. CD															.35	.40	.28	.24	.23	.21
15. CTQ total																.81	.70	.88	.81	.68
16. Phys abuse																	.54	.67	.52	.40
17. Phys negl.																		.53	.60	.23
18. Emo abuse																			.69	.52
19. Emo negl.																				.38
20. Sex abuse																				

Note. Bolded $p < .05$.

$\eta^2 = .05$, but no other associations between adult ASPD symptoms and CTQ scores were significant ($ps > .1$)

CD Symptoms

Number of CD symptoms was significantly associated with CTQ total scores, $t(181) = 5.74, p < .0001, partial \eta^2 = .15$, and all CTQ subscales: physical abuse, $t(181) = 6.08, p < .0001, partial \eta^2 = .17$, physical neglect, $t(181) = 4.12, p < .001, partial \eta^2 = .09$, emotional abuse, $t(181) = 4.19, p < .001, partial \eta^2 = .09$, emotional neglect, $t(181) = 4.37, p < .0001, partial \eta^2 = .10$, and sexual abuse, $t(181) = 3.02, p < .01, partial \eta^2 = .05$.

Comparison of Correlation Strength

The relationship between CD symptom severity and CTQ total scores ($r = .33$) was significantly stronger than the relationship between PCL-R score and CTQ total scores, $r = .21; z = 2.04, p < .05$ and significantly stronger than the relationship between ASPD symptom severity and CTQ total scores, $r = .37; z = 2.90, p < .01$.

Follow-Up SES Analyses

The main analyses between PCL-R scores and CTQ scores were reexamined in a subset of offenders, including SES as a covariate. Largely, all significant findings remained the same, with a few exceptions. With SES included in the model, PCL-R scores were no longer associated with emotional abuse ($b = .09, t(133) = 1.49, p = .14, \Delta R^2 = .02, R^2 = .09$), Factor 2 scores were not associated with emotional neglect ($b = .17, t(126) = 1.53, p = .13, \Delta R^2 = .02, R^2 = .11$), and only marginally associated with emotional abuse ($b = .21, t(126) = 1.90, p = .06, \Delta R^2 = .03, R^2 = .09$), and Facet 4 was not associated with CTQ total scores ($b = .97, t(121) = 1.50, p = .14, \Delta R^2 = .02, R^2 = .13$),

Discussion

Through a systematic study of adult criminal offenders, we have replicated a strong relationship between childhood maltreatment and subsequent externalizing psychopathology. We report four main results. First, overall psychopathy severity (PCL-R total score) was associated with overall childhood maltreatment severity (CTQ total score). Second, this maltreatment-psychopathy relationship was strongest between physical abuse and the antisocial features of psychopathy (Factor 2/Facet 4 subscores). Third, conduct disorder was associated with a history of sexual abuse, whereas ASPD and psychopathy were not. Finally, the relationship between childhood maltreatment and conduct disorder symptom severity was significantly stronger than the relationship between childhood maltreatment and psychopathy or adult ASPD severity. Together, these findings pinpoint particular psychopathological sequelae of specific types of adverse early life experiences. Here we discuss each of these main findings in turn.

Consistent with prior research, psychopathy total scores were significantly associated with greater abuse histories overall. Individuals with high scores on measures of psychopathy reported experiencing substantial maltreatment, including both abuse (i.e., physical, emotional, sexual) and neglect (i.e., physical, emotional). Weiler and Widom (1996) suggest this broad relationship between psychopathy and childhood abuse may mediate the relationship between childhood abuse and violent behavior. Specifically, they suggest that childhood abuse and/or neglect increases the risk of developing psychopathic personality features, which consequently results in an increased risk for engaging in violent and aggressive behavior.

Despite significant zero-order correlations between abuse subtypes and Factor 1 (see Table 2), after partialing out the effects of Factor 2, Factor 1 did not uniquely account for the variance in CTQ total scores or subscores. This finding suggests that child-

Table 3
Regression Results

	CTQ total score					Physical abuse				
	<i>B</i>	<i>SE B</i>	β	<i>dR</i> ²	<i>R</i> ²	<i>B</i>	<i>SE B</i>	β	<i>dR</i> ²	<i>R</i> ²
PCL-R score	.70	.19	.26	.06	.13	.23	.05	.33	.06	.14
Factor 1	.14	.50	.02	.00	.13	.02	.13	.01	.00	.15
Factor 2	1.13	.35	.27	.05		.39	.09	.35	.09	
Facet 1	.54	.80	.06	.00		.09	.21	.04	.00	
Facet 2	-.48	1.01	-.04	.00	.12	-.16	.26	-.05	.00	.15
Facet 3	.92	.74	.11	.01		.16	.19	.07	.00	
Facet 4	1.26	.57	.20	.03		.55	.15	.33	.07	
ASPD adult	1.37	.77	.13	.02	.08	.60	.20	.22	.05	.08
CD	2.52	.45	.39	.14	.21	.70	.16	.41	.16	.19
Physical neglect										
PCL-R score	.11	.04	.21	.04	.05	.12	.05	.16	.06	.02
Factor 1	.10	.10	.09	.01	.05	-.05	.14	-.03	.00	.09
Factor 2	.13	.07	.17	.02		.27	.10	.23	.04	
Facet 1	.21	.16	.12	.01		.03	.22	.01	.00	
Facet 2	-.07	.20	-.03	.00	.05	-.15	.28	-.05	.00	.08
Facet 3	.11	.15	.07	.00		.26	.21	.11	.01	
Facet 4	.13	.11	.11	.01		.27	.16	.16	.02	
ASPD adult	.19	.15	.09	.009	.01	.12	.22	.04	.002	.05
CD	.37	.09	.30	.09	.09	.53	.13	.29	.08	.13
Emotional abuse										
PCL-R score	.16	.05	.21	.04	.09	.07	.05	.10	.01	.10
Factor 1	.14	.14	.08	.01	.09	-.06	.14	-.04	.00	.09
Factor 2	.20	.10	.18	.02		.12	.10	.11	.01	
Facet 1	.10	.22	.04	.00		.09	.22	.04	.00	
Facet 2	.18	.28	.06	.00	.07	-.27	.28	-.08	.01	.09
Facet 3	.14	.21	.06	.00		.24	.21	.10	.01	
Facet 4	.23	.16	.13	.01		.05	.16	.03	.00	
ASPD adult	.26	.21	.09	.008	.06	.13	.20	.05	.002	.10
CD	.54	.12	.30	.09	.15	.34	.12	.21	.04	.14
Sexual abuse										

Note. Age, race, and IQ included as covariates in all models; Bolded $p < .05$.

hood maltreatment has a stronger relationship with Factor 2 traits, such as poor behavioral controls and impulsivity, than with the interpersonal and affective components of Factor 1. More specifically, only Facet 4 was linked to greater abuse overall, as well as to physical abuse, when controlling for the other three Facets.

The impact of childhood maltreatment on emotion regulation could provide important insight into the mechanisms contributing to the relationship between childhood abuse history, antisocial personality features and criminality across development, as well as the nonsignificant relationship between childhood abuse and Factor 1 traits. For instance, Kim and Cicchetti (2010) reported that compared with nonmaltreated children, maltreated children exhibited deficient emotion regulation. Among these individuals, lower emotion regulation was associated with greater externalizing symptoms, contributing to increased peer rejection and, consequently, even greater externalizing symptoms. Within this framework, it is possible that disturbed emotion regulation, particularly emotional reactivity (e.g., Kolla et al., 2013), is a particular consequence of childhood maltreatment that puts affected individuals at risk for developing externalizing disorders like CD and ASPD. Such difficulty regulating emotions then contributes to increased social dysfunction, which in turn leads to greater disinhibition and criminality.

The emotional profile associated with psychopathy, however, does not fit this model. Factor 1, specifically, is associated with

blunted affect and social dominance (Harpur, Hare, & Hakstian, 1989). As such, it is possible that although childhood maltreatment puts individuals at risk for developing CD and ASPD via emotional dysregulation, a different mechanism is responsible for the relationship between the lifestyle and criminal features of psychopathy and childhood maltreatment. It could be that innate callousness and the ability to navigate and manipulate social situations protect these individuals from developing emotionally and socially dysregulated behavior subsequent to experiencing childhood maltreatment. Further research is required to investigate these possibilities.

Though we predicted that increased ASPD and CD symptoms, but not psychopathy, would relate to history of sexual abuse, only CD symptomology was associated with greater sexual abuse history. Although the differential developmental pathways associated with sexual abuse (Plunkett et al., 2001) may shed light onto the nonsignificant relationship with psychopathy, it is less clear why sexual abuse history would relate only to CD and not ASPD. Recently, Ogloff et al. (2012) reported that after a 45-year follow-up, men who had been sexually abused as children were significantly more likely to have been convicted of a sexual offense than men who did not experience childhood sexual abuse. Similarly, other studies have suggested that adult men who have experienced childhood sexual abuse often report difficulty with sexuality, such as sexual confusion and functioning (O'Leary, Easton, & Gould,

2015). With this in mind, it is possible that childhood sexual abuse contributes to more globally impaired functioning and behavioral problems in childhood, but the long-term consequences of sexual abuse, among men, relates more specifically to sexual dysfunction rather than personality pathology.

Finally, we found that the relationship between childhood abuse history and conduct disorder severity was significantly stronger than the relationship between child abuse history and adult psychopathy scores. These findings suggest that the significant relationship between childhood maltreatment and distal adult antisociality may be impacted by early onset antisociality, more proximal to the experience of maltreatment. Although it is fairly intuitive that childhood conduct problems, compared with adult conduct problems, would evidence a stronger relationship with childhood maltreatment, such findings may encourage further study on early, trauma-focused intervention among juveniles with severe conduct problems. Importantly, recent work examining environmental contributions to the presentation of psychopathic traits in adolescents has identified a subtype of juvenile psychopath characterized by greater abuse history and PTSD symptomology (Kimonis, Frick, Cauffman, Goldweber, & Skeem, 2012; Kimonis, Skeem, Cauffman, & Dmitrieva, 2011; Tatar, Cauffman, Kimonis, & Skeem, 2012). This suggests that further examination of psychopathic variants within the adult offender population may help clarify the abuse-psychopathy connection, and that trauma-focused therapy may be a worthwhile effort when treating traumatized juveniles with psychopathic traits.

The reported findings remained largely unchanged when controlling for socioeconomic status, with a few exceptions: PCL-R scores were no longer associated with emotional abuse, Factor 2 scores were not associated with emotional neglect and only marginally associated with emotional abuse, and Facet 4 was not associated with CTQ total scores. Of note, in our sample, mother's education level education level was significantly and negatively correlated with CTQ total, emotional abuse, and emotional neglect scores, whereas father's education level was significantly and negatively correlated with PCL-R total scores and Factor 2 scores. Though speculative, this finding may suggest that, between parents, there are differential contributions to the experience of childhood maltreatment and development of externalizing symptoms.

Because the measure of CD used in this study followed *DSM-IV* criteria, the qualifier of "limited pro-social emotions" in the diagnosis now included in the *DSM-5* was not utilized. As such, future research should investigate the relationship between CD with and without these "callous-unemotional" (CU) traits as it relates to adult ASPD and psychopathy and childhood abuse. If the relationship between abuse and psychopathy were specific to more general externalizing features of psychopathy, we would anticipate that the relationship between abuse and adult psychopathy might have differential relationships for individuals who exhibited high versus low CU traits in adolescence. Though it remains unclear how maltreatment may impact antisocial behavior and psychopathic traits across development, there is some evidence that environmental factors, such as quality of parenting and socioeconomic status, relate to stability of psychopathic traits throughout early to late adolescence (Frick, Kimonis, Dandreaux, & Farrell, 2003).

This study has several notable strengths. First, we were able to examine relationships between childhood maltreatment history in both ASPD offenders and psychopathic offenders, contributing

further knowledge regarding differential abuse histories among antisocial personalities. Additionally, whereas previous studies have frequently used composite measures of abuse, the current study examined specific types of abuse and neglect. We also assessed specific subsets of psychopathic characteristics (i.e., Factors and Facets). Together, these analyses revealed more precise relationships between subtypes of childhood abuse and subset of psychopathic traits than had previously been known. Finally, this study compared the differential strengths of the relationships between childhood abuse, conduct disorder severity, and severity of psychopathy, thus highlighting the pivotal role that juvenile behavior problems play in linking childhood maltreatment to adult psychopathy. Our findings thus substantially augment the body of empirical evidence investigating the relationship between childhood abuse and psychopathy within an adult sample.

Despite these strengths, this study had several limitations. The first limitation involves the use of self-report measures of abuse in a population characterized by dishonesty. It is possible that psychopathic offenders reported greater abuse histories inaccurately. However, all participants were informed that their participation would have no impact on their incarceration status, thus reducing motivation to falsify abuse histories. Additionally, there is evidence that psychopathic offenders provide accurate self-reports, even for ostensibly negative traits and experiences. A widespread self-report measure of psychopathic characteristics, the Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996), has been validated in incarcerated samples (Poythress, Edens, & Lilienfeld, 1998). Edens, Poythress, and Lilienfeld (1999) have shown that the PPI, like the PCL-R, predicts increased risk of aggressive institutional behavior. Thus, it appears that psychopathic offenders provide valid self-report data on structured questionnaires (Lilienfeld & Fowler, 2006). Relatedly, the current study utilized a cross-sectional design with retrospective, self-report data. Future studies should employ longitudinal designs to further examine the long-term effects of childhood abuse and neglect and, more specifically, how they relate the development of psychopathic traits and general externalizing behavior.

In addition, because the data in this study are correlational in nature, it is not possible to conclusively infer causality or directionality between variables. For example, it is possible that childhood maltreatment impacts the development of antisocial behavior in adolescence and adulthood, but it is also possible that these children have inherently difficult temperaments, therefore instigating abusive relationships with their caretakers (Plomin, 1995). Given the many risk factors for antisociality, it is also important to consider genetic contributions to the development of CD, ASPD, and psychopathy, as well as gene-by-environment relationships (see Farrington, 2005; Herndon & Iacono, 2005).

If childhood abuse does indeed influence the development of antisocial behavior and personalities, it is unclear what mechanism may be responsible for this developmental trajectory. Though the proposed model emphasizes the role of emotion dysregulation, childhood abuse is also associated with cognitive abnormalities (Beers & De Bellis, 2002). As such, it is also possible that abuse early in life results in cognitive deficits that contribute to criminal offending behavior. Accordingly, it is important for future research to specify potential mechanisms underlying the relationship between abuse and externalizing behavior and psychopathy.

In sum, the current study confirms that individuals with ASPD and individuals with psychopathy evince extensive abuse histories. We found that this relationship was strongest between physical abuse and the antisocial features of psychopathy. Furthermore, it appears that sexual abuse has a unique relationship with CD symptomatology. The study data also indicate that the relationship between childhood maltreatment and the juvenile antisocial features of psychopathy is stronger than the relationship between childhood maltreatment and the adult manifestation of psychopathy. Given that psychopathic individuals commit a disproportionate amount of crime (Hare, McPherson, & Forth, 1988), if abuse does influence criminal behavior, particularly during adolescence, it may be possible to diminish some of this violent, criminal behavior if therapeutic intervention is offered early in life.

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