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Child psychopathic traits moderate relationships between parental affect and child aggression

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Abstract

Objective—Previous studies show that children with psychopathic traits may be less responsive to parenting. While harsh/inconsistent parenting is associated with increased problem behaviors in children low on psychopathic traits, children high on psychopathic traits show consistently high levels of problem behavior regardless of negative parenting. Moderating effects of child psychopathy on positive dimensions of parenting have not been explored.

Method—We applied multi-level regression models to test for interactions between child psychopathic traits and both positive and negative parental affect on individual differences in both reactive and proactive aggression in a community-based sample of 1,158 children aged 9–10.

Results—There were significant associations between psychopathy, and positive and negative parental affect with both forms of aggression. Child psychopathic traits also moderated effects of positive and negative parental affect. Children low on psychopathic traits showed decreasing reactive aggression as positive parental affect increased, and increasing levels of reactive aggression as negative parental affect increased, but children high on psychopathic traits showed more stable levels of reactive aggression regardless of levels of parental affect. Proactive aggression was more strongly associated with negative parental affect among children with higher levels of psychopathic traits.

Conclusions—In a community sample of pre-adolescent children, child psychopathic traits were shown to moderate the effects of parental affect on aggression. Reactive aggression in children high on psychopathic traits appears less responsive to variations in either positive or negative parenting. In contrast, child psychopathic traits may exacerbate the effects of high levels of negative parental effect on proactive aggression.

Keywords

psychopathy; parenting; aggression; parental affect; children

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INTRODUCTION

The distinct constellation of psychopathic personality traits, including interpersonal characteristics (e.g., manipulativeness, superficial charm), deviant behavior (e.g., irresponsibility, impulsivity), and affect (e.g., shallow emotions, lack of empathy), explains some of the heterogeneity of child problem behavior. Psychopathic adults and adolescents have been shown to exhibit low physiological arousal in aversive situations, suggesting a deficit in avoidance learning.¹⁻⁵ Psychopathic youth are less sensitive to punishment cues,^{6,7} threat and distress cues,⁸ and show deficits in moral reasoning⁹ and empathy.¹⁰ Importantly, antisocial behavior of youth with psychopathic traits tends to be more severe¹¹ and chronic¹² than youth without psychopathic traits. These differences have stimulated the need to better understand the etiology, development and manifestation of psychopathy and accordingly, research on juvenile psychopathy has gained momentum in recent years.

Relationships between Psychopathy, Parenting, and Antisocial Behavior

Evidence from a small number of previous studies suggests that psychopathic traits may make children less amenable to shaping influences such as parental discipline and socialization, facilitating antisocial behavior. The first study of this kind¹³ was conducted in a sample of 136 clinic-referred and 30 community-based children aged 6–13, using parent and teacher ratings on the Callous-Unemotional (CU) traits subscale of the Antisocial Screening Process Device¹⁴ to measure psychopathy. Parental reports of ineffective parenting were positively related to both parent- and teacher-reported symptoms of oppositional defiant (ODD) and conduct disorder (CD) in children with low levels of CU traits. However, ineffective parenting did not predict ODD and CD symptoms for children high on CU traits.

A similar study was conducted in a sample of 8 year-old children at high and low risk for aggression, using a composite measure of ineffective parenting practices that included harsh, inconsistent, and intrusive parenting, and poor parental monitoring and supervision.¹⁵ Significant interactions between child psychopathic traits and poor parenting were found when CU traits were measured continuously, and the outcome was teacher-report of externalizing behavior or peer-nominated aggression. Significant interactions between CU traits and parent reports of both harsh punishment and low parental warmth were also found in a large community sample of girls aged 7–8, with associations between ODD and CD symptoms and either index of dysfunctional parenting being stronger at lower levels of CU traits.¹⁶

Edens and colleagues¹⁷ extended prior research by investigating whether interactions between parenting and psychopathy differed depending on how psychopathy was operationalized, using a sample of adolescent juvenile male offenders. Using different factors from the self-report Youth Version of the Psychopathy Checklist-Revised (PCL-YV),¹⁸ results partially replicated previous studies, in that delinquent behavior increased with higher levels of harsh and inconsistent parenting only for boys low on the Affective Deficit factor of the PCL-YV. A reverse pattern was found for the Interpersonal factor of the PCL-YV: the association between harsh/inconsistent parental discipline and antisocial behavior was *weaker* among juveniles with lower Interpersonal scores than those with higher Interpersonal scores. No significant interactions were found for the Antisocial or Behavioral factors of the PCL-YV.

While there is mounting evidence that youth with affective features of psychopathy are less influenced by negative aspects of their caretakers' behavior, most studies have not separated affectional components of negative parenting from behavioral components. In addition, no prior study has examined whether child psychopathic traits moderate the effects of *positive*

parenting on child antisocial behavior. There is ample evidence for protective effects of positive parenting behavior (e.g., parental warmth, parental involvement, and parent-child closeness) on the development of problem behavior in childhood and adolescence,^{19–23} but whether psychopathy moderates these protective effects is unknown. In *The Mask of Sanity*, Cleckley's²⁴ seminal monograph on psychopathic personalities, case studies describe individuals who came from ostensibly 'good' families with concerned, competent parents. This is often reflected in the media, when friends and family describe how many psychopathic individuals appear to be brought up in normal, loving homes. Thus, the moderating effect of psychopathy previously found on negative parenting may also operate on *positive* parenting behavior: problem behavior of children with psychopathic traits may be less amenable to the protective effects of positive parent-to-child affect.

Reactive Versus Proactive Aggression

To date, most of the small number of studies investigating interactions between child psychopathy and parenting have focused on general antisocial behavior (e.g., CD, ODD, delinquency). Only one study has specifically examined the moderating effects of child psychopathy on aggressive behavior.¹⁵ Previous work has distinguished reactive and proactive aggression on the basis of both function and motivation.^{25–28} While reactive aggression represents hostile or angry responses to perceived threats or provocations, proactive aggression refers to deliberate behaviors that are aimed at obtaining desired goals and are motivated by the anticipation of rewards.²⁹ Reactive and proactive aggression are related to different antecedents. For example, harsh parenting is more predictive of reactive aggression,^{30–32} whereas indulgent parenting is more strongly associated with proactive aggression.³³ Importantly, research on psychopathic traits suggests that reactive aggression is more strongly linked to negative emotionality,^{34,35} while proactive aggression is more closely linked to decreased emotional reactivity^{36,37} and an increased tendency to exhibit a callous and unemotional response to threats or provocations.³⁸ As such, psychopathy may show different interactions with parenting for reactive versus proactive aggression.

The Present Study

There is emerging evidence that children high on psychopathic traits may be less responsive to the effects of parenting. However, prior studies have focused exclusively on negative aspects of parenting, and have most often combined both affective and behavioral measures of negative parenting into a single index. The present study specifically investigates whether psychopathic traits moderate associations between *affectional dimensions* of parenting and childhood aggression in a large, diverse, community sample of children. We further extend prior research by considering *both* positive and negative parental affect and by examining moderating effects on both reactive and proactive forms of aggression. We hypothesize that aggressive behavior among children with higher levels of psychopathic traits will be less strongly associated with either positive or negative parental affect compared to children with lower levels of psychopathy.

METHOD

Participants

The current sample consisted of 1,210 9–10 year-old twin children from 605 families participating in the first wave of the USC Twin Study.³⁹ Families with twin children of eligible age were sent letters describing the study. Approximately 70% of the 860 families eligible for recruitment participated in the study. The sample is representative of the ethnic and socio-economic diversity of the greater Los Angeles area.³⁹

Procedure

Children and their caregivers participated in a 6–8 hour on-campus testing and interview session.³⁹ Most caregivers (91.4%) were biological mothers. Families were monetarily compensated for their efforts. The study protocol was approved by the USC Institutional Review Board. A Certificate of Confidentiality was obtained from the National Institute of Mental Health to protect the privacy of participants.

Measures

Outcome measures

Reactive and proactive aggression: Aggression was measured via child self-report using the 23-item Reactive-Proactive Aggression Questionnaire (RPQ).⁴⁰ Reactive aggression was assessed with 11 items (e.g., damaged things because you felt mad) and proactive aggression was measured with 12 items (e.g., had fights to show who was on top). Responses were scored on a 3-point scale (1=Never, 2=Sometimes, 3=Often). Factor analysis of the RPQ with other samples has supported the two-factor structure of the RPQ.^{40–42} Prior studies using the RPQ indicate good construct validity and reliability of the two subscales.^{40,42,43} Scale scores of reactive (male: $\alpha=.75$; female: $\alpha=.75$) and proactive aggression (male: $\alpha=.73$; female: $\alpha=.69$) were created by averaging responses to relevant items. Proactive aggression was positively skewed (skewness=2.82) and was log transformed for analyses.

Predictors

Psychopathic traits: Psychopathic personality traits were measured using a modified version of the parent-report Child Psychopathy Scale (CPS),⁴⁴ comprising 55 yes/no items. A total CPS score was obtained by averaging all items (male: $\alpha=.85$; female: $\alpha=.83$).

Positive and negative parental affect: Parental affect was measured using child responses to a 30-item affect questionnaire adapted from Hetherington et al.⁴⁵ Similar items have been used in another large family study of adolescent development.⁴⁶ Positive affect (POS) was measured by 25 items (e.g., “How often does your caregiver praise you for something you've done?”). Negative affect (NEG) was measured by 5 items (e.g., “How often does your caregiver criticize you?”). Items were scored on a 5 point Likert-type scale (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always) and were averaged to create separate subscales for POS (male: $\alpha=.89$; female: $\alpha=.89$) and NEG (male: $\alpha=.53$; female: $\alpha=.60$).

Covariates

Sex: A dummy variable for sex was included in all analyses where 0=female (51.5%) and 1=male (48.5%).

Race/Ethnicity: The sample included Caucasian (27.1%), Hispanic (37.1%), African American (13.9%), Asian (4.7%), and Mixed-ethnicity (17.2%) children. Race was included as a covariate in all analyses using dummy variables for the Hispanic, African American, Asian, and Mixed groups, assigning Caucasians to the reference group.

Socioeconomic status (SES): SES was assessed with the Hollingshead's Four-Factor Index,⁴⁷ using caregivers' self-reported education, occupation, and income levels. The sample had an average SES of 42.36 ($SD=12.09$), ranging from 14.00 to 66.00.

Statistical Analysis

As the current analyses use a community-based twin sample, individual assessments were clustered within families, which violated assumptions of statistical independence. A multilevel modeling approach using SPSS⁴⁸ was used to account for non-independence

between children in the same family. Specifically, participants were identified by their own personal ID and by the family ID they shared with their co-twins. By incorporating the family ID as a random effect, the variance in aggression can be decomposed into variance attributable to differences between individuals, and variance due to differences between families, the latter of which are accounted for by the random effect.⁴⁹ The multilevel approach thus accounts for the clustered data and allows the model to produce accurate standard errors and significance tests.⁵⁰ While we did not specify different variance components (i.e., random effects) for identical and fraternal twins in current analyses, when analyses were repeated allowing for zygosity differences in variance components, results (available from the senior author) were virtually identical and significance levels for parameters were unchanged.

Four hierarchical models were specified for reactive and proactive aggression, respectively. Model 1 was an unconditional means model estimating between-individual and between-family variation. Model 2 added covariates. Model 3 added main effects of CPS and parental affect (POS and NEG). Interactions between CPS and parental affect were examined in Model 4 (i.e., CPS*POS, CPS*NEG). Two-way interactions with gender and three-way interactions among gender, CPS, and parental affect were tested. However, as no significant interaction effects with gender were found, they are not reported in the present study. Given that reactive and proactive aggression were moderately correlated (see below), models for reactive aggression controlled for proactive aggression, and vice versa. For interpretation purposes, all variables were standardized. Models were compared using change in Log Likelihood ($-2LL$) statistics, which follow a χ^2 distribution. A significant decrease in $-2LL$ indicates that the test model is an improvement over the previous model. Significant interaction effects were plotted and interpreted using methods outlined by Preacher and colleagues.⁵¹

RESULTS

Missing data were processed with listwise deletion, resulting in an $N=1,158$ (95.7% of sample). Means and Pearson correlations among main study variables are presented in Table 1, separately by gender. To facilitate comparison with other samples, raw means and standard deviations (SD) are given. ANOVA adjusting for the correlated data revealed significant gender difference in four out of five measures. Boys had higher scores on CPS [$F(1,1156)=29.44, p<.001$], reactive aggression [$F(1,1156)=8.13, p<.01$], and proactive aggression [$F(1,1156)=19.12, p<.001$], and lower scores on POS [$F(1,1156)=11.75, p<.001$]. The correlation between reactive and proactive aggression was $r=.50$ in both genders. Correlations between CPS and measures of aggression were significant for both boys and girls ($r=.13$ to $.19$). Associations with reactive and proactive aggression were negative for POS ($r=-.07$ to $-.18$), but positive for NEG ($r=.22$ to $.29$). All correlations were significant ($p<.05$) except for trend-level associations between POS and NEG ($r=-.08, p=.052$) and POS and reactive aggression ($r=-.07, p=.08$) in males.

Reactive aggression

Results for reactive aggression are shown in Table 2. Findings from Model 1 revealed statistically significant variability in measures of reactive aggression between individuals ($\eta^2=.73, p<.001$) and between families ($\eta^2=.27, p<.001$), supporting the use of multilevel modeling to correct for sample non-independence. Model 2, which included covariates and proactive aggression, had a significantly better fit than Model 1 (see Table 2). In comparison to Caucasian participants, Hispanic, Asian, and Mixed-ethnicity participants reported lower levels of reactive aggression. Proactive aggression was significantly and positively related to reactive aggression. SES and gender were not associated with reactive aggression. Model 3 had a significantly better fit than Model 2. Findings indicated a significantly positive main

effect of NEG ($\beta=.13$, $SE=.03$, $p<.001$) and a trend-level positive main effect of CPS ($\beta=.05$, $SE=.03$, $p=.07$). The main effect of POS was not significant ($\beta=-.03$, $SE=.03$, $p=.32$). Interaction effects between CPS and parental affect were examined in Model 4. In comparison to Model 3, Model 4 had a significantly better fit ($2=18.68$, $df=2$, $p<.001$). Interaction effects between both measures of parental affect and CPS were statistically significant (CPS*POS: $\beta=.08$, $SE=.03$, $p<.01$; CPS*NEG: $\beta=-.07$, $SE=.02$, $p<.01$).

To explore the significant interactions between CPS and parental affect, we plotted relationships between parental affect and reactive aggression as a function of different levels of CPS. The simple slopes of POS and NEG on reactive aggression were estimated at a low level of CPS (i.e., 1 SD below the mean), the mean level of CPS, and a high level of CPS (i.e., 1 SD above the mean). Significantly negative associations between POS and reactive aggression were found for individuals with the low level of CPS ($\beta=-.11$, $SE=.04$, $p<.01$) but not for individuals with the mean ($\beta=-.03$, $SE=.03$, $p=.28$) or high levels ($\beta=.05$, $SE=.04$, $p=.14$) of CPS (Figure 1). Similarly, the positive association between NEG and reactive aggression was significantly stronger for individuals with the low level of CPS ($\beta=.20$, $SE=.04$, $p<.001$) than individuals at mean ($\beta=.13$, $SE=.03$, $p<.001$) or high ($\beta=.07$, $SE=.03$, $p=.05$) levels of CPS (Figure 2).

Proactive aggression

Table 3 presents results for proactive aggression. Variance components from Model 1 revealed both between-individual ($\tau^2=.75$, $p<.001$) and between-family variability ($\tau^2=.25$, $p<.001$). Model 2 had a significantly better fit than Model 1 (see Table 3). Males reported significantly higher levels of proactive aggression than females. Hispanic, African American, and Mixed-ethnicity participants reported higher levels of proactive aggression than Caucasian participants. Reactive aggression was significantly and positively associated with proactive aggression. The effect of SES was not significant. Model 3 showed significantly positive main effects for CPS ($\beta=.07$, $SE=.03$, $p<.05$) and NEG ($\beta=.10$, $SE=.03$, $p<.001$), and significantly negative main effects for POS ($\beta=-.10$, $SE=.03$, $p<.001$). Model 4 adding interaction effects between CPS and parental affect had a significantly better fit than Model 3 ($\tau^2=21.39$, $df=2$, $p<.001$), with a significant interaction effect between CPS and NEG ($\beta=.11$, $SE=.02$, $p<.001$). Figure 3 shows that NEG had significantly positive associations with proactive aggression at mean ($\beta=.09$, $SE=.03$, $p<.001$) and high levels ($\beta=.20$, $SE=.03$, $p<.001$) of CPS, but not at low levels of CPS ($\beta=-.02$, $SE=.04$, $p=.64$).

DISCUSSION

The present study examined whether psychopathic traits in children moderate the typically robust relationships between positive and negative parenting with child reactive and proactive aggression. Independently, both childhood psychopathy and negative parental affect were positively correlated with aggression, while positive parental affect inversely correlated with aggression. However, as expected we found that level of child psychopathic traits significantly moderated the relationships between parental affect and aggression.

For reactive aggression, the association between parental negative affect and aggression was stronger for children with average or below-average levels of psychopathy. These results are consistent with prior studies showing that children high on psychopathy are less responsive to harsh and inconsistent discipline strategies.^{13,15,16} Because most prior studies have used clinically-based samples, our replication of these results in a large community-based sample indicates that the same mechanisms may underlie individual differences in aggression and psychopathic traits across a continuum of clinically-disordered and non-disordered behaviors. In addition, the present study was the first to specifically examine whether child psychopathic traits significantly moderated the protective effects of *positive parenting* on

aggression. As hypothesized, levels of reactive aggression among children low on psychopathic traits decreased with increasing positive parental affect, consistent with a large body of literature on family processes.^{19,20,23} In the presence of elevated psychopathic traits, however, positive parenting did not confer the same protective effects; children high on these traits had more similar levels of reactive aggression, regardless of how much positive parenting they reported.

Etiological theories of psychopathy posit that a lack of sensitivity to punishment cues and aversive stimuli facilitate the development of antisocial behavior in youth with psychopathic traits. Our finding that psychopathic traits also interacted with *positive* parental affect implies that youth with psychopathic traits may be less affected by emotional cues in general, and not simply negative or punishment situations. This is consistent with the widely-held belief that abnormal semantic and affective processing and functioning is at the center of the psychopathy construct.²⁴ A growing body of research demonstrates that psychopathic individuals have difficulty processing emotional stimuli. For example, psychopathic individuals perform more poorly than non-psychopathic individuals on tasks determining whether a string of letters is a word or a non-word, but only when the words are affectively valenced,^{52,53} and event-related potential (ERP) activity in response to either positively *or* negatively affect-laden words is lower in psychopaths than normal participants. Studies employing facial expression stimuli demonstrate that psychopaths have difficulty identifying *both* positive and negative emotions, and are less physiologically responsive to affect-laden cues.^{54,55}

Neuroscience studies show deficits in neural circuitry surrounding emotion recognition and regulation in psychopaths. Results from startle-blink studies indicate that psychopathic individuals show deviant response patterns to both pleasant and unpleasant affective stimuli.^{56–58} In comparison to non-psychopathic individuals, psychopaths are more likely to exhibit abnormal brain activation patterns while viewing facial expressions or affectively valenced pictures.^{54,59,60} While these studies have been done primarily with adult populations, the results of the present study may suggest that deficits in neural processing of both positive and negative emotions associated with psychopathy begin in childhood. If children with psychopathic traits have difficulty discerning emotions and are not neurologically primed to interpret and utilize affective cues in the same way non-psychopathic individuals are, it is logical that reactive aggression, which is triggered by inappropriate affective response to social stimuli, is largely unaffected by variations in either parental warmth/affection or parental coldness/criticism.

In contrast to results for reactive aggression, the present study found that parental negative affect had a stronger association with proactive aggression for children *high* on psychopathy. Moreover, there was no interaction between psychopathy and parental positive affect for proactive aggression. While we note that at least one prior study has reported increased sensitivity to harsh/inconsistent parenting among children high on psychopathy,¹⁷ our results regarding the interaction between psychopathy and negative affect for proactive aggression are in contrast to the majority of prior studies,^{13,15,16} and are also in the opposite direction of our results for reactive aggression. As such, we cannot rule out the possibility of a stochastic effect, especially given the low prevalence of proactive aggression in this community-based sample of preadolescents. However, the dissimilar pattern of results may also be related to etiological differences these two forms of aggression. Theoretical work distinguishing proactive and reactive aggression²⁹ suggests that reactive aggression originates from the frustration-aggression model,⁶¹ while proactive aggression arises primarily through mechanisms based on social learning theory.⁶² It is not unreasonable to hypothesize that caregivers who demonstrate higher levels of negative affect are more likely to model aggressive behavior. As proactive aggression may be a learned behavior, it is

possible that children high on psychopathic traits have a greater likelihood to model aggressive behavior than children low on psychopathic traits, resulting in higher levels of proactive aggression. Nevertheless, the different patterns of interactions between psychopathy and parenting for different forms of aggressive behavior should be interpreted with caution, and our results, especially for proactive aggression, need to be replicated in other samples.

There are several limitations to this study. First, as expected,^{63,64} regression coefficients for interactions between parental affect and psychopathy were small. However, the impact of these interactions was relatively large. For example, when examining differences in proactive aggression as a function of both negative parental affect and child psychopathy (Figure 3), there is little difference (~0.20 sd) in aggression across psychopathy groups when levels of negative affect are low. When levels of negative affect are high, however, there is a difference in aggression of >0.90 sd units for children at low versus high levels of psychopathy. Second, participants fell within a narrow age-range, allowing us to draw specific conclusions about associations of parenting, child psychopathy, and aggression in pre-adolescent children, but limiting generalizability to other ages. Third, data were cross-sectional and do not speak to developmental processes over time. Longitudinal data are needed to definitively establish causality between parental affect, psychopathy, and aggression. Fourth, we have shown in prior publications using this sample that aggression and psychopathy are influenced by both genetic and environmental factors.^{65,66} Whether genetic and environmental factors differentially influence *associations* between parenting and aggression for children high and low on psychopathic traits has yet to be explored. Lastly, although this study is the first to investigate interactions between child psychopathic traits and both positive and negative parental affect, only one dimension of positive parenting was examined. Future work should explore interactions with other dimensions of positive parenting (e.g., parental involvement). We intentionally focused on negative affect, rather than a composite measure of parental affect and behavior (e.g., harsh/inconsistent parenting). Our negative affect measure consisted of 5 items, and scale reliability was low. While this could have introduced bias into our results, the interaction between negative affect and CPS was in the expected direction for reactive aggression, and correlations between negative affect and other predictor variables were consistent with prior research. Nevertheless, future studies with different measures could determine whether interactions between child psychopathy and negative parenting are more strongly driven by affectional or behavioral aspects of parenting.

This is the first study in juvenile psychopathy to examine associations among parental affect, child psychopathic traits, and aggression in a large, community-based sample, using measures of both positive and negative parental affect. Bronfenbrenner's bioecological model emphasizes the role of proximal processes, i.e., the ways in which children interact with their environment, in development, but also predicts that the magnitude of associations between proximal processes and child outcomes may vary for children with different individual characteristics.⁶⁷ Thus, different parenting styles may result in similar outcomes for different children, and different children may respond differently to the same parenting style. Our findings provide support for this hypothesis, showing that parents' expressions of both positive and negative affect are less strongly associated with reactive aggression for children high on psychopathic traits, although these patterns were not found for proactive aggression. Our results suggest that clinicians working with certain types of behavioral problems in children with psychopathic traits need to consider not only altering parent-child dynamics, but may also need to help children develop more appropriate recognition and response to social and emotional stimuli.

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Figure 1. Moderating Effect of Child Psychopathic Traits (CPS) on the Relationship between Parental Positive Affect and Child Reactive Aggression

Note: Reactive aggression has been standardized. Simple slopes were significant for individuals with the low level of CPS but not for individuals with the mean and high levels of CPS.

Figure 2.
Moderating Effect of Child Psychopathic Traits (CPS) on the Relationship between Parental Negative Affect and Child Reactive Aggression
Note: Reactive aggression has been standardized. Simple slopes were significant across all three levels of CPS.

Figure 3. Moderating Effect of Child Psychopathic Traits (CPS) on the Relationship between Parental Negative Affect and Child Proactive Aggression
 Note: Proactive aggression has been standardized. Simple slopes were significant for individuals with the mean and high levels of CPS but not for individuals with the low level of CPS.

Table 1

Means, standard deviations (*SD*), and intercorrelations among main study variables

	Predictors			Outcomes	
	1. CPS	2. POS	3. NEG	4. Reactive	5. Proactive
1. CPS		-.10*	.18***	.18***	.19***
2. POS	-.14***		-.08	-.07	-.18***
3. NEG	.16***	-.20***		.22***	.25***
4. Reactive	.13**	-.13***	.29***		.50***
5. Proactive	.17***	-.18***	.29***	.50***	
Mean (<i>SD</i>), males N = 562	1.26 (.13)	3.80 (.60)	2.25 (.73)	1.66 (.34)	1.09 (.17)
Mean (<i>SD</i>), Females N = 596	1.22 (.12)	3.92 (.58)	2.19 (.75)	1.61 (.32)	1.06 (.12)

Note: Males above the diagonal, females below the diagonal. Descriptive statistics are given for raw data. CPS = Child Psychopathy Scale, NEG = Negative Parent-to-Child Affect, POS = Positive Parent-to-Child Affect, Proactive = proactive aggression, Reactive = reactive aggression.

*
 $p < .05$
 **
 $p < .01$

 $p < .001$

Table 2

Multilevel regression predicting reactive aggression by Child Psychopathy (CPS) and Parental Positive and Negative Affect

	Model 1		Model 2		Model 3		Model 4	
	b	SE	b	SE	b	SE	b	SE
Fixed Effect								
Intercept	-.00	.03	.16*	.06	.18**	.06	.20***	.06
SES			.00	.00	.01*	.00	.01*	.00
Hispanic			-.28***	.09	-.29***	.08	-.29***	.08
African American			-.07	.10	-.10	.09	-.09	.09
Asian			-.54***	.14	-.54***	.14	-.57***	.14
Mixed			-.24**	.09	-.26**	.09	-.26**	.09
Male			.05	.05	.03	.05	.03	.05
Proactive Aggression			.50***	.03	.46***	.03	.47***	.03
CPS					.05	.03	.05	.03
Positive Affect					-.03	.03	-.03	.03
Negative Affect					.13***	.03	.13***	.03
CPS×Positive Affect							.08**	.03
CPS×Negative Affect							-.07**	.02
Random Effect								
Residual	.73***	.04	.55***	.03	.53***	.03	.52***	.03
Intercept	.27***	.04	.17***	.03	.16***	.03	.17***	.03
Model Fit								
-2LL		3241.607		2868.588		2834.114		2815.435
Δ-2LL				373.019***		34.474***		18.679***
Δdf				7		3		2

Note: SES = Socioeconomic status.

*
 $p < .05$ **
 $p < .01$

Table 3
Multilevel regression predicting proactive aggression by Child Psychopathy (CPS), and Parental Positive and Negative Affect

	Model 1		Model 2		Model 3		Model 4	
	b	SE	b	SE	b	SE	b	SE
Fixed Effect								
Intercept	.00	.03	-.24***	.06	-.20***		-.22***	.06
SES			-.01	.00	-.00	.00	-.00	.00
Hispanic			.21*	.09	.18*	.08	.18*	.08
African American			.25**	.09	.23*	.09	.21*	.09
Asian			.20	.14	.16	.14	.20	.14
Mixed			.23**	.09	.19*	.09	.20*	.08
Male			.16**	.05	.12*	.05	.12*	.05
Reactive Aggression			.51***	.03	.46***	.03	.46***	.03
CPS					.07*	.03	.06*	.03
Positive Affect					-.10***	.03	-.10***	.03
Negative Affect					.10***	.03	.09***	.03
CPS×Positive Affect							-.02	.03
CPS×Negative Affect							.11***	.02
Random Effect								
Residual	.75***	.04	.56***	.03	.55***	.03	.53***	.03
Intercept	.25***	.04	.16***	.03	.15***	.03	.15***	.03
Model Fit								
-2LL		3249.295		2877.402		2834.101		2812.709
Δ-2LL				371.893***		43.301***		21.392***
Δdf				7		3		2

Note: SES = Socioeconomic status.

* $p < .05$

100' > d

10' < d
**

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