

Callous/Unemotional Traits and Social-Cognitive Processes in Adjudicated Youths

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ABSTRACT

Objective: There seem to be two dimensions associated with psychopathic traits in youths: a callous/unemotional factor (C/U) and an impulsivity/conduct problems factor (I/CP). This study sought to clarify the nature of these two factors and examine their relation with social-cognitive problems in incarcerated adolescents. **Method:** One hundred sixty-nine male and female adjudicated youths were recruited for participation. Self-report measures and archival data were used to assess psychopathic traits, emotional distress, behavioral dysregulation, social-cognitive processes, and delinquency severity. **Results:** Analyses demonstrated that the I/CP factor is associated with increased levels of dysregulated behavior, while the C/U dimension is related to deficits in empathy. The two factors exhibited differential relations with measures of emotional distress and fearfulness. C/U traits were associated with an increased focus on the positive aspects of aggression and a decreased focus on the negative aspects of hostile acts. Findings remained after controlling for demographic characteristics, abuse history, intellectual abilities, and delinquency severity. **Conclusions:** Results provide support for the two-dimensional nature of psychopathy in youths and suggest that C/U traits are associated with lower emotional distress and a specific social information-processing pattern. The potential implications for working with adjudicated youths exhibiting C/U traits are noted. *J. Am. Acad. Child Adolesc. Psychiatry*, 2003, 42(3):364–371. **Key Words:** psychopathy, social cognition, delinquency, adolescent.

To understand better the etiology of severe antisocial behavior, investigators have extended Hare's two-factor model of psychopathy to younger populations (Frick and Hare, 2001; Hare, 1991). The first factor focuses on callous and unemotional traits that many view as the cornerstone of the psychopathic personality (Cleckly, 1976), while the second dimension focuses on impulsive and antisocial behaviors that are more congruent with definitions of childhood disruptive behavior disorders (American Psychiatric Association, 1994). Using factor analysis, Frick et al. (1994) confirmed that there seem to be two independent, yet over-

lapping factors associated with psychopathic traits in children: a callous/unemotional dimension (C/U) and an impulsivity/conduct problems dimension (I/CP).

The presence of C/U traits may delineate youths with a severe pattern of delinquent behavior that has a unique etiology. Specifically, adjudicated adolescents with high levels of C/U traits are more likely than other incarcerated youths to have childhood-onset antisocial behavior (Silverthorn et al., 2001) and a history of committing violent sex offenses (Caputo et al., 1999). While C/U traits have been related to lower levels of behavioral inhibition, the I/CP dimension has been associated with increased levels of emotional distress (Frick et al., 1999). Other research has shown that youths with C/U traits and conduct problems tend to endorse more thrill-seeking activities (Frick et al., 1994) and display a greater sensitivity to rewards than punishments (O'Brien and Frick, 1996) when compared with youths with conduct problems alone. The behavior problems in juveniles with elevated C/U traits do not seem to be due to dysfunctional parenting practices (Wootton et al., 1997) or low intellectual levels (Loney et al., 1998). On the other hand, the I/CP factor of psychopathy tends to overlap with

Accepted September 23, 2002.

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This study was supported by a University of Alabama GSA award and NRSA from NIDA. Special thanks to Drs. William Chaplin, Leroy Richardson, and Mark Burge.

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DOI: 10.1097/01.CHL.0000037027.04952.DF

DSM symptoms of attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder (Frick et al., 2000). This suggests that the I/CP factor identifies a large set of antisocial juveniles, while the presence of C/U traits delineates a group of children whose antisocial behavior may stem from low levels of fearfulness and a reward-dominant response style.

Psychopathic Traits and Social Cognition

Few studies have examined the social information-processing of children with psychopathic traits. However, examining the social cognitions associated with psychopathic traits in youths is important for several reasons. First, clinical descriptions note that individuals with significant psychopathic traits are of adequate intellect and display no obvious signs of thought disorder, but fail to exercise good judgment in decision making (Newman and Wallace, 1993a). Second, specific social information-processing errors may perpetuate the development and maintenance of delinquent behavior in certain types of antisocial children (Dodge et al., 1997). Finally, several successful cognitive-behavioral interventions for antisocial youths have targeted deviant social cognitions (Kazdin and Weisz, 1998).

There has been some progress conceptualizing the thought processes underlying the behavior of youths with psychopathic traits. For example, investigators have used behavioral paradigms to examine how individuals with psychopathic traits respond to cues of punishment while engaged in goal-directed behavior (O'Brien and Frick, 1996). In a child version of this paradigm, participants play a computerized game in which they earn or lose points each time they press a button (Frick, 1998). To earn the maximum amount of points, children must change an initially established reward-oriented response as the paradigm continues and the rate of punishment increases. O'Brien and Frick (1996) found that clinic-referred children with high levels of C/U traits tended to play more consecutive trials on this task, regardless of whether or not they had significant conduct problems. This suggests that C/U traits are associated with a tendency to become hyperfocused on indicators of rewards and attend less to cues of punishment during goal-oriented computer tasks.

Because youths with significant C/U traits have problems modifying goal-oriented behavior when punished, their persistent conduct problems may be due to difficulties assessing the likelihood that various outcomes will

occur as the result of antisocial behavior. For example, C/U traits may be associated with a tendency to overestimate the probability that positive consequences will result from aggression and underestimate the probability of experiencing negative consequences as the result of violence. Studies have shown that deviant children's expectations that aggressive behavior will produce specific rewarding and/or aversive consequences are divergent from those of normal controls. Aggressive children are more confident that their deviant behavior will produce tangible rewards and reduce adverse treatment from others (Perry et al., 1986, 1990) and are less likely to believe punishment will result from their behavior (Hall et al., 1998). While evidence suggests that these types of deficits may be found primarily in children exhibiting proactive forms of aggression (Dodge et al., 1997), no investigations have looked at the relation between C/U traits and expectations that violent behavior will produce various outcomes.

It is also possible that C/U traits are associated with the values children place on the rewarding and punishing consequences of aggressive behavior. Although outcome expectancies and outcome values are related constructs, the two are at least partially independent. Specifically, two children may hold the same expectancies about the consequences of aggression, but if one child places more value on the positive outcomes of aggression and less on the negative outcomes, then that child will be more likely to behave aggressively (Boldizar et al., 1989). Hall et al. (1998) found that children with higher levels of aggression are less likely to be concerned about punishment and the feelings of others while involved in conflicts. Boldizar et al. (1989) also found that when compared with their nonaggressive peers, aggressive children tend to place more value on achieving a sense of control over the victim and are less concerned about the victim's retaliating or being rejected by peers when using aggression in conflict situations. Consequently, the reward-dominant response style in antisocial children with C/U traits may also be related to a lack of concern for the negative consequences of deviant behavior and a preoccupation with the positive consequences of aggression.

Statement of the Problem

Although the two-factor model of psychopathy has been applied to youths who exhibit antisocial behavior, studies examining the differential validity of these two factors, especially with regard to social-cognitive processes, are still needed. The first goal of this study is to replicate previous

findings regarding the association between each of the factors of psychopathy and various emotional and behavioral variables. In particular, it is hypothesized that higher levels of C/U traits will be associated with lower levels of emotional and cognitive empathy, while the I/CP dimension will be associated with increased behavioral dysregulation. The two factors should also exhibit differential associations with measures of emotional distress, with C/U traits displaying a negative relation with indicators of affective distress and the I/CP dimension exhibiting a positive relation to these measures. Because the C/U dimension has been related to a reward-dominant response style (O'Brien and Frick, 1996), the second goal of this study is to examine the relation between C/U traits and various social-cognitive processes. It is hypothesized that higher levels of C/U traits will be associated with increased expectations and values associated with the positive outcomes of aggressive behavior and decreased expectations and values associated with the negative consequences of hostile actions.

METHOD

Participants

The sample consisted of 169 adjudicated juveniles (97 males and 72 females) residing at two gender-specific residential facilities in close proximity to each other in the southeastern United States. The majority of the participants were African American ($n = 117$, 69%), with the remainder being white ($n = 50$, 30%), Asian ($n = 1$, 0.5%), and Latino ($n = 1$, 0.5%). Most juveniles were in their mid teens (mean = 15.81, SD = 1.26) and had been incarcerated for several months (mean = 5.68, SD = 5.95). Client file information revealed that the participants' average Full Scale IQ scores were low (mean = 78.94, SD = 14.15). Nearly one half of participants were identified as gang-involved ($n = 77$, 46%), and many reported a history of physical and/or sexual abuse ($n = 37$, 22%). According to court records, participants had a history of committing several criminal offenses (mean = 6.4, SD = 4.6).

Procedure

Adolescents who had been incarcerated for 30 days or longer were invited to participate in the study. Potential participants were read a consent form that described the basic procedures of the study and explained that participation was voluntary, the information gathered was confidential, and refusal to participate would not result in disciplinary action. Youths were allowed to ask questions about the study before agreeing to participate. Of the 171 eligible offenders, only 2 males declined participation because "[they did] not feel like answering a lot of questions." After obtaining consent, the primary author and an assistant administered the questionnaires to participants during small-group sessions (5 to 12 participants). Items were read to participants while they responded on their own questionnaires. Similar procedures have been used successfully with chronic violent offenders with low intellectual abilities (Dodge et al., 1997) and with youths in an outpatient psychiatric clinic (Dunn et al., 1997). Before scoring the questionnaires, the primary investigator performed a detailed client file review to gather demographic information, criminal his-

tory data, and psychoeducational testing results. This information was matched with participants' questionnaires through the use of identification numbers.

Measures

Demographic and Background Variables. Information that was originally obtained by Department of Youth Services (DYS) staff during intake interviews with participants and their families was coded from each participant's case file (e.g., age, ethnicity, length of incarceration, and prior offense history). Juveniles were classified as "gang-involved" if they acknowledged gang membership during the DHS intake interview or court records indicated that they had committed gang-related crimes. An intake screen question that asked juveniles "Were you ever abused physically or sexually?" was used to code for the presence of prior abuse. Upon admission to the detention facility, each juvenile was administered either the WAIS-III or the WISC-III. To control for the potential confounding effects of IQ, each participant's Full Scale IQ score was recorded.

Antisocial Process Screening Device. The Antisocial Process Screening Device (APSD) (Frick and Hare, 2001), a 20-item rating scale, was adapted from Hare's Psychopathy Checklist-Revised (Hare, 1991) to measure psychopathic traits in youths. Although the APSD was originally used to assess these traits based on teacher and parent report in preadolescent children (Frick et al., 1994), in this sample the adolescent self-report was used for several reasons. First, research suggests that the validity of self-report for assessing most types of psychopathology increases from childhood to adolescence, while the validity of parent and teacher report decreases during this time (Kamphaus and Frick, 1996). Second, many participants had spent only a short time in the detention facility, limiting the ability of teachers and staff to adequately assess their personality. Finally, the self-report version of the APSD has successfully been used to identify subgroups of offenders in other adolescent samples (Caputo et al., 1999; Silverthorn et al., 2001).

Factor analysis of the teacher and parent versions of the APSD revealed two correlated factors similar to those identified on the Psychopathy Checklist-Revised (Frick et al., 1994). The first factor is a callous/unemotional dimension that consists of six items related to a lack of remorse and guilt, shallow and constricted affect, a lack of empathy, apathy toward school, and superficial charm. The second factor is an impulsivity/conduct problems dimension that contains 10 items pertaining to reckless and antisocial behavior, emotional volatility and impulsivity, and a tendency to be easily bored. Participants rate each item on a 3-point scale (0 = "not true at all" to 2 = "definitely true"), with some items being reverse-scored. Subscale scores were created by averaging across items that loaded on the C/U and I/CP dimensions in a previous factor analysis (Frick et al., 1994). One item from the I/CP scale (i.e., "you keep the same friends") was eliminated because it was negatively correlated with the other items (interitem $r = -0.01$). Modest reliability coefficients for the I/CP factor ($\alpha = .61$) and the C/U factor ($\alpha = .52$) were obtained.

Abbreviated Dysregulation Inventory. The Abbreviated Dysregulation Inventory (Mezzich et al., 1997), a self-report measure, was designed to assess different types of dysregulation in adolescents. For the current study, the behavioral dysregulation subscale was used (e.g., "I get very fidgety after a few minutes if I am supposed to sit still"). Participants rated each item on a 4-point scale (0 = "never true" to 3 = "always true"), and scale items were averaged so that higher scores represented increased levels of dysregulation. Previous studies have reported adequate internal consistency coefficients for each of the subscales (Mezzich et al., 1997). In the current sample, the internal consistency of the behavioral dysregulation subscale was good ($\alpha = .80$).

Interpersonal Reactivity Index. The Interpersonal Reactivity Index (Davis, 1983), a self-report instrument, was designed to measure cognitive and affective dispositions related to empathy. The subscales measuring perspective-taking (e.g., "I try to look at everybody's side of a disagreement before making a decision"), empathic concern (e.g., "I often have tender concerned feelings for people less fortunate than me"), and personal distress in response to stressful situations (e.g., "Being in a tense emotional situation scares me") were used. Items were rated on a 5-point scale (1 = "not true about me" to 5 = "extremely true about me"), and scale items were averaged so that higher scores represent increased levels of the attribute assessed. This measure has displayed acceptable internal consistency and evidence of predictive and convergent validity (Davis, 1983; Davis and Franzoi, 1991). Two items from the perspective-taking factor (interitem $r = -0.07$ and -0.02) and two items from the personal distress scale (interitem $r = -0.08$ and 0.05) were eliminated because of low correlations with the other subscale items. Reliability coefficients for the three scales were modest and slightly lower than those reported in previous studies ($\alpha = .66-.73$).

Early Adolescent Temperament Measure. The Early Adolescent Temperament Measure (Capaldi and Rothbart, 1992) was designed as a self-report instrument of temperament in early adolescence. The seven-item fearfulness subscale was used in the current study as the measure of behavioral inhibition. Items consisted of a general statement (e.g., "I am nervous of some of the youth at school who push people into lockers and throw your books around") followed by a 5-point Likert scale asking participants to indicate how true each statement was for them (1 = "very false" to 5 = "very true"). Items were averaged, with higher scores indicating increased levels of temperamental fear. Adequate internal consistency and convergent validity have been reported for this measure using participants aged 11–24 years (Capaldi and Rothbart, 1992). The internal consistency of the fearfulness subscale in the current sample was modest ($\alpha = .59$).

Outcome Expectations Questionnaire. This version of the Outcome Expectations Questionnaire (OEQ) (Perry et al., 1986) consisted of eight brief vignettes designed to measure juveniles' expectations that aggressive behavior against a same-sex peer would produce various outcomes. In half of the vignettes participants imagined using aggressive behavior to obtain tangible rewards from a same-sex peer (e.g., physically threatening a peer to get his/her money), and in the other four vignettes participants were asked to imagine using aggression to retaliate against aversive treatment (e.g., kicking a peer in the leg because he/she tripped you). After hearing each vignette, participants were asked to rate the likelihood that various outcomes would occur on a 4-point Likert scale (1 = "very sure the outcome would not occur" to 4 = "very sure the outcome would occur"). For vignettes depicting the use of aggression to obtain a tangible reward, participants were asked to rate the likelihood that they would successfully obtain the desired object, be punished for their actions, and gain a sense of dominance. The same questions were asked for vignettes depicting the use of aggression in retaliation against aversive behavior, except participants rated the likelihood that they would successfully reduce the aversive treatment rather than obtain tangible rewards. Items on the scales were averaged, with higher scores indicating increased expectations that a particular outcome would occur. Studies using similar measures were able to discriminate antisocial youths from controls (Hall et al., 1998; Perry et al., 1990). The reliability of the outcome expectations subscales were variable ($\alpha = .56-.83$).

Outcome Values Questionnaire. This version of the Outcome Values Questionnaire (Boldizar et al., 1989) consists of eight brief vignettes designed to assess the values that children place on the outcomes of aggression against a same-sex peer. The format of the stories was the same as that of the OEQ. In particular, participants were presented

with four vignettes depicting the use of aggression to obtain tangible rewards and four scenarios describing the use of aggression in retaliation against aversive behavior. After each vignette, participants were asked to rate how much they would care if specific outcomes occurred as a result of their behavior on a 4-point Likert scale (1 = "not care at all" to 4 = "really care a lot"). Similar to the OEQ, participants were asked to rate how much they cared about obtaining tangible rewards, reducing the aversive treatment of a provocative peer, being punished for their actions, and gaining a sense of dominance. Items making up each scale were averaged, with higher scores indicating increased importance being placed on the outcome. Similar measures have discriminated between aggressive and nonaggressive youths (Hall et al., 1998). Internal consistency coefficients for the outcome values subscales were variable ($\alpha = .56-.91$).

Statistical Analysis

For descriptive purposes, analyses investigating gender differences between the male and female participants on all study variables were conducted using two-tailed independent samples t tests. Because the primary purpose of this investigation was to examine the unique relation between each factor of psychopathy and various constructs, each dependent variable was then independently regressed on to the C/U and I/CP factors. As a result, the β values reported for the C/U and I/CP dimensions represent the relation between each factor of psychopathy and dependent variable after controlling for the effects of the other factor. The overall R^2 reported represents the total amount of variance the C/U and I/CP factors accounted for in the dependent variable. This technique for evaluating the relation between the C/U and I/CP dimensions and various constructs after controlling for overlap between the two factors has provided useful information about the divergent nature of these constructs in past research (Frick et al., 1999, 2000; Wootton et al., 1997). After conducting the primary regression analyses, post hoc tests were conducted to determine whether the significant effects remained after controlling for demographic characteristics (i.e., gender, minority status, age), history of abuse (physical/sexual), intellectual abilities (Full Scale IQ), and the severity of the participants' criminal behavior (i.e., number of prior offenses, length of incarceration, gang involvement).

RESULTS

Descriptive statistics for study variables are presented in Table 1. In comparison with the females, male participants tended to be younger ($t_{167} = -4.92, p < .001$), tended to have more prior offenses ($t_{165} = 2.71, p < .01$), tended to have lower Full Scale IQs ($t_{167} = -2.62, p < .05$), and were more likely to be gang-affiliated ($\chi^2[1, N = 169] = 5.23, p < .05$) and minorities ($\chi^2[1, N = 169] = 6.78, p < .01$). Females were more likely to report a history of physical/sexual abuse ($\chi^2[1, N = 160] = 19.10, p < .001$) and had higher scores on the I/CP dimension of psychopathy ($t_{167} = -2.04, p < .05$). Similar to previous findings (Davis, 1983), females also exhibited higher scores than males on subscales measuring empathic concern ($t_{167} = -3.92, p < .001$), perspective-taking ($t_{167} = -2.08, p < .05$), and personal distress ($t_{167} = -2.23, p < .05$).

TABLE 1
Means and Standard Deviations for Study Variables

Measure and Variable	Full Sample (N = 169)		Females (n = 72)		Males (n = 97)	
	Mean	(SD)	Mean	(SD)	Mean	(SD)
Demographic/background						
Age	15.81	(1.26)	16.33 ^a	(1.35)	15.43 ^b	(1.04)
Full Scale IQ	78.94	(14.15)	82.08 ^a	(13.53)	76.24 ^b	(14.18)
Prior offenses	6.35	(4.64)	4.72 ^a	(2.80)	6.40 ^b	(7.41)
Months incarcerated	5.68	(5.95)	5.25	(3.79)	7.18	(5.05)
Gang status (% involved)	48		38 ^a		56 ^b	
Ethnicity (% minority)	70		59 ^a		78 ^b	
Physical/sexual abuse (% abused)	22		39 ^a		10 ^b	
Antisocial Process Screening Device						
Callous/unemotional traits	0.93	(0.36)	0.89	(0.35)	0.97	(0.37)
Impulsivity/conduct problems	1.11	(0.33)	1.17 ^a	(0.32)	1.06 ^b	(0.33)
Interpersonal Reactivity Index						
Empathetic concern	3.36	(0.76)	3.61 ^a	(0.68)	3.17 ^b	(0.76)
Perspective-taking	2.86	(0.92)	3.03 ^a	(0.87)	2.73 ^b	(0.94)
Personal distress	2.61	(0.85)	2.78 ^a	(0.87)	2.49 ^b	(0.81)
Early Adolescent Temperament						
Fearfulness	2.75	(0.72)	2.71	(0.72)	2.77	(0.73)
Abbreviated Dysregulation Inventory						
Behavioral dysregulation	1.37	(0.61)	1.39	(0.61)	1.36	(0.62)
Outcome Expectations Questionnaire						
Tangible rewards	3.03	(0.62)	3.10	(0.55)	2.97	(0.66)
Reduction of aversive treatment	2.74	(0.71)	2.64	(0.74)	2.82	(0.69)
Punishment	2.44	(0.64)	2.53	(0.62)	2.37	(0.65)
Dominance	2.86	(0.67)	2.90	(0.68)	2.84	(0.66)
Outcome Values Questionnaire						
Tangible rewards	1.94	(0.79)	1.85	(0.76)	2.01	(0.81)
Reduction of aversive treatment	2.38	(0.79)	2.36	(0.76)	2.39	(0.81)
Punishment	2.60	(0.96)	2.71	(0.95)	2.52	(0.96)
Dominance	2.03	(0.87)	2.04	(0.85)	2.02	(0.89)

Note: All group difference tests were conducted using *t* tests or χ^2 analyses. When superscripts differ, groups are significantly different ($p < .05$).

Regression Analyses

The C/U and I/CP dimensions of psychopathy were positively correlated ($r = 0.48, p < .001$). Several regression analyses were conducted to clarify the nature of the C/U and I/CP dimensions of psychopathy and replicate previous research findings (Table 2). As expected, only the C/U factor exhibited a significant negative relation to the empathetic concern and perspective-taking subscales when both psychopathy dimensions were entered into a regression equation. On the other hand, the I/CP dimension was positively related to the behavioral dysregulation subscale, while the C/U factor was not significantly related to this measure in a regression analysis. Similar to previous research findings, the two factors of psychopathy exhibited divergent relations to measures of emotional distress. Specifically, the I/CP factor exhibited a positive relation to measures of personal distress and

fearfulness, while the C/U dimension was negatively related to these measures when both factors were entered as predictors in regression analyses. All significant effects remained after controlling for demographic characteristics (i.e., gender, minority status, age), history of abuse (physical/sexual), intellectual abilities (Full Scale IQ), and the severity of the participants' criminal behavior (i.e., number of prior offenses, length of incarceration, gang involvement).

Another set of regression analyses was conducted to examine the relation between both factors of psychopathy and measures of social cognition (Table 3). Regression results revealed that the C/U factor was positively related with the outcome expectation measures of tangible rewards and dominance, and negatively related to expectations that aggression would result in punishment. Similarly, C/U traits were positively related to the outcome values

TABLE 2Regression Analyses Using the C/U and I/CP Scales to Predict Empathy, Distress, and Dysregulation ($N = 169$)

Measure and Variable	I/CP Factor			C/U Factor			R^2
	B	SE B	β	B	SE B	β	
Interpersonal Reactivity Index							
Empathetic concern	0.20	0.17	.09	-1.22	0.15	-.59***	0.30***
Perspective-taking	-0.05	0.22	-.02	-1.18	0.20	-.47***	0.23***
Personal distress	0.82	0.22	.32***	-0.70	0.20	-.30***	0.10***
Early Adolescent Temperament							
Fearfulness	0.37	0.19	.17*	-0.57	0.17	-.29***	0.06**
Dysregulation Inventory							
Behavioral dysregulation	0.99	0.14	.53***	0.02	0.13	.01	0.28***

Note: I/CP = impulsivity/conduct problems; C/U = callous/unemotional traits.

* $p < .05$; ** $p < .01$; *** $p < .001$.

subscales of tangible rewards and dominance, and negatively related to values pertaining to punishment as a consequence of aggression. After controlling for the effects of C/U traits, the I/CP dimension was not significantly related to the outcome expectations or outcome values subscales. In addition, both factors displayed nonsignificant relations with the reduction of aversive treatment subscales on both the outcome expectations and outcome values measures. All significant effects remained after controlling for demographic characteristics (i.e., gender, minority status, age), history of abuse (physical/sexual), intellectual abilities (Full Scale IQ), and the severity of the participants' criminal behavior (i.e., number of prior offenses, length of incarceration, gang involvement).

DISCUSSION

The results supported several hypotheses regarding the nature of the two factors of psychopathy and the rela-

tion between C/U traits and social-cognitive processes. Consistent with conceptualizations of psychopathic traits in children, the C/U factor was strongly associated with deficits in cognitive and emotional empathy, while the I/CP dimension was more strongly related to behavioral dysregulation. The two factors of psychopathy also exhibited divergent relations to scales measuring emotional distress in response to stressful and threatening situations. Higher C/U traits were related to increased expectations and values associated with the positive consequences of aggression (i.e., tangible rewards, dominance) and decreased expectations and values associated with the negative consequences of deviant behavior (i.e., punishment), even after controlling for the effects of the I/CP dimension, demographic characteristics, history of abuse, intellectual abilities, and delinquency severity.

The differential relationship between the two factors of psychopathy in predicting emotional distress to volatile situations is consistent with prior investigations (Frick

TABLE 3Regression Analyses Using the C/U and I/CP Scales to Predict Social Cognition ($N = 169$)

Measure and Variable	I/CP Factor			C/U Factor			R^2
	B	SE B	β	B	SE B	β	
Outcome Expectancies							
Tangible rewards	-0.06	0.16	-.03	0.62	0.14	.37***	0.12***
Reduction of aversive treatment	-0.26	0.19	-.12	0.30	0.17	.15	0.02
Punishment	-0.22	0.16	-.11	-0.49	0.15	-.28**	0.12***
Dominance	-0.02	0.18	-.01	0.48	0.16	.26**	0.07**
Outcome Values							
Tangible rewards	0.18	0.20	.07	0.66	0.18	.30***	0.12***
Reduction of aversive treatment	0.19	0.21	.08	0.28	0.19	.13	0.03
Punishment	-0.25	0.24	-.08	-0.94	0.21	-.36***	0.16***
Dominance	0.33	0.22	.12	0.65	0.20	.27**	0.12***

Note: I/CP = impulsivity/conduct problems; C/U = callous/unemotional traits.

** $p < .01$; *** $p < .001$.

et al., 1999). To explain this effect, Frick noted that the I/CP dimension has been associated with dysfunctional family backgrounds, which may cause youths to become hypervigilant in very emotional situations. The C/U dimension, on the other hand, has been associated with an emotional processing deficit that may help to buffer the amount of personal distress experienced by youths during threatening events. The negative relation between C/U traits and temperamental fearfulness is also congruent with conceptualizations of empathy development in children. Specifically, researchers have theorized that for empathy development to occur, children must initially experience self-focused emotional distress when they are punished for transgressions or when they see others in pain (Blair, 1999; Davis and Franzoi, 1991; Kochanska, 1995). While the cross-sectional nature of the current study prevents a direct test of this theoretical model, the results do show that youths with low levels of distress in response to threat tend to have higher levels of callousness.

Consistent with research linking C/U traits to a reward-dominant response style, higher levels of C/U traits were associated with increased expectations and values pertaining to the positive aspects of aggression and a decreased regard for the negative consequences of aggression. While C/U traits were associated with an increased focus on using aggression to obtain tangible rewards and dominate others, there was not a significant relation between C/U traits and the use of aggression to prevent future conflict with a provocative peer. It may be that C/U traits are only associated with expectations and values pertaining to the immediate benefits of using aggression, rather than the more delayed benefit of using aggression to prevent future attacks. However, youths with higher C/U traits have lower expectancies and values related to factors that inhibit aggressive behavior, such as concerns about being punished. These results are consistent with the theory that children with C/U traits experience less fear when they are punished for deviant transgressions, making it difficult for them to attend to and encode cues associated with the negative consequences of aggression (Frick, 1998; Frick et al., 1994). Because fear of punishment is also believed to modulate an individual's responsiveness to reward cues (Newman and Wallace, 1993b), low levels of fearfulness may also cause youths to place more focus on the positive consequences of aggression. Given the limitations of the current study and previous research on C/U traits, this interpretation should be viewed as speculative pending further research.

Limitations

These findings need to be interpreted cautiously because of several limitations. First, the cross-sectional nature of the data makes it impossible to fully test models regarding the development of C/U traits. Also, most of the variables used in this study were assessed through self-report. Although the use of self-report measures may have artificially inflated variable associations owing to shared method variance, this effect would have influenced all relations in this study equally and could not account for the differential relations found for the two dimensions of psychopathy. In addition, several subscales used in this study had low internal consistency coefficients, so the significance tests reported should be viewed as conservative estimates. However, given that both factors of psychopathy had similar internal consistencies, there is no reason to believe that differences in measurement error caused the differential relations. Another limitation is that this study was conducted solely with incarcerated adolescents, so the results cannot be generalized to youths exhibiting antisocial behavior in the community. Finally, the term *psychopath* is often viewed as a pejorative term that implies a stable, unchangeable, and biologically based personality trait used to delineate a subgroup of delinquents who will become lifelong criminals. These conclusions cannot be made about the youths in this study. Therefore, the presence of psychopathic traits in children should not be used to make decisions about adjudication or sentencing in forensic settings. Instead, this investigation is an attempt to apply the construct of psychopathy to youths to identify characteristics that may underlie and maintain the antisocial behavior of some delinquent juveniles.

Clinical Implications

These results provide evidence that C/U traits designate a subgroup of delinquent youths who have a number of distinct temperamental and social-cognitive characteristics. Although limitations with the current study and previous research on childhood psychopathic traits prevent us from making firm recommendations for dealing with juvenile offenders with C/U traits, novel approaches to treatment may be needed. For example, many interventions for antisocial youths have focused on problems in the child's emotional and behavioral regulation and/or deficits in parents' use of effective socialization strategies (Frick, 1998). They do not focus on the processes that may be involved in the development and maintenance of behavior problems in children with C/U

traits. Previous discussions of treatment for youths with C/U traits have focused on the need to use approaches that emphasize reward-oriented strategies for behavior change and capitalize on the child's self-interest for motivating behavior change (Frick, 2001). Unfortunately, many juvenile courts across the country have moved toward sentencing youths to punitively oriented boot camps and detention facilities (Grisso and Schwartz, 2000), which may have little impact on juveniles with C/U traits given their lack of concern about being punished for deviant behavior. This conceptualization is consistent with the notion that treatments for antisocial youths should be individualized so they address the distinct processes that can lead to problem behavior (Frick, 2001; Henggeler et al., 1998). While these implications are tentative and in need of future study, the current study provides additional clues as to the expectancies and values placed on the use of aggression in social situations that may need to be addressed in interventions with youths who exhibit C/U traits.

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