

Children's Intent Attributions and Feelings of Distress: Associations with Maternal and Paternal Parenting Practices

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Abstract Many studies point to the importance of social information processing mechanisms in understanding distinct child behaviors such as aggression. However, few studies have assessed whether parenting might be related to such mechanisms. This study considers how aversive forms of parenting (i.e., corporal punishment, psychological control) as well as parental warmth and responsiveness might be concurrently associated with children's hostile intent attributions and emotional distress in response to ambiguous provocation scenarios (both instrumental and relational). A sample of 219 children (101 boys, 118 girls) and their parents participated. Bivariate associations showed that parenting dimensions and child variables were significantly associated in mostly expected ways, but only in father–child relationships (especially father–son relationships). Analyses generally showed dimensions of aversive parenting by fathers to be associated with a greater tendency toward hostile attributional bias in children. Moreover, paternal warmth and responsiveness, as well as corporal punishment, were associated with less emotional distress in boys. In contrast, paternal psychological control predicted greater emotional distress in boys. The findings suggest that the tone of the father–son relationship, in particular, may help set the tone for how boys interpret their social world. Psychological control figures prominently in this regard.

Keywords Intent attributions · Parenting · Emotional distress · Psychological control

Social information-processing models examine how individual differences in social behavior might be tied to unique social–cognitive orientations. A related premise is that social information processing patterns might be modified in order to diminish problematic behaviors like aggression (Dodge et al. 1990; Guerra and Slaby 1990; Hudley and Graham 1993). The ongoing cognitive processing of social events is frequently portrayed in these models as a series of unique steps, and physically aggressive children, in particular, appear to struggle in their processing at every step (Crick and Dodge 1994). The step which has received the most research attention in the prediction of physical aggression involves the interpretation of cues step (Crick and Dodge 1994; Orobio de Castro et al. 2002). A central part of accurate interpretation of social cues is intent attributions, or the correct perception of the intent of social companions. Aggression is often a reaction to provocation, but provocative cues may be ambiguous. In such situations, one hallmark of the physically aggressive child is that he tends to assume hostile intent when a peer's motives are unclear (e.g., Dodge 1980; Guerra and Slaby 1989). This tendency is referred to as a “hostile attributional bias” (Nasby et al. 1979). In contrast, the highly prosocial child is more likely to have a “benign attributional bias,” wherein they are more likely to give others the benefit of the doubt in ambiguous social situations (Nelson and Crick 1999).

The majority of studies regarding hostile attributional bias have considered physical aggression alone as a correlate. In recent years, however, aggression research has expanded beyond physical aggression to consider other forms such as relational aggression (also referred to as indirect and social aggression; see Archer and Coyne

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2005), which is defined by the intent to manipulate and damage relationships (Crick and Grotpeter 1995). Crick and colleagues (Crick 1995; Crick et al. 2002) were the first to test whether relational aggression might be associated with hostile attributional bias. In doing so, they have posited that there is an important difference in the types of situations which elicit hostile attributions and emotional distress in physically aggressive and relationally aggressive children. In particular, disputes over physical dominance, territory, and material objects, which Crick et al. (2002) have labeled as “instrumental provocations,” should coincide with more physical aggression whereas potential relational slights (e.g., perceived relational exclusion, disloyalty by friends) should be differentially tied to relational aggression. Results of some studies confirm this hypothesis (Crick et al. 2002; MacBrayer et al. 2003) whereas other studies find no connection between relational aggression and hostile intent attributions (Crain et al. 2005; Nelson et al. 2008). However, it is clear that children do differentiate between instrumental and relational provocation scenarios (Nelson et al. 2008).

Seeking the Source of Hostile Intent Attributions

An important question surrounding this research is the actual source of hostile intent attributions. From a social-learning perspective, hostile intent attributions may be vicariously gained by observing those who demonstrate a hostile attributional bias. The family, of course, is a likely context for such learning to occur (Costanzo and Dix 1983; MacKinnon-Lewis et al. 1994; Pettit et al. 1988). Parents may teach or model for their children guidelines for interpreting social interactions (Costanzo and Dix 1983; MacKinnon-Lewis et al. 1999; Burks and Parke 1996; McDowell et al. 2002). For example, children may observe a mother’s negative verbal reaction to another’s behavior or she may directly teach them to be skeptical of others’ intentions. Children may accordingly develop a hostile attributional bias and be more susceptible to emotional distress when potential provocations occur.

A few studies indeed show that parents’ hostile intent attributions are tied to their children’s social cognition and behaviors. For example, MacKinnon-Lewis et al. (1994) found that mothers’ hostile intent attributions were associated with their sons’ social maladjustment and coerciveness in the mother–son relationship. MacKinnon-Lewis et al. (2001) also found that negative attributions of fathers and their adolescents corresponded with negative interactions with each other, and predicted adolescents’ negative attributions 1 year later. Bickett et al. (1996) have also found that mothers of physically aggressive boys shared their sons’ tendency to infer hostility in ambiguous instrumental situations.

MacBrayer et al. (2003) were the first to assess the correspondence between mother and child attributions in both ambiguous instrumental *and* relational provocations. Results showed that mothers’ intent attributions corresponded with their daughters’ intent attributions for ambiguous instrumental scenarios. More recently, Nelson et al. (2008) further considered concordance between parent and child intent attributions for both mothers and fathers. This study included both instrumental and relational provocations, as well as assessments of children’s physical and relational aggression. Results showed that maternal intent attributions were significantly associated with children’s instrumental and relational intent attributions, but not with their aggressive behavior. This finding suggested that children may indeed be learning hostile attributions from the example of their mothers. In the case of fathers, however, their intent attributions were associated with their children’s relationally aggressive behavior. Nelson et al. (2008) speculated that paternal parenting practices may mediate this link between paternal intent attributions and child relational aggression. For example, a father prone to hostile intent attributions may engage in harsh parenting, which then provokes child aggression.

Parenting Practices and Children’s Hostile Behavior and Intent Attributions

There is ample evidence that certain aspects of parenting relate to physical aggression (Dodge et al. 2006), but few studies have considered potential parenting correlates of relational aggression. The studies that do exist suggest that both negative (e.g., corporal punishment, psychological control) and positive (e.g., warm and responsive) forms of parenting are concurrently associated with more or less relational aggression in preschoolers (Brown et al. 2007; Casas et al. 2006; Hart et al. 1998; Nelson et al. 2006), children in middle childhood (Kuppens et al. 2008; Nelson and Crick 2002), and adolescents (Loukas et al. 2005). These studies predominantly emphasize a social-learning perspective, in which the nature of the parent–child relationship serves as the prototype of basic relationship functioning. The child transfers negative or positive interaction styles to relationships with peers. A child who encounters aversive parenting is accordingly hampered in the development of appropriate social skills whereas a positive parent–child relationship allows the child to learn positive behaviors which enhance the development of peer relationships.

Parenting practices may influence not only children’s social behavior but also how they think about social situations. For example, harsh parenting may contribute to children’s hostile intent attributions. A child who is consistently the

target of aversive parenting might experience a feeling of rejection in the parent–child relationship which taints his expectations of success in other personal relationships (Hart et al. 1990; Pettit et al. 1991). Alternatively, positive parenting may buffer the child against hostile intent attributions and allow the child to develop coping skills to deal with potential provocations more flexibly (Domitrovich and Bierman 2001).

This perspective linking parenting and children's social information processing is consistent with the overall thrust of Rohner's parental acceptance–rejection theory (PAR-Theory; Khaleque and Rohner 2002). This perspective argues that children's psychological adjustment is directly related to the degree of acceptance they perceive from their parents. Hostility and aggression is described by Rohner as one of the primary reactions to perceived parental rejection. Given that aggressive behavior is often attended by hostile intent attributions, it would not be unexpected to find the latter to also be influenced by parenting practices. Similarly, attachment theorists have also posited that aversive parenting, particularly what may be considered child maltreatment, can disrupt the parent–child attachment process and subsequently contribute to a child's peer relationship difficulties (Crittenden and Ainsworth 1989). In particular, a child exposed to aversive parenting might develop an inner working model which promotes a hostile-world view, consistent with the idea of a hostile attributional bias.

The few studies which assess parenting and instrumental provocation situations (in the context of physical aggression) are consistent with the above ideas. For example, Weiss et al. (1992) found some evidence that kindergarten children who experienced higher levels of physical punishment by their parents were more likely to hold peer-related hostile attributional biases (of the instrumental variety). Palmer and Hollin (2000) compared perceptions of male delinquent offenders and non-offenders in regard to the parenting they received and explored the link to instrumental intent attributions. Results showed that offenders were more likely to perceive their fathers as rejecting and engaged in significantly higher levels of delinquency. However, for both groups, more rejecting and less warm parenting was predictive of hostile intent attributions, which in turn correlated with self-reported delinquency.

No study has yet assessed the relationship between parenting practices and children's relational intent attributions, which are a focus of research regarding relational aggression. The studies of parenting and instrumental intent attributions are also small in number. Accordingly, the first purpose of the current study is to explore how both aversive and positive parenting may be concurrently associated with children's intent attributions in response to instrumental and relational provocation scenarios. Consistent with the studies just described, we elected to focus on three important parenting dimensions.

First, Weiss et al. (1992) emphasized the contribution of physical punishment. We have included an assessment of corporal punishment in order to attempt to replicate their results and also ascertain whether physical discipline is predictive of relational hostile intent attributions as well. Second, the Palmer and Hollin (2000) results demonstrate that parental warmth and responsiveness should be negatively associated with children's tendencies to attribute hostile intent. In parenting research, parental warmth is often contrasted with parental hostility (as manifest in physical discipline). Third, psychological control has effectively been contrasted with behavioral control in recent years (Barber 1996, 2002). Whereas behavioral control focuses on control of a child's behavior, psychological control represents the parent's attempts to manipulate the child's psychological world. Moreover, behavioral control exists on a continuum in which an appropriate amount (being firm and demanding sufficient maturity in child behavior) is considered ideal (consistent with the idea of authoritative parenting). Permissive and authoritarian forms of parenting are defined by inadequate or overly restrictive levels of behavioral control, respectively. In contrast, since its inception as a parenting construct, psychological control has been considered to be inappropriate at any level as it undermines child psychological autonomy (Schaefer 1959, 1965a, b). Consistent with this perspective, Barber (1996) has defined psychological control as “a rather insidious type of control that potentially inhibits or intrudes upon psychological development...” (p. 3297). As noted earlier, psychological control has been the focus of early research on relational aggression as many of the tactics (e.g., love withdrawal, guilt induction, erratic emotional behavior) appear to mirror the relationally aggressive strategies employed by children. The results of these studies show psychological control to consistently be a predictor of child relational aggression, particularly for girls (e.g., Nelson and Crick 2002; Nelson et al. 2006). Since the child's psychological world is the focus of this form of parenting control, we hypothesized that the child's perceptions of the intent of others would certainly be affected.

Children's Feelings of Distress in Response to Perceived Provocation

Several of the studies described earlier have alluded to children's emotional distress in response to provocations. Admittedly, a social information processing perspective which ignores the central role of emotion in social decision making and action is incomplete (Lerner and Arsenio 2000). In general, children with behavioral problems often manifest deficits in emotional regulation and interpretation (e.g., Casey 1996; Cohen and Strayer 1996). In the case of

intent attributions, Lemerise and Arsenio (2000) outline a couple of ways in which emotions influence social cognition. First, pre-existing emotions may impair the child's appraisal of the situation. A child in a negative mood, for instance, may be more inclined to look for and interpret cues consistent with his current emotional state. Second, the child's initial appraisal may elicit emotions which, depending on their intensity and the child's self-regulation capabilities, may help or hinder further cognitive processing. Accordingly, a hostile attribution or an aggressive response to perceived provocation may in part reflect a child who is overcome by negative emotion and is reacting to a perceived threat.

Therefore, this study includes assessments of emotional distress in response to the same provocation scenarios for which intent attributions are measured. Previous studies by Crick and colleagues (Crick 1995; Crick et al. 2002) have shown that highly relationally aggressive children (with scores 1 SD beyond the mean) were more likely than their peers to feel distress in response to relational provocation. Girls were also more likely than boys to experience such distress. Moreover, physically aggressive children were more likely than their peers to experience distress in regard to instrumental scenarios. Accordingly, emotional distress, in response to ambiguous instrumental or relational provocations, appears to be a contributor to aggressive behavior in children.

To our knowledge, this is the first study to consider how parenting might be connected to children's emotional distress in the context of instrumental and relational provocations. However, studies that consider parenting and child outcomes more generally have shown important connections. For example, Roberts and Strayer (1987) demonstrated that parental reactions to their young children's emotional distress, if these reactions were appropriate in levels of warmth and control, were predictive of children's greater social competence. Similarly, Davidov and Grusec (2006) have found that parental warmth and responsiveness to distress were linked to better affect regulation in children. Operario et al. (2006) also found that parental warmth was associated with less emotional distress in adolescents, particularly females. Accordingly, the second purpose of the present study is to address how parenting might be related to children's emotional distress in response to ambiguous instrumental and relational provocations.

Hypotheses

This study focuses on the association of positive and negative parenting dimensions with children's intent attributions and emotional distress in response to ambiguous instrumental and relational provocation scenarios. Although these child behaviors are commonly linked to aggressive

behavior in children, this study is designed to assess whether, irrespective of the child's engagement in aggressive behavior, parenting might be associated with negative perceptions of others and more reactive feelings in socially challenging situations. In regard to intent attributions, we expected that negative forms of parenting (corporal punishment and psychological control) would be positively associated with children's hostile intent attributions (both instrumental and relational). Of these two forms of aversive parenting, we anticipated that psychological control would be most influential. Conversely, we expected that parental warmth and responsiveness would be negatively associated with children's hostile intent attributions. Similarly, we expected that children's emotional distress would be positively associated with aversive parenting but negatively associated with parental warmth and responsiveness.

We also expected that children's emotional distress would be significantly correlated with their intent attributions. In light of past research (Crick et al. 2002), we also expected girls would find relational provocations to be more distressing than boys. Furthermore, in all of the analyses that follow, sex of child and parent are considered, given that previous research often demonstrates that patterns of findings may vary across parent-child dyads (e.g., Nelson and Crick 2002; Strassberg et al. 1994). We were particularly interested in the connections between paternal parenting and child outcomes, given that previous research has found fathers' intent attributions to be predictive of their children's relational aggression but not their children's intent attributions (Nelson et al. 2008). We thought it likely that fathers' parenting would be significantly associated with both intent attributions and emotional distress.

Method

Participants

The sample consisted of 242 fourth-grade children (111 boys, 131 girls) and their parents from two school districts (16 classrooms) in an urban, moderate-sized community in the Western United States. The sample was composed of the following ethnic groups: 90.2% Caucasian, 2.4% Latino, and a 7.3% mix of other ethnicities (Native American, Asian, Polynesian, Biracial). There was significant diversity in the range of reported household income. Approximately 4.5% of the sample reported annual household income of less than \$20,000; 27.1% reported income from \$20,000 to \$50,000; 37.5% of the sample had income ranging from \$50,000 to \$90,000; 27.6% of the sample had annual income from \$90,000 to more than \$150,000; and 3.3% of the sample declined to answer.

Of the 242 households, 23 were single-mother led (divorced, widowed, or never married). In the 219 dual-parent households, all mothers but one (99.5%) participated in the home survey where the parenting questionnaire was administered. Fathers elected to participate in 84.5% of households (185 fathers). We conducted analyses to determine whether the children in the single-mother families might significantly differ from children in dual-parent households in their intent attribution or emotional distress. In these analyses, the children in dual-parent households were further subdivided by whether the father participated (i.e., the 34 dual-parent households in which the father did not participate were also compared against dual-parent households with both parents participating). No significant mean differences were obtained in these analyses. Accordingly, we elected to analyze the data of all 219 dual-parent families so that fathers might be considered in analyses. There were 101 boys and 118 girls in these 219 households.

Of these dual-parent households, the majority (89.9%) were composed of two biological parents. An additional 6.4% were stepfather families, and 1.4% were stepmother families. Only 0.5% of families were adoptive families. The remaining families (1.8%) were other configurations, such as grandparents raising grandchildren. There was also a range of family sizes. The vast majority of children (99.5%) had siblings, and the average number of children in a family was 4.37 (SD=1.70).

Procedure

Consent forms were distributed to all fourth-grade classrooms and asked parents to consent to individual home-based family interview as part of a larger study. The consent rate for the individual home interviews was 68.8% (242 families out of a potential 352 families elected to participate in the home interviews). Children were also asked to assent to their participation before the interview began, and every single child assented after their parents consented. All measures analyzed in this study were administered during this home interview. The interviews lasted approximately 1 h, with the inclusion of several other measures which are not analyzed in the current study. A research assistant was dedicated to work with each family member during these interviews in order to ensure independent completion of the measures. Families received \$5 for child participation and \$10 for the participation of each parent (i.e., a two-parent family could receive \$25).

Instrumentation

Assessment of Intent Attributions This study incorporated a slightly modified version of the hypothetical-situation

instrument created by Crick and colleagues (Crick 1995; Crick et al. 2002). The instrument consisted of ten provocative situations in which the intent of the provocateur is ambiguous. Five of the situations represented instrumental provocations (e.g., a peer pushes the child into a mud puddle from behind) and five stories depicted relational provocations (e.g., two peers laugh when they are whispering and looking at the child in the hallway). Nelson et al. (2008) have identified one of the Crick relational scenarios which failed to load with other relational provocations in confirmatory factor analysis. Accordingly, one relational situation developed by Nelson and colleagues has been substituted for that item (nine of the ten situations are equivalent to those used by Crick in past research).

Children responded to two questions for each provocation scenario, with both providing a measure of attribution of intent. For example, in one relational provocation, two children walk by a child, look at the child, and then laugh. The first question presented four possible reasons for the provocateur's action, with two reasons reflecting benign intent (e.g., they were laughing at a joke) and two reflecting hostile intent (e.g., they were making fun of me). The second question was more straightforward: children were asked to choose whether the provocateur was trying to be mean (i.e., hostile intent) or not trying to be mean (i.e., benign intent). For each question, benign attributions were coded as zero and a hostile attribution was given the score of 1.

Children's responses to the two questions were highly correlated (most often with correlations above 0.90) and were therefore summed within each specific story and then within story type to yield two intent attribution scores. The two scale scores for instrumental intent attributions and relational intent attributions, respectively, could range from 0 to 10. Computation of Cronbach's α revealed that both scales were reliable ($\alpha=0.88$ for the instrumental provocation situations and $\alpha=0.80$ for the relational provocation situations). These alphas are consistent with those obtained in previous research (Crick et al. 2002).

Assessment of Feelings of Distress Children's feelings of distress were assessed with the same procedure employed by Crick and colleagues (Crick 1995; Crick et al. 2002). This involved a third question in response to the instrumental and relational provocation scenarios. Children rated how mad or upset they would be if "the things in the story really happened to you." In Crick's earlier studies, two items represented mad and upset feelings. However, they were so highly correlated that they were combined. In our methodology, these items were reconfigured into one representative item. The response scale we employed for these items ranged from 0 (not mad or upset at all) to 2 (very mad or upset). Accordingly, when summed across the five stories within each provocation type, scores could

range from 0 to 10. Computation of Cronbach's α revealed that both scales were reliable ($\alpha=0.71$ for the instrumental provocation situations and $\alpha=0.65$ for the relational provocation situations). Again, these alphas are consistent with those obtained by Crick et al. (2002).

Assessment of Parenting Dimensions Mothers and fathers independently completed a self-report parenting questionnaire composed of a large bank of items adapted from measures of authoritarian and authoritative dimensions of parenting (Robinson et al. 2001) as well as psychological control (see Barber 1996; Nelson and Crick 2002). Parents rated the frequency of their own engagement in specific parenting behaviors with a five-point Likert-type scale (1=Never; 5=Always). Parents were specifically instructed to respond to each question in terms of how they parented the target (fourth-grade) child (rather than their general parenting across all children). The authoritative dimension was composed of four items which focused on parental warmth and responsiveness (e.g., I joke and play with my child; I am responsive to my child's feeling and needs). The corporal punishment dimension was composed of four items (e.g., I spank my child when he is disobedient; I slap my child when she misbehaves). The psychological control was composed of eight items (e.g., When I am mad at my child, I ignore or stop listening to him; I make my child feel guilty when she does not meet my expectations). A greater number of items were included in the psychological control scale in order to represent a number of different dimensions of such control (i.e., love withdrawal, guilt induction, erratic emotional behavior, invalidating feelings, and constraining verbal expressions; see Barber 1996). Consistent with previous research, all of the parenting scales were found to be reliable, with Cronbach's α equal to 0.61, 0.79, and 0.65 for mothers' warmth/responsiveness, corporal punishment, and psychological control scales, respectively, and 0.60, 0.80, and 0.65 for fathers' warmth/responsiveness, corporal punishment, and psychological control scales, respectively.

Results

Descriptive Statistics and Preliminary Analyses

Table 1 shows the means and standard deviations of all variables included in the study, as well as the intercorrelations among all study variables. These descriptive statistics are shown separately for boys and girls, given our interest in exploring how variables might associate differently for the various parent-child dyads (e.g., father-son, mother-daughter). Many of the patterns in the correlational findings and preliminary analyses provided justification for this

approach. To begin with, the correlations among the child variables showed that, for both boys and girls, intent attributions and emotional distress items were all significantly correlated (with correlations ranging from 0.26 to 0.58 for boys and from 0.26 to 0.62 for girls). The majority of the correlations among the parenting variables were also significant, and in expected directions, especially for girls. Specifically, corporal punishment and psychological control were positively correlated, and both of these were negatively correlated with warmth and responsiveness, particularly within informant.

The primary correlations of interest were those assessing correspondence between parent and child variables. In the correlations for boys, only the father variables were significantly associated with boys' intent attributions and emotional distress. In particular, paternal psychological control was positively related to boys' instrumental ($r=0.41$, $p<0.001$) and relational intent attributions ($r=0.25$, $p<0.05$). In contrast, paternal warmth and responsiveness was negatively related with boys' relational intent attributions ($r=-0.23$, $p<0.05$) and trended toward a negative association with boys' instrumental intent attributions ($r=-0.20$, $p<0.10$). In regard to boys' emotional distress, paternal psychological control was positively associated with greater distress in response to instrumental provocations ($r=0.22$, $p<0.05$). Paternal warmth and responsiveness, in contrast, trended toward a negative association with boys' reported distress in instrumental situations ($r=-0.19$, $p<0.10$). In regard to boys' emotional distress in relational provocations, paternal warmth and responsiveness was negatively associated ($r=-0.30$, $p<0.01$).

For girls, fewer associations were obtained. Again, the significant associations were with the paternal variables only. Specifically, girls' instrumental intent attributions were positively related to paternal corporal punishment ($r=0.20$, $p<0.05$) and negatively related to paternal warmth and responsiveness ($r=-0.21$, $p<0.05$). There was also a statistical trend for paternal corporal punishment to be positively associated with girls' relational intent attributions ($r=0.18$, $p<0.10$). No significant correlations emerged between parenting dimensions and either of the emotional distress variables for girls.

Furthermore, in prelude to the principal analyses of the present study, we conducted several sets of analyses to determine whether gender differences would emerge in means of the child variables or the approach of parents to childrearing. For all significant results in these analyses, refer to Table 1 for the respective means and standard deviations. First, univariate analyses of variance (ANOVAs) were conducted to determine whether boys and girls differed in their intent attribution or emotional distress scores. Only one of these analyses emerged significant. As

Table 1 Descriptive Statistics and Correlations by Gender of Child

	1	2	3	4	5	6	7	8	9	10
Mean	3.89	4.91	7.02	3.95	1.33	1.51	4.04	3.80	1.78	1.96
SD	3.35	2.37	2.09	1.94	0.39	0.49	0.44	0.53	0.35	0.41
1. Child instrumental intent attributions	–	0.33**	0.56***	0.27**	0.17	0.00	–0.04	–0.20 ⁺	0.02	0.41***
2. Child relational intent attributions	0.51***	–	0.26**	0.58***	0.00	0.05	–0.04	–0.23*	0.05	0.25*
3. Child instrumental distress	0.62***	0.45***	–	0.46***	–0.06	–0.18	0.04	–0.19 ⁺	–0.10	0.22*
4. Child relational distress	0.26**	0.59***	0.37***	–	–0.02	–0.13	–0.08	–0.30**	0.00	0.15
5. Maternal corporal punishment	0.02	0.09	0.09	0.01	–	0.32**	–0.19 ⁺	–0.08	0.49***	0.17 ⁺
6. Paternal corporal punishment	0.20*	0.18 ⁺	0.05	–0.03	0.47***	–	0.01	–0.21 ⁺	0.13	0.36***
7. Maternal warmth & responsiveness	–0.03	–0.15	–0.05	–0.10	–0.34***	–0.14	–	0.03	–0.36***	0.12
8. Paternal warmth & responsiveness	–0.21*	0.01	–0.09	0.02	–0.09	–0.10	0.24*	–	–0.02	–0.45***
9. Maternal psychological control	–0.06	0.05	–0.01	–0.02	0.42***	0.12	–0.56***	–0.17 ⁺	–	–0.04
10. Paternal psychological control	0.17	0.02	0.02	–0.01	0.28**	0.26*	–0.24*	–0.45***	0.33**	–
Mean	3.19	5.07	6.64	5.03	1.33	1.35	4.00	3.95	1.90	1.88
SD	3.13	2.67	2.06	2.15	0.37	0.37	0.45	0.50	0.36	0.38

Upper diagonal: descriptive statistics and correlations for boys; lower diagonal: descriptive statistics and correlations for girls
⁺ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

expected, girls had significantly higher emotional distress scores than boys in response to the relational provocations; $F(1, 218) = 14.95, p < 0.001$.

Additional univariate ANOVAs allowed for detection of whether fathers or mothers differentially parented sons and daughters. Results showed that fathers reported greater levels of corporal punishment with sons than with daughters; $F(1, 184) = 6.39, p < 0.05$. In contrast, fathers reported higher levels of warmth and responsiveness with daughters than with sons; $F(1, 184) = 4.30, p < 0.05$. Mothers reported greater engagement in psychological control with daughters than with sons; $F(1, 217) = 6.24, p < 0.05$. All other tests were non-significant.

Next, paired-sample *t* tests were conducted to determine, within gender of child, whether mothers and fathers differed in their parenting. None of these analyses emerged significant for girls. For boys, however, mothers and fathers differed significantly in all of the parenting dimensions. First, fathers reported engagement in significantly higher levels of corporal punishment than mothers with their sons, $t(86) = -3.00, p < 0.01$. Fathers were also higher than mothers in their self-reported practice of psychological control with sons, $t(86) = 3.05, p < 0.01$. Mothers, however, showed significantly higher levels of warmth and responsiveness with their sons than did fathers, $t(86) = -2.83, p < 0.01$. In summary, the results of these preliminary analyses, as well as the structure of the intercorrelations, provided adequate justification for our decision to conduct further analyses by gender of child.

Multiple-Group, Multivariate Multiple Regressions

A multiple-group, multivariate multiple regression was conducted in SEM with the Analysis of Moments Structure (AMOS) software (Arbuckle and Wothke 1999). The regression was run using full information, maximum likelihood estimation in order to account for missing data (34 missing fathers and one missing mother). The purpose of this regression model was to assess the predictive contributions of parenting variables within the context of one another. In this model, parenting variables predict both children's intent attributions and emotional distress. This model was analyzed separately for boys and girls; the results are therefore described by gender of child below. The model was a fully saturated model, so fit statistics are not reported. In addition, in order to simplify the graphical presentation of the results, the correlated disturbances of the endogenous variables, as well as the intercorrelations between all exogenous variables, are not pictured. The correlated disturbances are available for review in Table 2.

In the model predicting boys' intent attributions and emotional distress, one particular form of parenting emerged as a significant predictor of intent attributions.

Table 2 Magnitudes of the Correlated Disturbances for the Respective SEM Models

Correlated disturbance	Boys	Girls
e1 ↔ e2	0.53***	0.62***
e1 ↔ e3	0.22*	0.28**
e1 ↔ e4	0.27*	0.53***
e2 ↔ e3	0.40***	0.38***
e2 ↔ e4	0.21*	0.45***
e3 ↔ e4	0.57***	0.60***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Specifically, in the context of all other parenting variables, paternal psychological control emerged as a significant predictor of instrumental intent attributions in boys and the association with relational intent attributions was nearly significant ($p = 0.06$; see Fig. 1). These results are consistent with the zero-order correlations described earlier. Although paternal warmth and responsiveness was a significant predictor of boys' intent attributions at the zero-order level, it no longer predicted these outcomes in the multivariate model. An additional finding emerged in which paternal corporal punishment negatively predicted boys' instrumental intent attributions, even though these variables were uncorrelated at the zero-order level. Accordingly, this finding appeared to be evidence of a suppressor effect.

In regard to the prediction of boys' feelings of distress, significant associations were consistent with the patterns in the zero-order correlations. In particular, paternal psychological control positively predicted boys' feelings of distress in response to instrumental provocations whereas paternal warmth and responsiveness was negatively predictive of boys' feelings of distress for relational provocations. In a multivariate context, paternal corporal punishment also emerged as a negative predictor of feelings of distress for both instrumental and relational provocations.

Only one marginally significant finding was evident in the model in which parenting dimensions predicted girls' intent attributions and emotional distress. In particular, paternal corporal punishment tended to be positively associated ($p = 0.07$) with girls' instrumental intent attributions. Again, in a multivariate framework, paternal warmth and responsiveness failed to emerge as a significant predictor (in spite of the significant association at the bivariate level; see Fig. 2).

Discussion

The aim of this study was to explore whether the parenting practices of fathers and mothers might correlate with children's hostile or benign intent attribution styles, as well

as more or less emotional distress in relation to potential peer provocations. The concurrent nature of the data renders it impossible to know whether a causal relationship is indicated between these parenting and child variables. Notwithstanding, this study makes several novel contributions to the existing literature. This investigation is the first to assess how parenting might be related to children's intent attributions in response to relational provocations. It is also the first study to address the connection between parenting and children's emotional distress reactions to both instrumental and relational provocation scenarios. Furthermore, the relation between parental psychological control and these child variables has never been assessed in prior research. We were particularly interested in how father variables may be predictive of child variables as recent research found no connection between fathers' and children's peer-oriented intent attributions (instrumental and relational; Nelson et al. 2008). In contrast, we anticipated that fathers' parenting practices would emerge as significant predictors of children's intent attributions and feelings of distress.

We focused on warmth and responsiveness, corporal punishment, and psychological control as parenting dimensions. We did so, in part, as previous studies have focused on these parenting constructs in the prediction of physical and relational aggression. These subtypes of aggression may in turn be expected to relate to the child constructs in the present study (Crick et al. 2002; Nelson et al. 2008). In studies which consider both forms of aggression, fathers' parenting practices have consistently emerged as significant predictors. For example, Hart et al. (1998) found that maternal coercion and paternal responsiveness were the most significant predictors of physical and relational aggression in Russian preschoolers (see also Hart et al. 2000). In a U.S. middle-childhood sample, Nelson and Crick (2002) found maternal and paternal coercive control to be predictive of both forms of aggression for boys, whereas paternal psychological control predicted relational aggression in girls. Furthermore, with a sample of Chinese preschoolers, Nelson et al. (2006) found parental coercive control to be the best predictor of both forms of aggression in boys, whereas psychological control was most consistently associated with aggression in girls. The extent that fathers uniquely engaged in psychological control, relative to mothers, was also predictive of girls' relational aggression. Research with a Belgian middle-childhood sample has also shown, for both mothers and fathers, that psychological control is predictive of relational aggression and physical punishment is predictive of physical aggression (Kuppens et al. 2008).

Accordingly, the results of all of these studies suggest that parents (and particularly fathers) may play a significant role in the development of both physical and relational

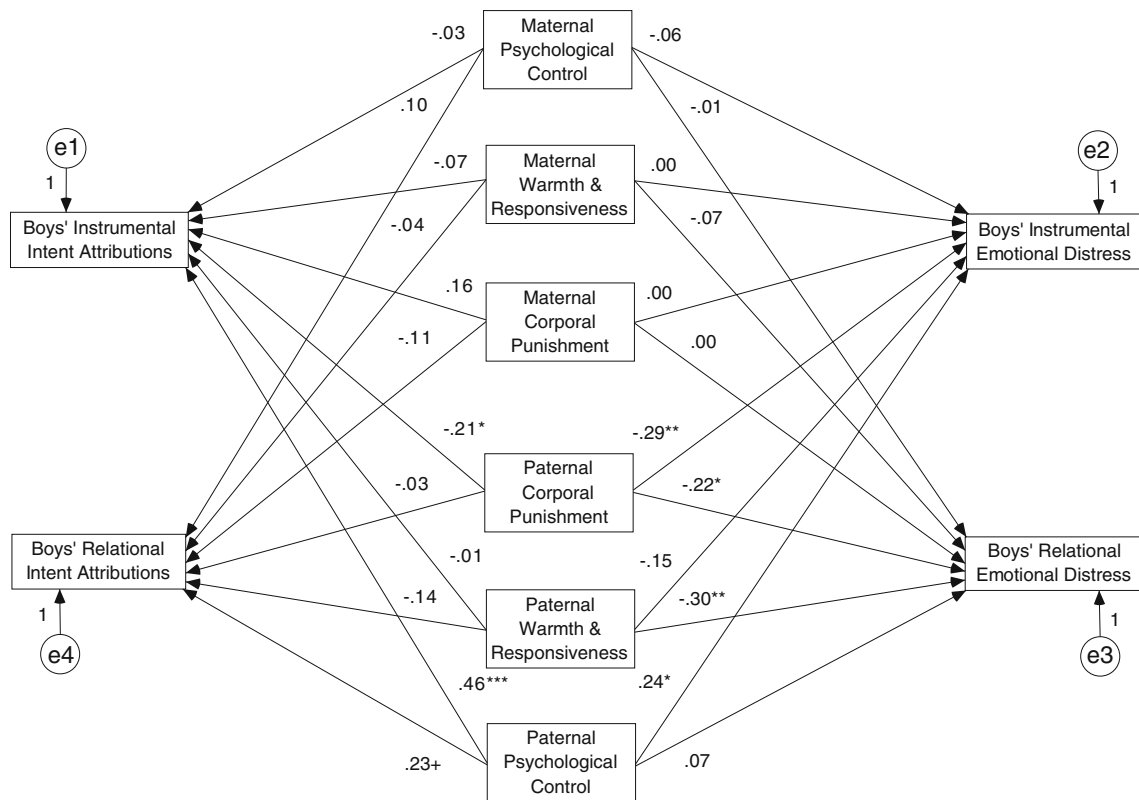


Fig. 1 SEM multiple-group multiple regression: relations of parenting dimensions to boys' intent attribution and emotional distress scores. Note. + $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

aggression in their children. It was therefore not unreasonable to expect that parenting may be linked to the intent attributions and emotional reactivity of their children. The findings of this study were generally consistent with our expectations, but we were surprised to see significant findings emerge only in father–child relationships. No significant associations emerged in connection with maternal childrearing (just a couple of statistical trends).

Bivariate associations showed that fathers' warm and responsive parenting was associated with more benign attributions for both boys and girls and less emotional distress in boys. Accordingly, these findings reinforce the results of many studies showing the importance of parental warmth for children's social competence (e.g., Davidov and Grusec 2006). In contrast, paternal corporal punishment was associated at the bivariate level with increases in girls' hostile attributions (but not boys') whereas paternal psychological control coincided with higher hostile intent attributions and feelings of distress in boys. Most of these effects remained in the regression model for boys. Accordingly, as suggested by Rohner's PARTheory (Khaleque and Rohner 2002), aversive parenting appears to communicate rejection to the child and elicit maladaptive child responses to parents or peers, and this was most evident with boys.

Moreover, paternal psychological control was a particularly strong predictor for boys, both in bivariate correlations and in the regression models. The results of this study therefore provide further evidence that psychological control is a form of aversive parenting that can uniquely account for negative child outcomes, above and beyond the influence of behavioral control (Barber 2002). A father's manipulation of his son's psychological autonomy may therefore taint the boy's ability to give others the benefit of the doubt and resist negative emotion in the face of potential provocation.

It is also notable that psychological control and corporal punishment (representing excessive behavioral control) did not differentially predict child reactions to instrumental or relational provocations. This is consistent with the results of most studies, described above, of parenting and aggression subtypes (physical or relational). The conceptualization of these studies was originally based on the premise that aggression should match the form of parenting displayed, based on a social learning model. Accordingly, parental physical punishment was hypothesized to predict children's physical aggression whereas parental psychological control would predict relational aggression. Findings show, however, no such specificity but rather a generalized connection between aversive parenting and child aggression

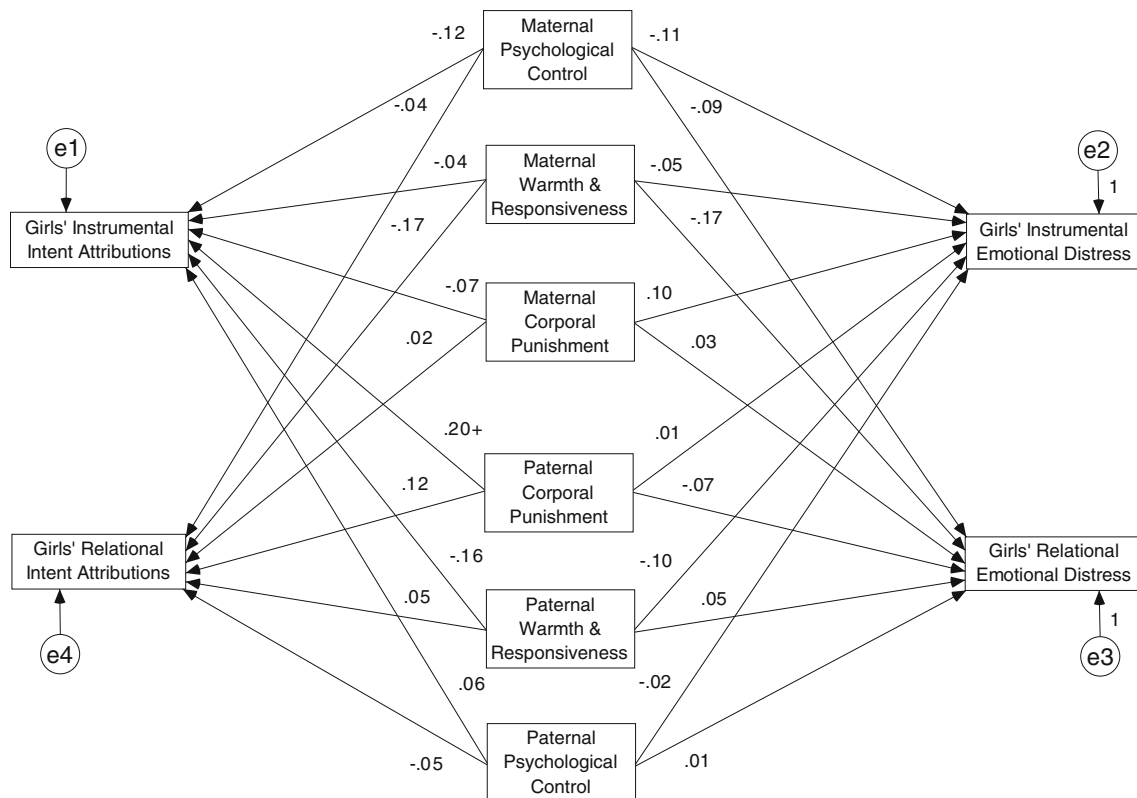


Fig. 2 SEM multiple-group multiple regression: relations of parenting dimensions to girls' intent attribution and emotional distress scores. Note. $+p<0.10$; $*p<0.05$; $**p<0.01$; $***p<0.001$

(Nelson et al. 2006). Similarly, negative parenting is associated with intent attribution or emotional distress scores for either instrumental or relational provocations.

As noted earlier, Nelson et al. (2008) found children's instrumental and relational intent attributions mirrored their mothers' intent attributions but not their fathers'. Accordingly, one interpretation of the results of this study is that mothers may be modeling intent attributions for their children whereas fathers might influence intent attributions in a different manner (assuming the direction of effect to be from parent to child). The results of the present study suggest that fathers' parenting practices may prove influential in this regard. The overall tone of the father-child relationship may play an important role in how children tend to interpret peer provocations. Children, particularly boys, may be taking important cues about relationships from father-child interactions. One reason why the connections may be more prominent in the father-son relationship is that fathers prefer sons and spend more time with them than with daughters (see Parke 1996, for a review). There is also evidence that, early in life, girls also show a shift away from fathers to mothers as playmates (Lynn and Cross 1974). A higher level of involvement of fathers with sons than with daughters should create more opportunity for paternal influence on boys.

Our interest in fathers coincides with a general proliferation of fathering research over recent decades (Amato and Rivera 1999; Lamb 2004; MacDonald and Parke 1984). In many studies, father influence appears to actually carry greater weight than maternal influence for some child outcomes (e.g., Carson and Parke 1996). According to the results of the present study, this appears to be one of those cases where the parental influence is not only stronger in fathers but may be exclusive to fathers. In any case, the results of the present study strongly suggest the importance of assessing parent-child relationships by gender of parent and child. Parents may differ in influence, and boys and girls may respond differently to the parenting they receive. As a result, any clinical intervention regarding aggression and its correlates should involve both parents, as it appears that parents may play a unique role in the way children think about and respond to aggression.

In addition to the lack of findings for mothers, it is also notable that girls' reports of emotional distress were completely unrelated to the parenting of either parent. These findings appear to contrast markedly with the results of studies mentioned earlier, which suggest that parental warmth is predictive of greater social competence as well as less emotional distress. Although the assessments of emotional distress in this study are in response to

ambiguous hypothetical situations, both boys and girls reported, on average, a moderate level of anger. There was also sufficient variability in the emotional distress scores. Accordingly, it is notable that something other than parenting appears to inform how girls respond emotionally to ambiguous hypothetical provocations, at least at this particular age.

It seems likely that peer influence might play a role in children's emotion distress, such as the emotional reactions of close friends. In a recent review of the literature, von Salisch (2001) outlined how parents, peers, and friends provide differential support in emotion regulation. Emotional distress is not consonant with emotion regulation, as the latter is often a matter of effectively masking the former. Yet they are connected, and parents, as attachment figures, help to promote emotion regulation for their children from an early age. Parents' greater maturity and experience with relationships also allows them to be helpful tutors in their children's emotional learning. Children also learn much about emotion from peers, who regularly reinforce display rules about what types of emotion are acceptable in the peer group. Children who fail to attend to these rules may suffer peer rejection. Intimate friendships further refine the child's emotion regulation, particularly in later years when relationship issues are increasingly more complex and loyalties are tested. In these situations, management of anger appears to be particularly relevant.

Close friendship may therefore be one important influence for the emotion processing of fourth-grade girls, outweighing the influence of parents. There are several good reasons to suspect that this is the case. First, it is well known that girls tend to emphasize involvement in intimate, dyadic peer interaction (Crick and Grotpeter 1995) and tend to report closer friendships than do boys (Bukowski et al. 1994). This is one of the reasons why girls tend to engage in higher levels of relational aggression than boys, beginning in childhood (Archer 2004). Relationship closeness gives girls more tools to engage in relational aggression. Second, recent evidence specifically details how girls are more likely than boys to turn to same-sex peers in dealing with negative emotion.

Rose (2002) has recently proposed a new construct, "co-rumination," which refers to "extensively discussing and revisiting problems, speculating about problems, and focusing on negative feelings" (p. 1830). Essentially, it is self-disclosure with a negative focus. Assessing this construct from the third to the ninth-grade, Rose found that co-rumination was related to not only high-quality friendships but also higher levels of depression and anxiety. Girls reported engagement in co-rumination more than boys, and the gender difference widened into adolescence. Interestingly, there was no mean difference in boys' co-rumination scores between the third and the ninth grade. This suggests that self-disclosure

may be a different process for boys and they may be more open to input from their parents, particularly fathers. In addressing co-rumination, we do not intend to imply that parents do not have an effect on the socialization of emotion in girls. Theoretically, it may be that parental influence is strongest for girls in early childhood. Alternatively, there are perhaps other mechanisms of parental influence at work (which we did not assess). In particular, mothers may be particularly effective in socializing emotion if they engage in co-rumination with their daughters, consistent with peer-group experiences.

There was one unexpected finding which emerged in the regression models. Paternal corporal punishment emerged as a negative predictor of boys' emotional distress levels in response to instrumental and relational provocations. These associations were also consistent with the pattern of the bivariate correlations, which showed a modest negative correlation between these child variables and paternal corporal punishment (although the correlations were marginally significant or non-significant). This was puzzling, suggesting that the more fathers practice physical discipline, the less emotionally distressed their boys tend to be in their response to hypothetical provocations.

It should be noted that the mean level of paternal corporal punishment for boys was 1.51 (SD=0.49), midway between 1 ("Never") and 2 ("Once in a while") on the scale. Accordingly, fathers on average were reporting very infrequent use of corporal punishment. It therefore provokes the question as to whether the occasional use of corporal punishment may have some modest salutary effect for boys. The finding is all the more intriguing when contrasting fathers' corporal punishment and psychological control, the effects of which went in opposite directions. This finding emerged in spite of the fact that these dimensions were moderately correlated for fathers of boys ($r=0.36$, $p<0.001$).

Significant controversy exists over the effects of corporal punishment, with the perspective of some researchers offering what appears to be a blanket injunction against the practice whereas others either consider the negative effects to be overstated or alternatively argue that mild spanking may actually promote child compliance (cf. Baumrind et al. 2002; Gershoff 2002). Moreover, several researchers have suggested that the child's perception of the normative nature of parenting behaviors may partially determine the overall effect of parenting (e.g., Chao 1994; Lansford et al. 2005). If boys this age consider an infrequent spanking to be a normative aspect of father-son relationships, the negative influence of spanking may be blunted (at least in regard to emotion outcomes).

There is also significant evidence that fathers play a key role in the socialization of emotion for boys. Zeman and Garber (1996), for instance, have demonstrated that older

children (similar in age to our sample) generally perceive their fathers, as compared to mothers, to be less tolerant of negative emotional displays like anger. The potential displeasure of a father may inspire boys to reconfigure how they process upsetting events. By extension, fathers who are more intolerant of negative emotion may be apt to engage in harsh discipline such as spanking. Fathers who spank more may also be perceived as more intimidating, which may give sons greater reason to embrace limited emotion in response to ambiguous provocations. Our emotional distress items do not directly assess emotional display, but it is likely that socialization against emotional display may reduce levels of felt emotion as well.

Alternatively, fathers who report more engagement in spanking may simply be more involved in childrearing, with the latter promoting greater social competence. Indirect evidence of this is found in the bivariate correlations, wherein the negative correlation between paternal corporal punishment and warmth and responsiveness is weak ($r=-0.21$, $p<0.10$ for fathers of boys). Paternal involvement is key as considerable research shows that fathers play a unique role in helping their children adjust to stressful situations (Parke 1996), and an ambiguous provocation scenario certainly has the potential to induce stress. Beginning in infancy, more paternal involvement is related to children's increased ability to respond favorably to strangers and strange situations, and this is particularly apparent for boys (Kotelchuck 1976; Pedersen et al. 1979). In general, evidence of the impact of fathers on child emotion is significant enough that Parke et al. (2002) have concluded that it is the domain where "fathers may have the greatest impact on their children's social relations with peers and friends" (p. 153).

In addition to the many strengths of the present study, we have already noted some of the many caveats regarding the interpretation of the results of this study. The hypothetical nature of the provocation scenarios is chief among these concerns. Nonetheless, Steinberg and Dodge (1983) have also demonstrated that children's actions in a real-life provocation often parallels how the children might respond to hypothetical scenarios. In their study, aggressive and nonaggressive were placed in a contrived social situation in which a confederate peer ambiguously destroyed a block building which the child had just constructed. In this situation, nonaggressive children attributed hostile intent only 14% of the time, in comparison with aggressive children, who made the same attribution 61% of the time. Accordingly, we should not be too quick to dismiss children's answers to hypothetical provocation scenarios, as the results of observation of real-life behavior tends to coincide well with the results of the ambiguous provocation studies.

There are other concerns as well. First, it is unclear whether the above associations will hold across all cultures

and subcultures, particularly given the predominantly Caucasian make-up of the sample. Family size is another cultural aspect present in this data which may weaken the generalization of findings. With an average of over four children per household, the families in this sample were clearly larger than the usual American family. Accordingly, the connection between parent and child variables may be underestimated if a greater number of siblings translates into less parent-child interaction for each individual child. On the other hand, this sample may provide a reliable estimate of father influence, given that the majority of these children live with their biological father and are potentially afforded greater opportunity for father-child interaction, in contrast with the many children who grow up in households where connection to a biological father is limited.

Next, the assessment of parenting can be accomplished in a number of ways. The use of self-reports of parenting, in particular, could produce misleading results, as parents may underreport their actual engagement in aversive parenting or overreport their positive parenting. This may be particularly true for mothers, for whom no associations with child outcomes emerged. Social desirability may also vary by gender of child, which may be reflected in more or less agreement between parents. At least in the parenting of sons, mothers self-reported significantly less engagement in aversive parenting and significantly higher levels of warmth and responsiveness over fathers. However, parents did not differ in their mean levels of parenting with daughters. Some authors have argued for the potentially greater validity of spouse reports (Nelson et al. 2006) although such reports have unique drawbacks as well. Parenting self- or spouse-reports may also differ significantly from children's perceptions of their parents' parenting. How children perceive their parents' parenting, be it more or less accurate, may be more highly correlated with child outcomes. A multi-informant approach in future studies would help clarify these issues. One benefit of spouse- or child-reports is that we might have some understanding as to whether the 15% of fathers who chose not to participate might be different from the remaining sample (based on mothers' or children's perceptions).

In any case, the results of this and previous studies suggest that the formation of children's intent attributions and feelings of distress is a complex process with many potential contributors. Mothers and fathers may model more or less adaptive patterns for processing social information. The overall tone of parenting may also undermine or reinforce more positive patterns of interpreting social cues or dealing effectively with social disappointments (as manifest in feelings of distress). Beyond parents, the presence of siblings may also prove formative. Children may learn some patterns of social information processing via sibling interaction or modeling, and this learning potentially varies

according to the gender configuration and age gap among siblings. Finally, peers and best friends may also contribute in significant ways to more or less adaptive responding. It is an important endeavor to illuminate these pathways as proper social information processing skills loom large in a child's overall social competence (Crick and Dodge 1994).

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