

Ineffective Parenting and Childhood Conduct Problems: The Moderating Role of Callous–Unemotional Traits

Jane M. Wootton, Paul J. Frick, Karen K. Shelton, and Persephanie Silverthorn
University of Alabama

A sample of 6- to 13-year-old clinic-referred ($n = 136$) and volunteer ($n = 30$) participants was investigated for a potential interaction between the quality of parenting that a child receives and callous–unemotional traits in the child for predicting conduct problems. Ineffective parenting was associated with conduct problems only in children without significant levels of callous (e.g., lack of empathy, manipulateness) and unemotional (e.g., lack of guilt, emotional constrictedness) traits. In contrast, children high on these traits exhibited a significant number of conduct problems, regardless of the quality of parenting they experienced. Results are interpreted in the context of a model that proposes that callous–unemotional traits designate a group of children with conduct problems who have distinct causal factors involved in the development of their problematic behavior.

Hare, Harpur, and their colleagues developed a two-factor model of psychopathy that has been shown to be useful for studying severe and chronic patterns of adult antisocial behavior (Hare, Hart, & Harpur, 1991; Harpur, Hare, & Hakstian, 1989). The model specifies two partially independent psychological dimensions: One dimension includes the interpersonal characteristics (such as superficial charm, callous use of others, absence of empathy) and emotional style (absence of guilt, shallow emotions, lack of anxiety) that have been hallmarks of the psychopathic personality (see Cleckley, 1976; McCord & McCord, 1964). The second dimension includes the unstable and antisocial lifestyle (such as multiple marriages, poor employment history, multiple arrests, aggression) that defines antisocial personality disorder (American Psychiatric Association, 1994).

Several studies have shown that these two dimensions are separable through factor analysis and, more importantly, they have different correlates that could suggest divergent etiologies (Hare et al., 1990; Harpur, Hakstian, & Hare, 1988; Harpur et al., 1989). This two-factor model was tested in clinic-referred children and, consistent with the findings in adult samples, two separable psychological dimensions emerged in factor analyses (Frick, O'Brien, Wootton, & McBurnett, 1994). One dimension involved a callous–unemotional (CU) interpersonal style, and the second dimension involved poor impulse control and conduct problems. This second dimension was highly associated with traditional behavioral definitions of conduct problems such as definitions of oppositional defiant disorder and conduct disorder (CD) from the revised third edition of the *Diagnostic and*

Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association, 1987).

An important question is how to conceptualize the relation between these two psychological dimensions in both adults and children (Lilienfeld, 1994). Hare and Harpur refer to a “two-dimensional conceptualization of psychopathy” implying that the construct of psychopathy encompasses both dimensions (Harpur et al., 1989). However, there are two limitations to this conceptualization. First, it does not address how to conceptualize individuals who show one but not the other dimension. In both adults (Hare et al., 1991) and children (Frick et al., 1994), these two dimensions are correlated between .40 and .50. Although clearly these correlations are greater than would be expected by chance, they also suggest that a significant number of individuals will show characteristics of only one dimension. Second, this basic conceptualization does not account for potential differences in etiology for the two dimensions. Such differences are clearly plausible, given the differential correlates found in past studies of both children (Frick et al., 1994) and adults (Hare et al., 1991).

In this study, we tested predictions made from a theoretical model that begins to address these core issues for understanding these two psychological dimensions. We propose that CU traits are related to a temperamental style characterized by a lack of fearful inhibitions (Hoffman, 1983; Kochanska, 1993), which makes a child less responsive to cues of punishment (Eysenck & Gudjonsson, 1989; O'Brien & Frick, 1996). The development of CU traits then places a child at high risk for showing antisocial behavior. An absence of empathy, a lack of guilt, and a callous use of others make a child more likely to act against parental and societal norms and to violate the rights of others.

However, not all children who develop conduct problems show CU traits (Frick et al., 1994) or the temperamental style that, we propose, underlies these traits (Lahey, Hart, Pliszka, Applegate, & McBurnett, 1993; O'Brien & Frick, 1996). Therefore, we view CU traits as designating a group of children with conduct problems who develop their problematic behavior through a process that is somewhat distinct from other children

Jane M. Wootton, Paul J. Frick, Karen K. Shelton, and Persephanie Silverthorn, Department of Psychology, University of Alabama.

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Correspondence concerning this article should be addressed to Paul J. Frick, Department of Psychology, University of Alabama, Box 870348, Tuscaloosa, Alabama 35487. Electronic mail may be sent via Internet to pflick@gp.as.ua.edu.

with conduct problems. For example, parental socialization practices have been viewed in most causal theories as critical to the development of conduct problems (e.g., Patterson, Reid, & Dishion, 1992). This emphasis on parenting practices is based on a vast body of research that has documented an association between ineffective parenting practices and the development of conduct problems in children (see Frick, 1994; Loeber & Stouthamer-Loeber, 1986).

An important prediction that follows from our theoretical model is that parental socialization practices will interact with CU traits to predict the development of conduct problems. In children with CU traits, the development of conduct problems will be relatively independent of parenting practices because their unique motivational and affective style makes them relatively unresponsive to typical socialization practices (see Kochanska, 1991; Lykken, 1995). In contrast, the vast majority of children who do not show this temperamental style will be highly susceptible to inadequacies in their rearing environment (Lykken, 1995). Therefore, ineffective parenting practices are predicted to be more strongly associated with conduct problems in children without CU traits, in whom problematic parenting may play a greater causal role in the development of behavior problems.

In the present study, we tested the hypothesized interaction in a large sample of elementary school-age children. Key methodological features included assessing the dimensions of parental socialization practices that have been most consistently linked to antisocial behavior (e.g., parental involvement, parental monitoring and supervision, harsh and inconsistent discipline; Frick, 1994; Loeber & Stouthamer-Loeber, 1986) and assessing them using multiple methods. The majority of the sample were consecutive child referrals to an outpatient mental health clinic, consisting largely of children with disruptive behavior disorders. However, we were concerned that such a sample would be restricted in the range of scores on our measure of parenting practices, being skewed toward more problematic parenting. Therefore, we augmented this clinic sample with a community sample of children that was comparable with the clinic sample on age, gender, and ethnicity to increase the range of parenting scores.

Method

Participants

Participants were 166 children between the ages of 6 and 13 and their primary female caretakers who were recruited from two sources. The first group comprised 136 children and parents drawn from 156 consecutive referrals to a diagnostic and referral service of a university-based outpatient mental health clinic. Children who scored in the mentally retarded range ($n = 8$) or who were diagnosed with autism ($n = 1$) were excluded. Also, children who had not lived continuously with a female caretaker within the previous month ($n = 11$) were excluded. The mean age of the clinic sample was 8.6 years ($SD = 2.1$), and the sample was predominantly male (76%) and White (76%). The children tended to come from families in the lower to lower-middle socioeconomic statuses, with a mean score on Duncan's Socioeconomic Index (SEI; Hauser & Featherman, 1977) of 37.4 ($SD = 24.6$).

The second sample was a community volunteer sample ($n = 30$) that was recruited to be similar to the clinic sample in age, gender, and ethnicity. All participants in the volunteer sample had to have lived with

a female caretaker continuously for the past 2 months. To enhance the comparability of the volunteer sample to the clinical sample, we conducted recruitment in two phases. The first phase was through newspaper announcements and presentations at parent-teacher association meetings at local schools. Parents of children ages 6 to 13 were asked to participate in a study of "typical parenting practices" with their children. All volunteers were accepted at this stage. The next phase of recruitment involved targeting specific schools to recruit families of African American children that were underrepresented in the first phase, and only families with male children were recruited at this stage. As a result of these recruitment procedures, the community sample did not differ from the clinic sample on mean age of the sample ($M = 9.1$, $SD = 2.5$), gender composition (70% boys), or ethnicity (87% White). However, the mean Duncan's SEI of the community sample was significantly higher ($M = 49.6$, $SD = 23.8$) than the mean of the clinic sample.

Measures

Conduct problem symptoms. Children in the clinic sample were assessed for all oppositional defiant disorder (ODD) and CD symptoms included in *DSM-III-R* criteria (American Psychiatric Association, 1987).¹ The symptoms were assessed using a highly structured psychiatric interview, the National Institute of Mental Health Diagnostic Interview Schedule for Children—Version 2.3 (DISC-2.3; Shaffer, Fisher, Piacentini, Schwab-Stone, & Wicks, 1991), which was administered to each child's parent (parent version; DISC-P) and teacher (teacher version; DISC-T). Interviews were administered by advanced graduate students in clinical psychology or a licensed psychologist trained in the assessment of childhood psychopathology. All interviewers were trained in standardized DISC administration procedures. The same interviewer conducted the DISC-P and DISC-T for each child.

Following the procedure recommended by Piacentini, Cohen, and Cohen (1992) for combining information from different informants, a symptom was considered present if it was endorsed by either the child's parent or teacher. The correlation between parent and teacher report of conduct problem symptoms was .34 ($p < .001$), which is comparable with the cross-informant correlations found in past studies of child psychopathology (see Achenbach, McConaughy, & Howell, 1987). Forty percent of the clinic sample met criteria for either ODD or CD, using this method of combining parent and teacher report.

Because we could not provide financial incentives to the community volunteers, conducting the lengthy DISC interviews in the volunteer sample was not feasible. However, an analogous assessment of conduct problem symptoms was conducted using the Disruptive Behavior Disorders (DBD) Rating Scale (Pelham, Gnagy, Greenslade, & Milich, 1992), which was completed by each child's parent and teacher. The DBD Rating Scale asks the respondent to rate on a 4-point scale (0 = not at all to 3 = very much) the degree to which a child displays each symptom of CD and ODD from the *DSM-III-R* criteria. The DBD

¹ Data collection began before the publication of the fourth edition of the *DSM* (*DSM-IV*; American Psychiatric Association, 1994). Therefore, we used the symptom list from the earlier *DSM-III-R* criteria for ODD and CD. However, it is quite likely that our results will be applicable to *DSM-IV* criteria as well. First, in general, there appears to be a high overlap between the two definitions with over 90% of the children diagnosed by one criteria also being diagnosed with the other (Lahey et al., 1994). Second, we used the combined ODD and CD symptom lists in all analyses. The *DSM-IV* field trials indicated that most of the children who met *DSM-III-R* criteria for CD, but not the more stringent *DSM-IV* criteria, exhibited sufficient conduct problems to meet criteria for ODD. Therefore, by using continuous symptom lists we likely captured the variations in severity that results in discrepancies between the two versions of the *DSM*.

Rating Scale and its *DSM-III* (American Psychiatric Association, 1980) predecessor, the SNAP Checklist (Atkins, Pelham, & Licht, 1985), have been widely used in research to assess conduct problem symptoms. To have analogous data in both the clinic and volunteer samples, symptoms were considered present if they were rated as being present either *pretty much* (2) or *very much* (3) by either the child's parent or teacher. Seventeen percent of the volunteer sample met *DSM-III-R* criteria for either ODD or CD, which was significantly different from the rate in the clinic sample, $\chi^2(1, N = 166) = 6.02, p < .01$.

Psychopathy Screening Device (PSD). The PSD (Frick & Hare, in press) is a 20-item behavior rating scale that was completed by each child's parent and teacher in both the normal and clinic samples. The PSD was designed to be a childhood extension of the Psychopathy Checklist—Revised (PCL-R; Hare, 1991), which has been widely used to measure psychopathic traits in adults (Hare, 1985). Each item on the PSD is scored 0 (*not at all true*), 1 (*sometimes true*), or 2 (*definitely true*). Frick et al. (1994) found that the PSD contained two factors in school-aged children. The CU factor contained six items tapping the interpersonal and affective dimensions of psychopathy such as lack of guilt, absence of empathy, and emotional constrictedness. The Impulsivity—Conduct Problems factor contained 10 items tapping overt behavioral dimensions of conduct problems and poor impulse control.

A scale derived from items loading on the CU factor was used in the present study to assess CU traits. A sum of parent and teacher ratings on this scale was used in all analyses. In our sample, parent and teacher reports were correlated $r = .36 (p < .001)$. Also, the coefficient alpha for this scale based on combined parent and teacher report was .78. As additional evidence for the reliability of this scale, the 1-week test-retest reliability of the teacher version of the scale was .73 ($p < .001$) in a separate community sample of elementary school-age children (McBurnett, Tamm, Nowell, Piffner, & Frick, 1994).

Scores on the CU scale were dichotomized for all analyses for several theoretical reasons. Many researchers studying psychopathy in adults have considered psychopathy as taxonic (i.e., categorical variable), in which people high on the relevant traits seem to be etiologically distinct from others lower on the distribution of traits (see Hare et al., 1991; Newman & Wallace, 1993). Further, in our theory outlined previously, we have hypothesized that individual differences in behavioral inhibition may play a major role in the development of CU traits. Kagan, Reznick, and Gibbons (1989) provided persuasive data that individual differences in the two extremes of behavioral inhibition may best be considered as qualitative distinctions. Finally, our specific hypothesis proposed a different association between parenting and conduct problems in children high on CU traits from children lower on the distribution of traits, which is more directly tested using a taxonic approach. Therefore, a score of 10 on the combined parent and teacher reports on CU scale was used to delineate "elevations." This score designates the upper quartile of the full combined sample and corresponds to the 95th percentile of the volunteer sample.

Alabama Parenting Questionnaire (APQ). The APQ (Frick, 1991) includes 35 items assessing five parenting constructs: Ten items assess parental involvement (e.g., "How often do you play games or do other fun things with your child?"), 6 items assess parental use of positive reinforcement (e.g., "How often do you compliment your child when he or she has done something well?"), 10 items assess parental monitoring and supervision (e.g., "How often is your child at home without adult supervision?"), 6 items assess consistency in applying discipline (e.g., "How often do you threaten to punish your child and then do not actually punish him or her?"), and 3 items assess parental use of corporal punishment (e.g., "How often do you spank your child with your hand when he or she has done something wrong?").

The APQ has four assessment formats: parent and child global report forms, and parent and child telephone interviews. The child report versions have proven to be unreliable for children under age 9 (Shelton,

Frick, & Wootton, in press). Therefore, only the two parental report versions were included in this study. Items on the global report forms are rated on a 5-point frequency scale (1 = *never* to 5 = *always*) to represent the "typical" frequency in the home. Each item on the telephone interview request the respondent to estimate the number of occurrences of that behavior over the previous 3 days. The average frequency of each item across three or four interviews was used in analyses. Data for a participant were not used unless he or she completed at least three of the four scheduled interviews, which led to the elimination of nine phone interviews in the clinic sample. The APQ interviews were administered by research assistants trained in standardized administration procedures. Research assistants who administered the APQ were aware of whether the child was a member of the clinic or volunteer sample. However, the assistants had not been informed of the reason the child was referred to the clinic, the number of conduct problem symptoms exhibited by the child, and his or her scores on the CU scale of PSD.

For the purposes of this study, the scales of the APQ were combined into composite indices of parenting with separate indices derived for the global and interview formats. The one exception was that the Poor Monitoring and Supervision Scale was not included in the Ineffective Parenting Composite using the interview format, because the discrete time period of the interview does not lead to reliable estimates of the low base rate behaviors included on this scale (Shelton et al., in press). Creation of the parenting composites was felt to be justifiable, because there was a modest level of intercorrelation among the scales. Within the global report format, the correlations among the five scales ranged from .06 to .69 (mean of .25). Within the interview format, the correlations among the four scales used in the composite ranged from .13 to .79 (mean of .35). The scales were converted to standard scores (z scores) to equate for differences in variance before forming the composites. Also, scores on the Parental Involvement and Positive Parenting Scales were inverted to make higher scores indicative of ineffective parenting, analogous to the other three scales. In addition to the overall composite, the two positive parenting scales (Parental Involvement and Positive Parenting) and the three negative parenting scales (Poor Monitoring—Supervision, Inconsistent Discipline, and Corporal Punishment) were grouped into separate composites and analyzed separately.

Procedure

The measures used in this study were included as part of a comprehensive psychological evaluation for children in the clinic-referred group. On their initial visit to the clinic, all referred children and their parents were asked to consent for the use of assessment data in research. They were told that their willingness to participate in research would in no way affect the clinical services they received. No parent or child refused participation in the study. After informed consent, the parents were administered a semistructured interview to obtain demographic information and then they were administered the DISC-P. After completing the DISC-P, the parents completed the APQ Global Report Form, the PSD, and the Child Behavior Checklist—1991 (CBCL-91; Achenbach, 1991). While the parent data were being collected, children were administered an intelligence test to screen for mental retardation. The child's teacher was contacted and administered the DISC-T by telephone within the week after the evaluation, and they were mailed the PSD and Comprehensive Behavior Rating Scale for Children (CBRSC; Neep, Lacey, & Frick, 1990) with a self-addressed stamped envelope. All teachers agreed to participate. The APQ phone interviews were also initiated within the week after the evaluation.

In the volunteer sample, parents and children who agreed to participate were mailed a consent form, a sheet requesting demographic information, the DBD Rating Scale, the PSD, and the parent APQ Global Report Form. After the return of the consent forms, the child's teacher was mailed the DBD Rating Scale and the PSD with a self-addressed return

envelope. The initial phone interviews with the parent and child were then scheduled and completed within a 2- to 4-week period.

Results

Sixty (44%) of the DISC-P interviews in the clinic sample were observed through one-way mirrors. Observers independently coded parents' responses, and the kappa statistic was calculated to determine interviewer and observer agreement for all symptoms endorsed as present at least twice by the interviewer. Kappas for the CD symptoms ranged from .90 to 1.0, with a median kappa of 1.0, and kappas for the ODD symptoms ranged from .94 to 1.0, with a median kappa of 1.0. The reliability of both parent and teacher report in the clinic sample was also tested by correlating the number of symptoms endorsed by each informant with relevant scales on standardized behavior rating scales, to determine whether their report of conduct problems was consistent across different measurement techniques. The number of ODD and CD symptoms reported by a child's parent was highly correlated, $r = .77$ ($p < .001$) and $r = .74$ ($p < .001$), with the Aggression and Delinquency subscales of the CBCL-91 (Achenbach, 1991). The number of symptoms reported by a child's teacher was highly correlated $r = .77$ ($p < .001$) with the Oppositional-Conduct Disorders subscale of the CBRSC (Neeper et al., 1990).

We tested the interaction between CU traits and ineffective parenting for predicting conduct problems using a three-step hierarchical multiple regression procedure. In Step 1, the number of conduct problems were regressed onto demographic variables (age, Duncan's SEI, ethnicity, and gender), a parenting composite, and elevations on the CU scale of the PSD (dummy coded as 1 for scores above the cutoff and 0 for nonelevated scores). In Step 2, a multiplicative interaction term was entered into the equation to test for the interaction between the parenting composite and CU scale elevations. The increase in the amount of variance explained (R^2) in this step was tested for significance using the procedure recommended by Jaccard, Turrisi, and Wan (1990). In Step 3, a quadratic term for the parenting composite was entered into the equation. The increase in the amount of variance explained by this step was also tested for significance to determine whether the linear interaction might be better considered as a curvilinear quadratic trend (Lubinski & Humphreys, 1990).

The results of the six hierarchical regression analyses, one for each ineffective parenting composite, are reported in Table 1. As predicted, the interaction term between the overall parenting composites and CU scale elevations led to significant increases in R^2 in the regression equations using either the global or interview report formats to form the parenting composite. In each case, entering the quadratic term to the equation did not lead to significant increases in R^2 over that accounted for by the linear interaction term. Overall, the pattern of findings was fairly consistent across the different methods of estimating the quality of parenting. Two trends deserve note, however. First, as evident from Table 1, the interaction was strongest for the two overall parenting composites which combined all five parenting constructs. Second, the Negative Parenting Composites tended to show stronger linear associations with conduct problems than the Low Positive Parenting Composite. In Table 1, the standard-

ized regression coefficients, which estimate the linear association between the parenting composites and conduct problems controlling for the other predictors in equation, are reported for both steps of regression analyses. Providing both sets of estimates illustrates that, without controlling for the interaction between parenting and CU traits (i.e., estimates from Step 1), the association between parenting and conduct problems was estimated as being much weaker than when the variance explained by the interaction term is taken into account (i.e., estimates from Step 2). This is especially true for the Negative Parenting Composite.

The results of these hierarchical regression analyses suggest that the prediction of conduct problems by our parenting measure differed depending on whether the child showed high levels of CU traits. To illustrate the form of this interaction, Figure 1 and Figure 2 show the scatter plots of the predicted number of conduct problem symptoms for each participant according to their scores on the parenting composites, after controlling for demographic variables. Separate plots for children high on CU traits and those not elevated on these traits are combined in each figure.

Four things are evident from these figures. First, in both figures there is very little overlap between the regression lines for children elevated on CU traits and those not elevated on these traits, especially at low scores (indicating more adaptive parenting) of the parenting measures. Second, children high on CU traits were predicted to have high rates of conduct problems, regardless the level parenting. In fact, there was a slight but nonsignificant negative slope to this regression line for the parenting composites based on both the global report ($\beta = -.33$), $t(1) = 1.59$, *ns*; and interview formats ($\beta = -.14$), $t(1) = .68$, *ns*, which is illustrated in Figures 1 and 2, respectively. Third, in both figures there was the expected positive regression slope for children without CU traits using both the global report ($\beta = .21$), $t(1) = 1.75$, $p < .08$; and interview format ($\beta = .47$), $t(1) = 2.52$, $p < .01$. This indicates that, for these children without CU traits, increasing levels of ineffective parenting predicted higher rates of conduct problems. Fourth, the pattern of the interaction was very similar across the two ways of measuring ineffective parenting, although the positive slope of the regression line for children without CU traits was more pronounced using the interview assessment format (Figure 2).²

² We also repeated all analyses using only the clinic group. This was important because (a) the different method of measuring conduct problems in the clinic and normal comparison group may have influenced the results, and (b) the addition of the volunteer group likely changed the distribution of scores making the generalizability of results to other clinic samples questionable. The results of these analyses are available from Paul J. Frick by request. However, the pattern of findings were almost identical when analyses were restricted to the clinic sample. As would be expected, the main difference was that the association between parenting and conduct problems in children without elevations on the CU scale was attenuated somewhat by the more restricted range of parenting when just the clinic sample was used. Most of the volunteer sample had parenting scores below the mean of clinic sample. In the volunteer sample, the mean of the Ineffective Parenting Composite (sum of the z scores of the five component scales) based on global and interview formats was -1.10 ($SD = 3.04$) and -0.82 ($SD = 1.86$), respectively. In contrast, the corresponding means for the clinic sample were 0.24 ($SD = 3.16$) and 0.20 ($SD = 2.28$), respectively.

Table 1

Multiple Regression Analyses Predicting the Number of Conduct Problems Using Elevations on the Callous–Unemotional (CU) Scale and Ineffective Parenting Composites (IPC) as the Two Predictors

Parenting measure	Step 1: Main effects (ME) only			Step 2: ME + Interaction			
	IPC β	CU β	R^2	IPC β	CU β	CU \times IPC β	ΔR^2
Global report ($n = 166$)							
Ineffective parenting	0.06	0.40***	.184***	0.16	0.43***	-0.19*	.026*
Low positive parenting	-0.04	0.41***	.182***	0.06	0.42***	-0.17*	.019*
Negative parenting	0.13	0.38***	.197***	0.21*	0.40***	-0.13	.011
Phone interview ($n = 154$)							
Ineffective parenting	0.12	0.41***	.180***	0.28**	0.41***	-0.24**	.031*
Low positive parenting	0.00	0.40***	.167***	0.05	0.40***	-0.08	.004
Negative parenting	0.15*	0.40***	.188***	0.25**	0.41***	-0.17	.018

Note. Presented are the results of a hierarchical linear regression procedure. In Step 1, conduct problems were regressed onto the demographic variables (age, socioeconomic status, gender, and ethnicity) and the two predictors in the first step. In Step 2, a linear interaction term was added to the regression equation. The increase in explained variance (R^2) by including the interaction term was tested using an F test recommended by Jaccard et al. (1990). Parameter estimates are all standardized beta coefficients. Because the parenting composites were sums of z scores and the CU variable was dichotomous, centering of these variables was not required when estimating the beta coefficients.

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

Discussion

Consistent with the predictions made from our theoretical model, the association between ineffective parenting and conduct problem behaviors was moderated by the presence of CU traits in the child; that is, ineffective parenting was associated with increased numbers of conduct problems only for children without significant levels of CU traits. In contrast, children with CU traits exhibited high rates of conduct problems, regardless of the quality of parenting they experienced. Importantly, the regression analyses indicated that CU traits and ineffective parenting did not act in an additive fashion to predict conduct problem behaviors. For children with CU traits, there was little association between ineffective parenting and conduct problems. In fact, there was a slight negative relation. The negative association between ineffective parenting and conduct problems for children with CU traits should be interpreted very cautiously because of (a) the fact that it was nonsignificant and (b) the fact that it was not predicted a priori. One possible explanation is that there was a ceiling effect. Children with CU traits showed very high rates of conduct problems (see Figures 1 and 2) and the slight decrease in those with the poorest parenting may be a statistical artifact related to the instability of scores at the upper end of the distribution. Alternatively, it is possible that, in families of children with CU traits who are less dysfunctional, the parents may be more disturbed by the child's behavior or more aware of the extent of the problems. Hence, these parents report greater numbers of problems than parents in more dysfunctional families (e.g., with less involved parents and with parents who supervise less).

These results are consistent with our model positing that children with CU traits develop conduct problems through causal factors that are distinct from other children with conduct problems. Specifically, children with CU traits are hypothesized to have a unique motivational and affective style that make them less responsive to typical socialization practices (Kochanska, 1993; Lykken, 1995). Our results also illustrate that, by separat-

ing children with CU traits from other children with conduct problems, one can begin to get a clearer picture of factors that may be associated with the development of conduct problems primarily in children without CU traits. In this study we focused on ineffective parenting because of the importance placed on socialization practices in most theories of conduct problems (Patterson et al., 1992). However, other etiological factors might also play a greater role in the development of conduct problems in children without CU traits, such as social-information processing deficits (Dodge & Coie, 1987) or impaired intellectual ability (Frick et al., 1994; Moffitt, 1993).

Like any theoretical model, the usefulness of our model can only be determined by repeatedly testing its predictions in various samples. Even if one rejects the theoretical framework in which we have embedded our results, however, the results still have several practical and clinically important implications. By ignoring the moderating influence of CU traits, past studies may have underestimated the association between parenting and conduct problems for children without these traits and overestimated the association for children with these traits. It is quite possible that this could account for some of the discrepancies in the literature on the relative importance of ineffective parenting for explaining the development of conduct problems in various samples (Frick et al., 1992; Laub & Sampson, 1988). In addition, our results could lead to the testing of differential treatment approaches. It is possible that children without CU traits may respond better than children with CU traits to treatments that focus on enhancing parental socialization strategies. As a result, past outcome studies may have underestimated the impact of such interventions for many children with conduct problems by failing to account for the moderating role of these traits in treatment effectiveness (Frick & O'Brien, 1995; Kazdin, 1995).

Our results should be interpreted in light of several methodological issues. First, our data are correlational. Therefore, the association between the quality of parenting and conduct prob-

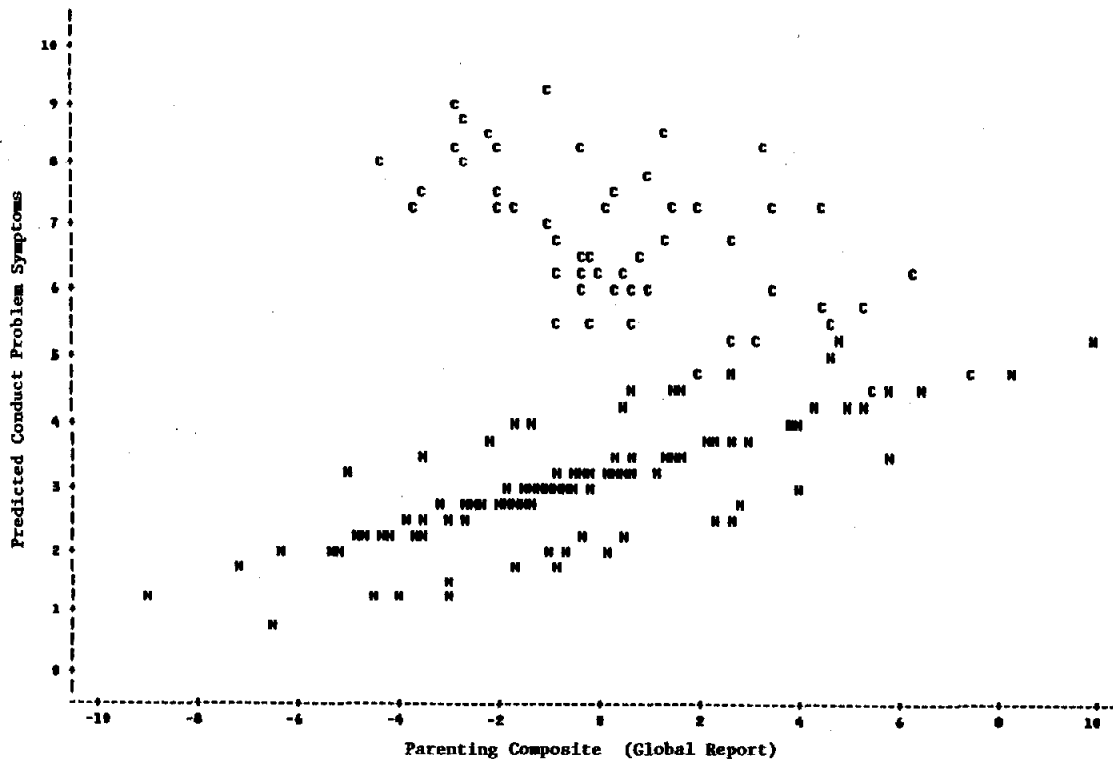


Figure 1. Plot of the predicted number conduct problems across the scores on the Ineffective Parenting Composite using the global report format after controlling for demographic variables. The two separate plots, one for those participants elevated on callous-unemotional traits (C; $n = 54$) and one for those participants not elevated on these traits (N; $n = 112$) are combined.

lems, although greater in children without CU traits, could still involve transactional effects that include the influence of the child's behavior on the parent (Lytton, 1990) or could involve some other common causal agent (Frick & Jackson, 1993). Although this methodology makes our causal inferences tenuous, we do feel that the presence of the moderating effect of CU traits makes the possibility of "child effects" less likely. We can think of no theoretical reason for why a child's conduct problems would disrupt parenting more in children without CU traits.

Second, although we used two different modalities to assess the parenting constructs, both modalities relied on parental report. The measures of conduct problems and CU traits were also based partly on parental report. Therefore, this methodology leaves open the possibility that shared method variance inflated the correlations between variables. However, we do not feel that this could account for the differential association between parenting and conduct problems across the groups defined by CU traits, which was the primary focus of the study.

Finally, although we included a group of community volunteers in the sample, our results are predominantly based on a clinic sample. In addition, the sample was predominantly White boys from lower to middle socioeconomic statuses. Although we controlled for demographic variables in our analyses to ensure that the pattern of correlations could not be attributable to differential associations with these variables, these factors could

affect the generalizability of our results. One important way in which our results could have been influenced by the sample composition was the failure to find any "protective" effects of adaptive parenting in children high on CU traits; that is, we considered the possibility that children with CU traits would show an attenuation in their risk for conduct problems if they experienced very positive socialization practices. The possibility of such an interaction was an additional reason for augmenting our clinic sample with a nonreferred group of children to include children exposed to more effective parenting strategies. The presence of this type of protective interaction was not consistent with our data. However, a larger sample of nonreferred children may be needed to detect such an interaction.

Given these limitations, it is clear that these and other predictions from our theoretical model need further testing. However, we feel that the model shows great promise for guiding research on understanding how etiological factors may differ for various subgroups of children with conduct problems. It is almost a truism in child psychopathology that conduct problems represent a heterogeneous group of children that vary considerably on etiology, course, and treatment (e.g. Hinshaw, Lahey, & Hart, 1993). Unfortunately, research has often either ignored this heterogeneity or it has lacked a clear theoretical focus within which to investigate distinct constellations of etiological factors within children with conduct problems. We believe that our model could aid in this capacity by delineating at least one more etio-

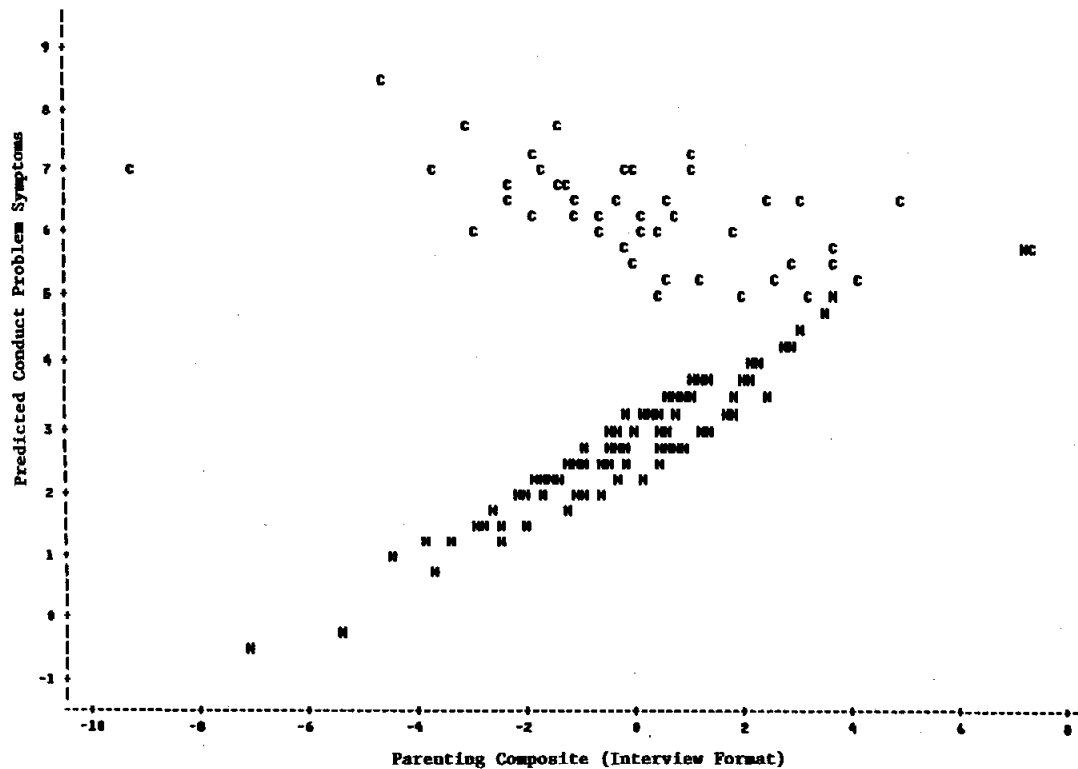


Figure 2. Plot of the predicted number conduct problems across the scores on the Ineffective Parenting Composite using the interview report format after controlling for demographic variables. The two separate plots, one for those participants elevated on callous-unemotional traits (C; $n = 48$) and one for those participants not elevated on these traits (N; $n = 107$) are combined.

logically homogenous group of children with conduct problems, one that could provide a more specific link to the adult literature on psychopathy (Frick et al., 1994).

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