THE EFFECT OF THE PARENT-ADOLESCENT EMOTIONAL CONTEXT ON THE LINK BETWEEN POSITIVE PARENTING PRACTICES AND ADOLESCENT BEHAVIORAL ADJUSTMENT

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By
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THE EFFECT OF THE PARENT-ADOLESCENT EMOTIONAL CONTEXT ON THE LINK BETWEEN POSITIVE PARENTING PRACTICES AND ADOLESCENT BEHAVIORAL ADJUSTMENT

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ABSTRACT

THE EFFECT OF THE PARENT-ADOLESCENT EMOTIONAL CONTEXT ON THE LINK BETWEEN POSITIVE PARENTING PRACTICES AND ADOLESCENT BEHAVIORAL ADJUSTMENT

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Positive parenting and a warm parent-child emotional climate predict low levels of child antisocial behavior, but the effect of positive parenting on antisocial behavior at different levels of the parent-child emotional climate has not been investigated prior to this study. This study examined the moderating effect of the parent-adolescent emotional climate on the association between positive parenting practices and conduct problems. The study investigated the following three hypotheses: (1) Parental warmth will be inversely related to adolescent externalizing behavior, controlling for initial levels of externalizing behavior and positive parenting practices. (2) Positive parenting practices will be inversely related to adolescent externalizing behavior, controlling for initial levels of externalizing behavior and parental warmth. (3) Parental warmth will moderate the effect of positive parenting practices on adolescent externalizing behavior, controlling for initial levels of externalizing behavior and the independent main effects of parental
warmth and positive parenting practices on externalizing behavior. Specifically, the inverse association between positive parenting practices and adolescent externalizing behavior was expected to be stronger at high levels of parental warmth than at low levels of parental warmth. The results indicated, first, that parental warmth and the emotional climate do not independently predict adolescent conduct problems and, second, that the emotional climate does not moderate the relationship between positive parenting practices and adolescent conduct problems.

Keywords: Parental warmth, emotional climate, positive parenting, parenting practices, conduct problems, antisocial behavior, externalizing problems
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INTRODUCTION

Conduct problems are a common and costly dilemma. International estimates of the prevalence rates for conduct problems, in terms of Conduct Disorder or Oppositional Defiant Disorder, range from 5% to 10% for youths and adolescents (McMahon, Wells, & Kotler, 2006). The term “conduct problems” includes externalizing behaviors that range from minor oppositional behaviors, such as yelling, to more severe forms of aggressive behavior, such as fighting and destruction of property. Scott, Knapp, Henderson, and Maughan (2001) reported that, compared to costs for children without conduct problems, costs for children with conduct problems and conduct disorder increase threefold and tenfold respectively. The criminal justice system absorbs the most costs, followed by special education services and residential and foster care. Furthermore, the costs associated with conduct problems are not limited to immediate consequences alone, since conduct problems are associated with substance abuse, increased suicidality, increased risk for teenage pregnancy, and increased risk for criminal activity as an adult (McMahon et al., 2006). Also, children with conduct problems are at higher risk of developing comorbid internalizing disorders, such as anxiety and depression, and academic underachievement. Altogether, direct financial costs and indirect risks make conduct problems a matter worthy of public concern.
Much of the research on risks for conduct problems has focused on the influences of parenting. According to Darling and Steinberg (1993), the domain of parenting can be analyzed according to two components: parenting practices and the parent-child emotional climate. The global dimension of parental warmth, referred to interchangeably here as the parent-child “emotional climate” or parenting style, is the degree to which the parents show non-contingent affection, love, and support for the child. Emotional climate relies on Baumrind’s (1991) concept of parenting style and denotes the affective component of typical parent-child interactions (Darling, 1999). The emotional content does not describe the parental attitude during a limited instance of child management but the general quality of warmth in the parent-child relationship. For instance, if a parent harshly rebukes a child in a particular situation, but in general positively interacts with and is affectionate toward the child, the emotional climate is considered warm rather than harsh. “Parenting practices” signifies particular socialization behaviors of the parent, including discipline and child management behaviors that are contingent on child behavior (Darling & Steinberg, 1993). For example, parenting practices would include spanking in response to child misbehavior and praising in response to cooperative behavior. “Parenting practices” answers the question of what parenting behaviors are used, whereas “parent-child emotional climate” answers the question of how parents are oriented toward the child, positively or negatively. In other words, the emotional climate is the global attitudinal stance of the parent toward the child, and it provides the atmosphere in which parenting practices happen. Every parenting behavior conceptually consists of a particular parenting practice accompanied by the emotional valence of the parent-child relationship. An emotional dimension colors every use of a parenting
practice, but the emotional climate extends beyond the context of an individual parenting practice.

This distinction between child management practices and the parent-child emotional climate is necessary in order to properly understand the theoretical framework of how parenting processes are thought to influence child development (Darling & Steinberg, 1993). Both parenting practices and the parent-child emotional climate contribute to the processes that influence child development. Research has indicated that these two components of parenting are sufficiently independent to be considered separately (Darling & Steinberg, 1999; Denham et al., 2000). In the case of harsh discipline, spanking or a verbal harangue is the parenting practice, and the pervasive warmth or insensitivity of the parents is the emotional climate. From a positive parenting perspective, restriction of privileges is the parenting practice, and parental warmth is the emotional climate. Although parenting practices and emotional climate are correlated to a moderate degree (with warmth being correlated with positive parenting practices; Alink et al., 2009), there remains substantial variation in their potential combinations. For example, it is entirely possible for a parent to use physical discipline and be warm toward his or her child, whereas another parent may use only nonphysical discipline, such as the removal of privileges in response to misbehavior, yet be emotionally distant from his or her child (Deater-Deckard & Dodge, 1997). Importantly, Darling and Steinberg (1999) argued that the relation between parenting practices and child conduct problems cannot be understood without considering the emotional climate of the parent-child relationship: parenting practices happen in a particular emotional frame of reference, and changing the frame of reference could change the meaning of the parenting practice and the effect on
behavioral outcomes. For example, praise of a child’s behavior may be more rewarding, and thus more effective, if the parent’s relationship with the child is warm and affirming rather than indifferent and unapproachable.

At present, some of the strongest support for the interdependency of parenting practices and emotional climate in their effects comes from research about the moderating influence of parental warmth on harsh parenting to reduce child maladjustment. This research has shown that the association of corporal punishment with negative outcomes depends on the context of the parent-child relationship. Rohner, Bourque, and Elordi (1996) examined children’s maladjustment in relation to the children’s perception of punishment as a form of caretaker rejection. Their finding for the ethnically diverse sample suggested that children’s perception of caretaker rejection mediated the punishment’s degree of negative impact. Children who perceived the punishment as a manifestation of caretaker rejection were more likely to have poorer psychological adjustment, suggesting that the effect of punishment depended upon the context of the overarching emotional climate of the parent-child relationship.

**Moderation of Warmth on Harsh Parenting**

Using data from the Child Development Project (CDP), Deater-Deckard and Dodge (1997) examined the effect of parental warmth on conduct problems (reflecting aggressive and rule-breaking behaviors). Deater-Deckard and Dodge hypothesized that the negative effects of harsh discipline would be amplified if the discipline was administered in the context of a cold parent-child relationship and would be minimized when the parent-child relationship was marked by warmth. The data supported their hypothesis: parental warmth buffered the effect of harsh discipline on conduct problems.
Building on these earlier studies, McKee et al. (2007) contributed to an understanding of the impact of parental warmth on child outcomes by including measures of warmth and discipline for both parents and also including a measure for depression and anxiety as well as misconduct. Few studies have examined the contribution of the father’s warmth or discipline in their analysis, but the study by McKee et al. (2007) and Deater-Deckard and Dodge (1997), cited above, are among the exceptions. Consistent with previous research, the study by McKee et al. (2007) indicated that parental warmth buffered the negative effect of mothers’ harsh physical discipline, and it also suggested that high maternal warmth buffered the effects of fathers’ harsh physical discipline.

Approaching the issue from a slightly different perspective, a group of researchers examined the moderating effect of maternal sensitivity on the link between harsh discipline and aggression (Alink et al., 2009). Previous studies had largely focused on adolescent samples, but their study concerned early development for one to three year olds. Maternal sensitivity was defined as the mother’s supportive presence and responsiveness to the child’s wants and needs (Alink et al., 2009). The measure of harsh discipline included a non-physical component as well as the typical physical emphasis. Consistent with previous studies, Alink et al. (2009) found that parental warmth reduced the magnitude of the effect of harsh discipline on child conduct problems.

Despite the consistent indication of research that the emotional climate interacts with harsh parenting practices, relatively little is known about the interaction of the emotional climate with positive parenting practices. Research has considered, however, main effects of emotional dimensions of parenting independently from particular positive
parenting practices. Both the emotional climate and positive parenting practices are correlated with child adjustment.

**Main Effect of Warmth**

Russell and Russell (1996) found a negative correlation between the parental emotional climate, measured in terms of parental warmth/affection and positive involvement, and child misbehavior. Warmth and positive involvement were part of a group of positive parenting behaviors that were characterized as “affectionate, empathic interactions, and positive involvement, such as parents initiating play and other activities with the child and assisting them in caretaking interactions” (Russell & Russell, 1996, p. 296). Warmth/affection significantly predicted low levels of misbehavior for girls, and positive involvement predicted low levels of misbehavior for boys. In the same study, negative parental reactions and commands significantly predicted misbehavior. Worthy of note, the inverse relationship between antisocial behavior and positive parenting was stronger than the association between antisocial behavior and harsh parenting. Despite the significant finding, however, the generalizability to the U.S. population was somewhat limited by the unrepresentative nature of the sample, which consisted exclusively of white children.

**Main Effect of Positive Parenting Practices**

Similar to the way warmth relates to child adjustment, high levels of positive parenting practices are associated with low levels of child conduct problems. Treatment studies that focus on parenting skills interventions consistently support the efficacy of positive parenting practices for reducing child conduct problems. Gardner, Burton, and Klimes (2006) conducted a randomized study on an intervention that targeted parenting
as the locus of intervention for conduct problems. The intervention program addressed areas of parenting, including “parent-child play, praise, incentives, limit-setting, problem-solving and discipline” (Gardner et al., 2006, p. 1124). The researchers found that improvements in these positive parenting skills contributed to decreases in observed child behavioral problems, indicating that positive parenting may be related causally to improvements in child behavior.

Reid, Eddy, Fetrow, and Stoolmiller (1999) also provided evidence for a causal effect of positive parenting practices on child conduct problems. Parents in their study received training in basic positive parenting skills and also age-specific training (e.g., how to help young children develop healthy social behaviors with peers and how to promote problem-solving skills among older children). Results indicated that positive parenting practices helped to promote appropriate social behavior among children.

Correlational longitudinal studies provide additional evidence that positive parenting practices contribute to positive child adjustment. Pettit, Bates, and Dodge (1997) examined the contribution of supportive parenting practices in the prediction of child behavioral adjustment by statistically controlling for the effects of harsh parenting. Supportive parenting was assessed using observational measures and questionnaires regarding the mother’s use of conflict-resolution and misconduct prevention strategies, awareness of the child’s activities, and the positive or negative quality of observed parent-child interactions (Pettit et al., 1997). High levels of supportive parenting and low levels of harsh parenting at age five predicted better teacher-reported adjustment in sixth grade, even after controlling for effects of harsh parenting.
The research on positive parenting practices and warmth consistently suggests an association with child behavioral problems but does not indicate the relative magnitudes of their effects or, more importantly, whether they interact. High warmth and high levels of positive parenting practices predict low levels of antisocial behavior, but it is unclear whether warmth differentially affects the impact of positive parenting practices on behavior.

**Interaction of Warmth and Positive Parenting Practices**

More than a handful of studies have indicated that the association between corporal punishment and negative behavioral outcomes is qualified by a global dimension of parental warmth and positive attitudes toward the child (Simons & Conger, 1994). Darling and Steinberg’s theoretical framework for understanding how parenting processes influence child development, however, was not intended to be limited to negative parenting practices and outcomes. Their theory should equally apply to the interaction of parent-child emotional climates with positive parenting practices. Past research, as noted above, has shown that negative parenting practices are less detrimental within a warm, positive parent-child context, and are more detrimental within a cold, rejecting atmosphere. Similarly, the degree to which positive parenting practices are linked with positive child behavior outcomes should be qualified by the emotional context: warm and loving parental environments should enhance the association between positive practices and positive child adjustment, but cold, rejecting environments should mitigate the association.

Perhaps impeding a more sophisticated understanding of the interdependent dimensions of parenting processes, research has not consistently and clearly distinguished
between the parenting dimensions of practices and parent-child emotional climate. For example, Pettit et al. (1997) evaluated “supportive parenting” with several measures that assessed the dimension of warmth and positive parenting practices. In addition, Scaramella, Conger, and Simons (1999) tested the predictive ability of parental warmth, child management skill, and low levels of hostility on internalizing and externalizing problems during early to late adolescence. They found that parental warmth, child management skill, and low hostility predicted steeper declines in externalizing problems over time. However, because these parenting dimensions were grouped together, it could not be determined whether or not their combination reflected a multiplicative effect, or simply reflected the additive effects of multiple favorable parenting characteristics.

Denham et al. (2000) incorporated parental emotion into a conceptual framework of parenting processes, but their statistical analyses did not clearly delineate parenting practices from parenting styles in the prediction of externalizing behavior. For instance, “proactive parenting behaviors (observed)” was the sum of standard scores for “supportive presence” and “task orientation.” “Supportive presence” indicated the parents’ positive regard for the child, an emotional variable, and “task orientation” indicated “limit setting” and “quality of instruction,” which are along the spectrum of parenting practices. The authors themselves recognized the limitation inherent in the difficulty of differentiating between parental emotion and behavior: “Future research could benefit from coding systems that even more clearly differentiate them [parental emotion and behavior]” (Denham et al., 2000, p. 41). In addition, the study of multidimensional parenting constructs such as “authoritative” and “authoritarian” parenting have considered the combined contributions of warmth and control (Booth,
Rose-Krasnor, McKinnon, & Rubin, 1994). However, by treating these different dimensions as a single variable, they have not been able to determine whether effects of warmth and control are indeed interactive, or if their combination is merely summative in their effects.

The purpose of the proposed study is to discover if warmth moderates the association between positive child management strategies and child conduct problems. To the knowledge of this researcher, Darling and Steinberg’s theoretical framework has not yet been applied to the study of positive parenting. A recent study by Wang, Dishion, Stormshak, and Willett (2011) indicated that “parental warmth,” which was operationally defined as the child’s perception of parental emotional support, moderates the positive effects of rule-making on behavioral problems. At high levels of parental warmth, the positive effects of rule-making on conduct problems increased. The study did not assess, however, if there is an interaction between a universal measure of positive parenting practices and a pure measure of parental warmth. Studies of the effects of positive parenting practices and the emotional context on child antisocial behavior have not been conducted in such a way as to allow for a test of their interactive effects. According to Darling and Steinberg’s theory, a warm and loving constellation of parental attitudes should enhance the effectiveness of positive parenting practices, and a rigid and unapproachable style should reduce the effectiveness. Hence, research that addresses this issue could possibly provide capstone evidence in support of Darling and Steinberg’s theory.

Contributions have been made to an understanding of the importance of the parent-child emotional context and positive parenting practices, but the precise nature of
the interaction between the emotional climate and parenting practices requires
disentanglement, which is the goal of this study. More specifically, the current study
examines whether the effect of positive parenting on antisocial behavior depends on the
level of the parent-child emotional climate.

The proposed study seeks to investigate this possibility with the examination of
the following three hypotheses:

1) Parental warmth will be inversely related to adolescent externalizing behavior,
controlling for initial levels of externalizing behavior and positive parenting
practices.

2) Positive parenting practices will be inversely related to adolescent externalizing
behavior, controlling for initial levels of externalizing behavior and parental
warmth.

3) Parental warmth will moderate the effect of positive parenting practices on
adolescent externalizing behavior, controlling for initial levels of externalizing
behavior and the independent main effects of parental warmth and positive
parenting practices on externalizing behavior. More specifically, the inverse
association between positive parenting practices and adolescent externalizing
behavior will be stronger at high levels of parental warmth than at low levels of
parental warmth.

If the empirical evidence is congruent with Darling and Steinberg’s (1993) theory
of parenting processes, this research would also have clinical implications relevant to
interventions for child behavioral problems. Numerous treatment approaches that target
child behavioral problems show treatment efficacy (McMahon et al., 2006), but a precise
attribution of responsibility for treatment effects to particular components of treatment is presently beyond the scope of previous empirical support. Efforts to clarify which elements of treatment are effective may be useful at multiple levels of analysis. At a general level, clarity is needed about which treatment components are effective at the level of treatment domain (e.g., parenting, coping skills training, family stress, etc.). For example, the Triple P-Positive Parenting Program implements interventions in the domains of parenting, marital conflict, coping skills, and management of mood problems (McMahon et al., 2006), but which interventions are responsible for treatment effects is unknown. At a more specific level of analysis, research can clarify, within a domain, which facets (e.g., parenting practices or parental warmth, within the domain of parenting) contribute to the treatment effects. In the Triple P program, the interventions address the parent-child interaction and particular parenting skills, but an understanding of which facet contributes to the outcomes and how each may contribute is nonexistent at present. Some child behavioral interventions focus on particular parenting practices (Gardner et al., 2006; Rae & Zimmer-Gembeck, 2007) while other interventions emphasize the parent-child relationship in addition to parenting practices (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). The usefulness, however, of focusing on the parent-child relationship has not been empirically established. If the contextual tone of the parent-child relationship affects behavioral outcomes, inclusion of intervention strategies that emphasize the parent-child emotional climate might enhance the effectiveness of intervention components focusing on parents’ contingent responses to child behavior.
METHOD

Participants

The data to be analyzed in the proposed study comes from the Child Development Project (CDP), a longitudinal study that examines the development of aggressive behaviors in children. Participants in the study were from three geographic locations, Nashville and Knoxville, Tennessee and Bloomington, Indiana, and were demographically representative of the locations. Participants were recruited from families during kindergarten pre-registration in 1987 and 1988. Because not all children pre-registered for kindergarten, 15% of the participants were recruited during the first two weeks of the school years. Parents were approached randomly by research staff during registration or solicited by mail and asked to participate in a longitudinal study of child development. Approximately 75% agreed to participate in the study. Of the original sample of 585 youths, 48% were female, 17% were African American, 2% were members of other ethnic groups, and 26% were living in single-parent-headed households. The Hollingshead four-factor index of social status (based on job status and education) ranged from 14 to 66 (possible range is 8 to 66), with a median of 38.5 (SD = 14.1). Eight percent of subjects came from the lowest socio-economic class, with 16%, 28%, 30%, and 18% from the other classes, in ascending order.
The first assessment occurred during the summer prior to kindergarten (i.e., when the children were about 5 years old). Annual follow-up assessments of youths were conducted during the school year through Grade 8, and annual follow-up family assessments (via parent questionnaires) were conducted during the summers. In the summer prior to and early fall of sixth grade, families also participated in home-visit interviews. Later that year, telephone interviews focusing on the use of after-school time were conducted independently with each youth and parent. Teachers’ reports on youth behavior were obtained annually during the spring of each academic year.

This study uses data collected when youths were 13 – 17 years of age. Initial informed consent was obtained from parents prior to the first interview, including specific permission to collect data from teachers and schools. Informed consent was obtained again every succeeding year that the family participated, either in person or via the mail. On each occasion, parents were told the purpose of the study and their rights as research participants. If a member of the study staff was not certain that a participating parent was able to read the consent forms, the forms were read aloud. Families received $20 for their participation at each time of data collection.

Approval by the Research Review and Ethics Committee of the University of Dayton was obtained for the current study.

Measures

**Parent-adolescent emotional climate.** In the parent interviews, when the average age of the child participant was 13 years, mothers responded to 6 items intended to assess the quality of the parent-adolescent relationship. Mothers responded to the items using a 5-point scale, which ranged from “not at all” to “extremely” for some items.
and from “once a month” to “once a day” for other items, depending upon the wording of
the items. The items inquired about how well the parent and adolescent got along and
enjoyed their relationship, including questions such as, “How well do you and TC [target
child] get along,” “How often does TC go out of his/her way to please you,” and “How
often does TC irritate you in a minor way?” In a previous study by Laird, Pettit, Dodge,
and Bates (2003), in which the same 6 items were used to measure “Enjoyment of Parent-
Adolescent Relationship,” the item scores had adequate internal reliability, $\alpha = .72$, and
correlated strongly with interviewer ratings of unstructured parent descriptions of the
parent-adolescent relationship, $r = .49, p < .001$. Scores for the 6 items also negatively
correlated with parent-adolescent conflict, $r = -.32, p < .001$. Items from the parent-
adolescent emotional climate measure are presented in Appendix A.

**Positive parenting practices.** A scale for positive parenting practices was
derived from an original list of 27 items, which were part of the CDP parent interviews at
age 13 and were intended to assess what tactics parents use to address their child’s
misbehavior. The brief questionnaire was completed by mothers, who reported on the
frequency of use of the parenting practices and the order in which they used the parenting
practice. Eleven items, which were selected based on their consistency with practices
that are frequently taught as part of parent-management training (McMahon et al., 2006),
were averaged together to create a positive parenting practices scale. Sample items from
the scale included “question why he/she is doing the behavior,” “get TC [target child] to
correct or make up for problem s/he caused,” and “restrict privileges.” Mothers reported
the frequency with which they used particular items on a 4-point scale, with $1 =$ never
use, $2 =$ use rarely, $3 =$ use sometimes, and $4 =$ use frequently. Confirmatory factor
analysis was used to verify that the items measured a common positive parenting practices factor. No standardized loadings fell below .30, and all loadings were statistically significant. In addition, the 11 items demonstrated adequate internal consistency, $\alpha = .72$, and the reliability of the scale was not substantially improved by the removal of any particular items. The 11 items used to create the positive parenting practices variable are presented in Appendix B.

**Externalizing behavior.** The Child Behavior Checklist (CBCL) is a reliable and well-validated instrument for assessing child and adolescent problem areas (Achenbach, 1991). Of particular interest to this study are the Externalizing behavior subscales, which assess aggressive and delinquent behaviors. At each of the assessments, mothers completed the parent report form of the CBCL, and adolescents completed the equivalent Youth Self Report (YSR). The externalizing subscales from the parent form and YSR are composed of 33 and 30 items respectively, and each of the items is rated on a 3-point scale: 0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true. Sample items from the Externalizing behavior subscales include, “Doesn't seem to feel guilty after misbehaving,” “Uses alcohol or drugs for nonmedical purposes,” “Argues a lot,” and “Unusually loud” (Achenbach, 1991). Using the same sample from the CDP, previous studies have demonstrated sufficient reliability of the Externalizing subscales with both the parent and adolescent forms, $\alpha = .91$ and .88, respectively (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). Stability of externalizing scores has also been shown over a 2-year period ($r = .65$), based on the mother’s report (Schwartz, McFadyen-Ketchum, Dodge, Pettit, Bates, 1998). In support of convergent and concurrent validity, both the YSR and parent forms had significant, moderate to strong
correlations with measures of reactive/proactive aggression, reported by mothers and adolescents, and three subscales from the Adolescent Behavior Questionnaire, which assessed the behavior problem areas of violence, school trouble, and police trouble (Lansford et al., 2004). Externalizing scores from the YSR completed at ages 13 and 17 were used in the current study. Sample items from the Externalizing behavior subcales are presented in Appendix C.
RESULTS

Descriptive statistics for the variables in the study are presented in Table 1 and include the means, standard deviations, and ranges of the variables. Correlations between the variables used in the regression equations are presented in Table 2. Hierarchical regression analyses, as outlined by Jaccard and Turrisi (2003), were used to test the main and interactive effects of age 13 emotional climate and positive parenting practices on age 17 externalizing behavior, controlling for age 13 externalizing behavior. Before entering the variables into the regression equations, the predictor (positive parenting practices) and moderator (parental warmth) variables were centered in order to reduce multicollinearity with the interaction term. The variables were centered by subtracting the mean from all individual scores on each of the variables, producing a new sample mean of zero for each of the variables.

Two different hierarchical regression equations were computed to test each hypothesis below. The regression equations differed only with regard to the way in which the criterion variable, age 17 adolescent conduct problems, was measured. For each hypothesis, the first regression equation used parent report of age 17 conduct problems as the criterion variable (N = 378), and the second regression equation used the youth self-report of age 17 conduct problems as the criterion variable (N = 379). Age 13 Externalizing Behavior, Parental Warmth, and Positive Parenting Practices were entered
Table 1

*Descriptive Statistics for Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Range</th>
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<tbody>
<tr>
<td>Parental Warmth</td>
<td>3.91</td>
<td>.61</td>
<td>1 – 5</td>
</tr>
<tr>
<td>Positive Parenting Practices</td>
<td>2.75</td>
<td>.43</td>
<td>1.36 – 3.73</td>
</tr>
<tr>
<td>Age 13 Externalizing Behavior</td>
<td>9.05</td>
<td>7.22</td>
<td>0 – 35</td>
</tr>
<tr>
<td>Age 17 Externalizing Behavior (Parent Report)</td>
<td>8.25</td>
<td>7.82</td>
<td>0 – 43</td>
</tr>
<tr>
<td>Age 17 Externalizing Behavior (Youth Report)</td>
<td>11.65</td>
<td>7.44</td>
<td>0 – 37</td>
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</table>
Table 2

*Summary of Intercorrelations between Measures*

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
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<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Positive Parenting Practices</td>
<td>-.26**</td>
<td>—</td>
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<td></td>
<td></td>
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<tr>
<td>3. Age 13 Externalizing Behavior</td>
<td>-.57**</td>
<td>.36**</td>
<td>—</td>
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</tr>
<tr>
<td>4. Age 17 Externalizing Behavior (Parent Report)</td>
<td>-.42**</td>
<td>.32**</td>
<td>.70**</td>
<td>—</td>
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</tr>
<tr>
<td>5. Age 17 Externalizing Behavior (Youth Report)</td>
<td>-.20**</td>
<td>.20**</td>
<td>.37**</td>
<td>.45**</td>
<td>—</td>
</tr>
</tbody>
</table>

*Note:* **p < .01
in the first block of the equation. The interaction term, Parental Warmth x Positive Parenting Practices, was entered in the second block of each equation. The equations differed only in the way in which age 17 externalizing behavior was measured, parent report of adolescent conduct problems versus youth self-report of conduct problems.

**Primary Analyses**

**Hypothesis 1.** The first hypothesis, parental warmth will be inversely related to adolescent externalizing behavior, was tested in the first block of the hierarchical regression equations. In the first regression equation testing this hypothesis, Age 17 Externalizing Behavior (parent report) was the criterion variable, and Parental Warmth was the predictor variable, controlling for the effects of Age 13 Externalizing Behavior and Positive Parenting Practices on Age 17 Externalizing Behavior (parent report). The results indicated that Parental Warmth did not significantly predict Age 17 Externalizing Behavior (parent report) above and beyond Age 13 Externalizing Behavior and Positive Parenting Practices. See Table 3 for a summary of these results. In the second regression equation, using Age 17 Externalizing Behavior (youth self-report) as the criterion variable, Parental Warmth did not significantly predict Age 17 Externalizing Behavior (youth self-report) above and beyond Age 13 Externalizing Behavior and Positive Parenting Practices. See Table 4 for a summary of these results.

**Hypothesis 2.** The second hypothesis, positive parenting practices will be inversely related to adolescent externalizing behavior, was tested in the first block of the two regression equations. In the first regression equation testing this hypothesis, the criterion variable was Age 17 Externalizing Behavior, and the predictor variable was
Table 3

Hierarchical Multiple Regression Analysis Predicting Parental Report of Age 17 Externalizing Behavior from Positive Parenting Practices at Different Levels of Parental Warmth

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>R²Δ</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1: R² = .50, p = .000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 13 Externalizing Behavior</td>
<td>.71</td>
<td>.05</td>
<td>.66</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth</td>
<td>-.24</td>
<td>.36</td>
<td>-.03</td>
<td>.495</td>
<td></td>
</tr>
<tr>
<td>Positive Parenting Practices</td>
<td>.61</td>
<td>.31</td>
<td>.08</td>
<td>.051</td>
<td></td>
</tr>
<tr>
<td>Block 2: R² = .50, p = .000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 13 Externalizing Behavior</td>
<td>.72</td>
<td>.05</td>
<td>.66</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth</td>
<td>-.24</td>
<td>.36</td>
<td>-.03</td>
<td>.497</td>
<td></td>
</tr>
<tr>
<td>Positive Parenting Practices</td>
<td>.60</td>
<td>.33</td>
<td>.08</td>
<td>.066</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth x Positive Parenting Practices</td>
<td>.02</td>
<td>.31</td>
<td>.00</td>
<td>.947</td>
<td></td>
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</tbody>
</table>
Table 4

*Hierarchical Multiple Regression Analysis Predicting Youth Self-Report of Age 17 Externalizing Behavior from Positive Parenting Practices at Different Levels of Parental Warmth*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>(R^2\Delta)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Block 1: (R^2 = .15, p = .000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 13 Externalizing Behavior</td>
<td>.36</td>
<td>.06</td>
<td>.35</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth</td>
<td>.07</td>
<td>.44</td>
<td>.01</td>
<td>.883</td>
<td></td>
</tr>
<tr>
<td>Positive Parenting Practices</td>
<td>.53</td>
<td>.38</td>
<td>.07</td>
<td>.166</td>
<td></td>
</tr>
<tr>
<td><strong>Block 2: (R^2 = .15, p = .000)</strong></td>
<td></td>
<td></td>
<td></td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Age 13 Externalizing Behavior</td>
<td>.37</td>
<td>.06</td>
<td>.36</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth</td>
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<td>.44</td>
<td>.01</td>
<td>.866</td>
<td></td>
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<tr>
<td>Positive Parenting Practices</td>
<td>.44</td>
<td>.40</td>
<td>.06</td>
<td>.271</td>
<td></td>
</tr>
<tr>
<td>Parental Warmth x Positive Parenting Practices</td>
<td>.29</td>
<td>.38</td>
<td>.04</td>
<td>.448</td>
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</tr>
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</table>
Positive Parenting Practices, controlling for the effects of Age 13 Externalizing Behavior and Parental Warmth on Age 17 Externalizing Behavior (parent report). The results indicated that Positive Parenting Practices did not significantly predict Age 17 Externalizing Behavior (parent report), above and beyond Age 13 Externalizing Behavior and Parental Warmth. See Table 3 for a summary of these results. In the second regression equation, which used Age 17 Externalizing Behavior (youth self-report) as the criterion variable, Positive Parenting Practices did not significantly predict Age 17 Externalizing Behavior (youth self-report) above and beyond Age 13 Externalizing Behavior and Parental Warmth. See Table 4 for a summary of these results.

**Hypothesis 3.** The third and primary hypothesis, parental warmth will moderate the effect of positive parenting practices on adolescent externalizing behavior, was tested using the two hierarchical multiple regression equations. In the first regression equation, Age 17 Externalizing Behavior (parent report) was the criterion variable, and Positive Parenting Practices x Parental Warmth was the interaction term. Age 13 Externalizing Behavior (parent report), Positive Parenting Practices, and Parental Warmth were entered in the first block of the equation to control for their independent effects on Age 17 Externalizing Behavior, and the interaction term was entered in the second block. The results indicated that there was no interactive effect of Parental Warmth x Positive Parenting Practices on Age 17 Externalizing Behavior (parent report). See Table 3 for a summary of these results. In the second regression equation, with Age 17 Externalizing Behavior (youth self-report) as the criterion variable, the results indicated that Parental Warmth did not moderate the effect of Positive Parenting Practices on Age 17 Externalizing Behavior (youth self-report). See Table 4 for a summary of these results.
DISCUSSION

The primary aim of this study was to clarify the way in which parenting processes influence the development of conduct problems in adolescence. Darling and Steinberg (1999) suggested that the effect of parenting practices on the child depends upon the context, referred to as the emotional climate, of the parent-child relationship. Within the context of high levels of parental warmth, Darling and Steinberg’s theory suggests that a particular parenting practice would have a different meaning for the child than at low levels of parental warmth. Previous research (Deater-Deckard & Dodge, 1997; McKee et al., 2007) has indicated that parental warmth moderates the relationship between harsh parenting and conduct problems, but previous research has not investigated if parental warmth moderates the relationship between positive parenting practices and conduct problems.

Contrary to Darling and Steinberg’s theory of parenting processes, the results of this study indicated that parental warmth does not moderate the relationship between positive parenting practices and adolescent conduct problems. Furthermore, the results indicated that positive parenting practices and parental warmth do not independently predict adolescent conduct problems. High levels of positive parenting practices and parental warmth were not associated significantly with lower levels of conduct problems in this study.
In an attempt to understand the results, possible explanations for failing to find significant effects of parenting on conduct problems will be explored in the next sections, followed by suggestions about possible implications for interventions, limitations of the current study, and possible directions for future research.

**Predicting Conduct Problems from Parental Warmth and Positive Parenting Practices**

Contrary to previous research (Russell & Russell, 1996; Pettit et al., 1997), parental warmth and positive parenting practices did not predict conduct problems in this study. This result might be explained in part by research that suggests that the positive aspects of parenting are more weakly associated with poor child outcomes than the negative aspects of parenting. In a meta-analysis examining the magnitude of the relation between various parenting variables and delinquency, Hoeve et al. (2009) found that the strongest mean effect sizes of parenting dimensions were for negative aspects of parental support, including hostility. One of the weakest links to delinquency found in the same study was between authoritative parenting and delinquency. Although authoritative parenting is not equivalent to positive parenting practices, an authoritative parenting style, characterized by sensitive but proactive child management, would be expected to include the use of positive parenting practices. Based on the conclusions by Hoeve et al. (2009), since the positive dimensions of parenting are more weakly associated with antisocial outcomes, the link between the positive dimensions of parenting in this study, parental warmth and positive parenting practices, might have been difficult to detect.

A second possible reason that parental warmth and positive parenting practices did not predict externalizing behavior might be due to the informant about adolescent conduct problems. In the meta-analysis by Hoeve et al. (2009), effect sizes were larger
for studies in which levels of delinquent behavior were determined based on child versus parent report or the report of multiple other sources. Adolescents, the population in this study, might even produce larger effect sizes than children when they are the informant about conduct behaviors. Adolescents are more likely to engage in covert forms of externalizing behavior than younger children (McMahon et al., 2006), and therefore adolescents might provide more accurate information about their conduct behaviors than their parents. Parents of younger children, who are more likely to engage in overt forms of conduct problems, tend to be aware of the misbehavior of their children more than parents of adolescents, who are less likely to engage in conduct problems that parents would know about. Consequently, adolescent estimates of engagement in conduct disorder behaviors are typically higher than parent estimates. Although youth self-report of externalizing behavior was used as the criterion variable in the secondary analyses, the initial level of adolescent externalizing problems, which was controlled for in the secondary analyses, was based on parent report.

Third, the detection of a link between parenting processes and youth conduct problems might have been attenuated by the age of the youths. Hoeve et al. (2009) found that the association between parenting and delinquency was stronger for children and early adolescents than for mid and late adolescents. A possible explanation for this finding offered by the researchers is that as children mature during adolescence, the position of influence occupied by parents during childhood shifts to the adolescent’s peer group. Adolescents spend increasingly more time with their peers, and the socialization by peers can become more influential at this stage of development than the socialization efforts of the parents. The adolescents in this study were assessed for conduct problems
at about age 13 years old and 17 years old, placing them in an age group that may be less sensitive to the effects of parenting processes.

The fourth and most likely reason that the current study did not find an effect of parenting processes on conduct problems, as reported in previous studies, is that this study controlled for the effects of initial levels of adjustment. In the regression analyses testing the main and interactive effects of parental warmth and positive parenting on age 17 externalizing behavior, prior levels of conduct problems were controlled. Without intervention, conduct problems tend to be fairly stable, and a history of conduct problems greatly increases risk for future conduct problems. In a 25-year longitudinal study, Fergusson, Horwood, and Ridder (2005) found significant associations between child conduct problems and adult antisocial and risky behaviors, including criminal activity, substance abuse, and risky sexual relationships. The current study controlled for initial levels of conduct problems, but some previous studies that have examined the association between positive parenting dimensions and conduct problems (Russell & Russell, 1996; Pettit et al., 2007) did not control for prior adjustment. Pettit et al. (2007) conducted a study that examined the relationship between pre-kindergarten supportive parenting and adjustment at the end of kindergarten and grade 6 adjustment. Certain components of supportive parenting predicted kindergarten adjustment one year later, although prior adjustment was not controlled. When kindergarten adjustment was controlled for in grade 6, the same supportive parenting components were no longer significant predictors of externalizing problems. By controlling for prior levels of externalizing behavior in this study, multicollinearity of parental warmth and positive parenting practices with
initial levels of externalizing problems was reduced, possibly eliminating any association between parenting and future conduct problems.

**Moderating Effect of Parental Warmth on the Relationship between Positive Parenting Practices and Externalizing Problems**

The primary hypothesis under investigation in this study was that parental warmth moderates the association between positive parenting practices and externalizing behavior. The difficulty detecting a moderating effect might have been complicated by the reasons listed above or by circumstances particular to testing interaction effects. This section will present three possible reasons that the study failed to find an interaction between parental warmth and positive parenting practices on externalizing problems: this study controlled for prior adjustment, there was not enough variation in combinations of different levels of parental warmth and positive parenting practices to detect an interaction, and Darling and Steinberg’s theory of parenting processes applies only to harsh parenting but not positive parenting.

The study by Wang et al. (2011) is the only study that this researcher is aware of that examines a moderating effect of parental warmth on the relationship between aspects of positive parenting and behavioral problems. Wang et al. (2011) found that a measure of parental warmth moderated the effects of particular aspects of positive parenting, parental knowledge and rule making, on adolescent conduct problems. The study investigated a moderating effect using hierarchical linear modeling but did not control for prior levels of conduct problems. Controlling for prior adjustment in the current study might have contributed to a failure to find a moderating effect of parental warmth, as reported by Wang et al. (2011).
Another possible reason that the current study failed to find a moderating effect of parental warmth is that there was not sufficient variation of combinations of levels of parental warmth and positive parenting practices among the participants. In order to detect a moderating effect, participants were needed with parents who reported high levels of parental warmth and high levels of positive parenting practices, high levels of parental warmth and low levels of positive parenting practices, low levels of parental warmth and high levels of positive parenting practices, and low levels of parental warmth and low levels of positive parenting practices. Poor representation of these combinations of parenting dimensions in the sample might have made a moderating effect difficult to detect. Although the sample was relatively diverse, the sample was non-clinical, which might have contributed to insufficient variation or degrees of variation along the parenting dimensions.

As a final consideration, this study might have failed to detect a moderating effect of parental warmth on the association between positive parenting practices and conduct problems because Darling and Steinberg’s (1999) theory of parenting processes does not apply to positive parenting. In the meta-analysis by Hoeve et al. (2009) cited above, the authors suggest that the positive parenting construct of support, also referred to as warmth and acceptance, is not along a continuum with negative aspects of support, such as hostility and rejection. Because the relationship between negative aspects of support and delinquency were significantly stronger than the relationship between low levels of positive support and delinquency, the authors suggested that positive support and hostility are along different dimensions. Similar to the way in which parental warmth and hostility are associated differently with conduct problems, positive parenting practices
and harsh parenting practices may be associated differently with conduct problems, warranting being treated as different parenting dimensions.

**Clinical Implications**

A secondary goal of this study was to clarify the importance of interventions that target the parenting practices versus the parent-child relationship for treatment programs designed to improve conduct problems. Some child behavioral interventions focus on particular parenting practices (Gardner et al., 2006; Rae & Zimmer-Gembeck, 2007), while other interventions emphasize the parent-child relationship in addition to parenting practices (Eisenstadt et al., 1993). One of the conclusions of the study by Wang et al. (2011), which found a moderating effect of parental warmth, was that parents’ relationship with their children should be a focus of treatment for adolescent conduct problems. Because the present study did not find a significant moderating effect of parental warmth, however, the relative importance of focusing on the parent-child relationship in the treatment of conduct problems was not supported. On the other hand, the failure of this study to detect a moderating effect of parental warmth does not prove that the parent-child relationship is unimportant for clinical interventions. Rather, inconsistency in findings suggests the need for further research on the association between parenting characteristics and child conduct problems.

**Limitations and Future Research**

The most noteworthy limitation of this study was the use of the same informant for nearly all measures used in the analysis. Parents supplied information about parenting variables and adolescent behavior problems. As explained above, parents typically provide lower estimates of adolescent conduct problems than adolescent self-report.
possible explanation for this difference is that parents are not aware of some of the conduct problems of adolescents since adolescents engage in more covert acts of misconduct than younger children. An attempt was made to correct for uniformity in the source of the informant by using the youth self-report of externalizing behavior at age 17 as the criterion in the secondary analysis of each hypothesis. This correction, however, introduced a limitation of its own, since the measure of the initial level of externalizing behavior relied on parent report. Consequently, there was an inconsistency in the measure used to assess externalizing behavior at age 13 years old and 17 years old for the secondary analyses. Despite these limitations, one of the strengths of the analyses used in this study was that prior levels of adjustment were controlled statistically. Controlling for prior adjustment provided a more accurate analysis of the unique contribution of the parenting variables to adolescent conduct problems. Some of the previous studies that investigated the relationship between parenting dimensions and conduct problems did not control for initial adjustment, allowing for the possibility that prior levels of child conduct problems confounded the association between parenting and later conduct problems. The only previous study identified to have investigated a moderating effect of parental warmth on the relationship between certain positive parenting variables and externalizing problems (Wang et al., 2011) did not control for initial conduct problems.

Because the results of this study regarding a moderating effect of parental warmth are inconsistent with the results of the study by Wang et al. (2011), future research might attempt to replicate the finding by Wang et al. (2011) using a sample with greater diversity in parenting practices while also controlling for initial levels of child adjustment. Perhaps parental warmth moderates the relationship between only certain
positive parenting practices and conduct problems. Consideration of adolescent characteristics might also be important in understanding the effects of parenting processes on conduct problems. Callous and unemotional traits, in particular, have been identified as prognostic of the persistence and severity of conduct problems in adolescence (Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005). Adolescents with conduct problems who exhibit callous and unemotional traits may be more resistant to the effects of parenting processes, but for adolescents without these traits, Darling and Steinberg’s theory of parenting processes might be applicable.

In conclusion, the goal of this study was to investigate how parenting processes influence the development of child conduct problems. Darling and Steinberg’s (1999) conceptualization of parenting processes provided the theoretical framework for how parenting processes influence child development. According to their theory, the effect or meaning of a particular parenting practice depends on the emotional context of the parent-child relationship, referred to as the emotional climate. Therefore, the emotional climate, operationalized as parental warmth, was hypothesized to moderate the relationship between positive parenting practices and child externalizing behavior. Contrary to this hypothesis, the current study did not find that parental warmth moderated the relationship between positive parenting practices and adolescent conduct problems. Based on the results from the current study, it is possible that Darling and Steinberg’s (1999) theory of parenting processes does not apply to positive parenting practices, but only to harsh parenting practices. Consequently, improving the quality of the parent-child relationship may not be as important for enhancing the benefits of positive parenting practices as for reducing the negative effects of harsh parenting practices.
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Callous-unemotional traits in predicting the severity and stability of conduct


H. Global Impressions of Parent-Adolescent Relations

In this section, we want to ask you a few questions about how you and TC are getting along at this point.

_____ 1. How well do you and TC get along?
(1=not well at all; 2=not too well; 3=okay; 4=well; 5=very well)

_____ 2. How enjoyable is it for you to spend time with TC?
(1=not at all enjoyable; 2=not very; 3=somewhat; 4=quite; 5=extremely)

_____ 3. How often does TC go out of his/her way to please you?
(1=never or less than once a month; 2=about once a month; 3=2 or 3 times/month; 4=at least once a week; 5=at least once a day)

_____ 4. How stressful is it for you to spend time with TC?
(1=not stressful at all; 2=a little; 3=somewhat; 4=quite; 5=extremely)

_____ 5. How often does TC irritate you in a minor way?
(1=never or less than once a month; 2=about once a month; 3=2 or 3 times/month; 4=at least once a week; 5=at least once a day)

_____ 6. How often does TC irritate you in a major way?
(1=never or less than once a month; 2=about once a month; 3=2 or 3 times/month; 4=at least once a week; 5=at least once a day)
APPENDIX B

POSITIVE PARENTING PRACTICES SCALE

2. Parents have many different tactics for dealing with their kids' misbehavior, and they have different beliefs about their strategies. Which tactics have you used over the past year to deal with TC's behavior, and in what percent of the discipline situations have you used them? We realize that rearing kids is complicated; we want to know what parents actually do here, not what they believe are the "best" practices. (*Int.: Free response first-mark order that parent mentions--1, 2, etc.--in first column, then ask about frequency of use and mark second column; then prompt with ones in list that the parent has not mentioned, recording frequency of use.*)

[The following list of items is a subset of items from the original 27-item list. The items in the list below were selected to assess the frequency of positive parenting practices rather than the broad category of parenting practices. The order in which parents reported using a particular practice was not included; only the frequency of use was included in the list.]

Scale: When TC misbehaves...

1=never use, 2=use rarely, 3=use sometimes, 4=use frequently

Use

freq.
  1. question why he/she is doing the behavior
  2. discuss problem, explain reasons
  3. get TC to correct or make up for problem She caused
  4. restrict privileges
  5. distract TC, redirect their behavior
  6. tell TC to stop
  7. give a fine (e.g. from allowance)
  8. time out, send to room
  9. give extra chores
  10. get TC to apologize, make amends
  11. promise treat/privilege for good behavior
APPENDIX C

EXTERNALIZING BEHAVIOR SAMPLE ITEMS

0 = Not True
1 = Somewhat True
2 = Very True

3. Argues a lot

26. Doesn't seem to feel guilty after misbehaving

57. Physically attacks people

32. Sets fires

104. Unusually loud

105. Uses alcohol or drugs for nonmedical purposes