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Towards Greater Specificity in Identifying Associations Among Interparental Aggression, Child Emotional Reactivity to Conflict, and Child Problems

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Abstract

This study examined specific forms of emotional reactivity to conflict and temperamental emotionality as explanatory mechanisms in pathways among interparental aggression and child psychological problems. Participants of the multi-method, longitudinal study included 201 two-year-old children and their mothers who had experienced elevated violence in the home. Consistent with emotional security theory, autoregressive structural equation model analyses indicated that children's fearful reactivity to conflict was the only consistent mediator in the associations among interparental aggression and their internalizing and externalizing symptoms one year later. Pathways remained significant across maternal and observer ratings of children's symptoms and with the inclusion of other predictors and mediators, including children's sad and angry forms of reactivity to conflict, temperamental emotionality, gender, and socioeconomic status.

Interparental aggression is a prominent threat to the welfare of young children (Margolin & Gordis, 2000). Preschool children are significantly more likely to be exposed to violence between parents than their school-aged counterparts (Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997). Likewise, emerging evidence supports the notion that children exhibit disproportionate vulnerability to interparental aggression during the preschool years, with exposure substantially increasing the likelihood of child internalizing and externalizing problems (Kitzmann, Gaylord, Holt, & Kenny, 2003; Lieberman, Van Horn, & Ozer, 2005). Consistent with the high societal importance attached to explicating the nature of risk faced by children from high conflict homes, children's emotional responses to conflict are regarded as pivotal mechanisms in understanding their adaptation and maladaptation (Crockenberg & Langrock, 2001a; Rhoades, 2008). Although theories have differentially emphasized the role of specific emotions (i.e., fear, sadness, anger) as mechanisms underlying the vulnerability of children who are exposed to high levels of interparental aggression, little is known about how distinct forms of emotional reactivity advance an understanding young children's adjustment to aggression between their parents. Therefore, the overarching goal of this study is to examine these specific parameters of emotional

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reactivity to conflict as explanatory mechanisms in pathways between interparental aggression and preschool children's psychological difficulties.

As prevailing emotion-based conceptualizations of interparental conflict, social learning theory (Margolin, Oliver, & Medina, 2001), emotional security theory (Davies & Cummings, 1994), and specific emotions theory (Crockenberg & Langrock, 2001b), share a similar subset of assumptions as to why aggression between parents represents a significant risk factor for children's psychological problems. According to these theories, repeated exposure to interparental hostility takes a direct toll on the integrity of children's emotional responses to conflict. In each theory, a pivotal hypothesis is that repeated exposure to interparental aggression increases children's tendencies to exhibit greater negative emotional arousal and dysregulation. As children's experiences with negative affect in contexts of antagonistic interparental interactions intensify and broaden, a corollary premise is that they become increasingly vulnerable to developing psychological problems.

Through different accounts of the role of specific forms of emotional reactivity as mechanisms, the three theories collectively underscore the operation of angry, fearful, and sad reactivity as potential mechanisms mediating the risk posed by interparental aggression. According to social learning theory, observational and enactive learning processes are primary mechanisms organizing children's responses to interpersonal hostility (Bandura, 1973; 1983; Eron, Heusmann, & Zelli, 1991). Consistent with the observational learning component of the theory, exposure to interparental aggression is postulated to provide children with opportunities to master new ways of enacting hostile behavior through vicariously observing adults engage in aggressive conflict tactics. Subsequent increases in displays of anger and hostility by children when exposed to interparental aggression are theorized to emerge through their emulation of hostile behaviors and reductions in inhibitions about aggressing (Cox, Paley, & Harter, 2001; Emery, 1982; Margolin et al., 2001; Zimet & Jacob, 2001). Highlighting enactive mechanisms (Eron et al., 1991), social learning theory models also propose that the heightened tendency for children to exhibit disruptive behavioral reactions to interparental conflict (e.g., aggression, temper tantrums) ultimately reduce exposure to aversive interparental stimuli by distracting parents from engagement in ongoing conflicts (Cox et al., 2001; Emery, 1989). As a result, these forms of misbehavior are likely to increase in subsequent conflicts through a negative reinforcement process that serves to reduce or eliminate the aversive stimulus (i.e., conflict). Therefore, vicarious and enactive learning processes are proposed to increase children's aggressive, disruptive problems. Although social learning theory principles readily translate to the hypothesis that children's angry reactivity to interparental conflict serves as a primary intervening mechanism in associations between interparental aggression and children's externalizing symptoms, tests of this prediction have not been systematically undertaken.

Within emotional security theory, maintaining a sense of safety and security is one of the most salient in the hierarchy of human goals. Aggression between parents is specifically proposed to sensitize children to concerns about their security. Although difficulties preserving security may be manifested in a variety of emotional responses (e.g., anger, general distress) and action tendencies (e.g., flight, fight), recent refinements of the theory (e.g., Davies & Sturge-Apple, 2007; Davies & Woitach, 2008) postulate that fear represents a common underlying source of children's reaction patterns in aggressive homes. Reflecting its central role as a mediator, the elevated concerns for safety underlying prolonged fear experiences are further proposed to engender internalizing and externalizing symptoms in children by producing changes in neurobiological (e.g., neuroendocrine hormones, sympathetic nervous system functioning), neuropsychological (e.g., self-regulation, reasoning, problem-solving capacities), psychological (e.g., emotion regulation), and attention processes (Davies, Sturge-Apple, Winter, Cummings, & Farrell, 2006). Therefore,

a primary prediction is that children's fearful responding will be a particularly strong mechanism linking interparental aggression and children's internalizing and externalizing symptoms.

Specific emotions theory casts a broader conceptual net than either emotional security or social learning theories in proposing that fear, anger, and sadness may each play distinct roles as explanatory mechanisms in pathways between interparental conflict and child adjustment (Crockenberg & Langrock, 2001a, 2001b). According to specific emotions theory, children's emotional reactivity to conflict can reflect any number of broad (e.g., security, affiliative) and specific (e.g., obtaining parental permission to engage in desirable activities) goals (also see Jenkins, 2000; 2002). Anger, with its function of marshalling resources to overcome obstacles, is most likely to develop when children evaluate a threatened or blocked goal as attainable. In contrast, sadness functions to preserve intraorganismic resources in interpersonal contexts in which valued goals are repeatedly unattainable. Finally, because fear serves the function of energizing individuals to respond quickly to potential threat, it is most likely to be triggered in contexts that pose a looming, but uncertain threat to goal attainment. According to Crockenberg and Langrock (2001a, 2001b), interparental hostility is likely to amplify children's fearful, sad, and angry reactivity to interparental conflict by virtue of its widespread, pernicious implications for children's goals. Specific emotional responses to conflict, in turn, are thought to coalesce into broader patterns of adjustment and maladjustment. Proclivity to experience anger is hypothesized to trigger aggression and subsequent externalizing symptoms, whereas withdrawal behaviors prompted by fearful and sad responses are thought to engender internalizing symptoms. Consequently, in the context of interparental aggression, angry reactions are proposed to be key mediators of externalizing symptoms, while children's sad and fearful reactivity are hypothesized to mediate children's internalizing symptoms (Crockenberg & Langrock, 2001a).

In spite of theoretical calls to differentiate specific forms of children's emotional reactivity accounting for the risk posed by interparental conflict, little is known about the relative roles of fearful, sad, and angry forms of responding to conflict as mediators in associations between interparental aggression and child problems. As the only study to examine how children's specific forms of emotional reactivity to conflict are related to their psychological adjustment and their experiences with interparental aggression, Crockenberg and Langrock (2001b) found some modest, but indirect support for the role of specific emotions as mediators. Exposure to interparental aggression predicted children's fearful, sad, and angry reactivity, but only for girls and only in the context of paternal displays of aggression. Likewise, correlational analyses among the three forms of emotional reactivity and children's internalizing and externalizing symptoms conducted for boys and girls separately only yielded one significant association: girls' fearful reactivity was a significant concurrent predictor of their internalizing symptoms. Nonetheless, explicit, simultaneous tests of each form of emotional reactivity as mediators of interparental aggression were not conducted in this study. In building on this research, our study is designed to provide the first explicit test of the distinct power of fearful, angry, and sad reactivity as mediators of pathways between interparental aggression and children's internalizing and externalizing symptoms.

To provide a rigorous test of the unique value of the three affective forms of conflict reactivity, we also examine the alternative possibility that children's temperamental dispositions to experience negative affect may supersede the mediational role of specific forms of emotional reactivity in high conflict homes. Within neurogenetic models (e.g., Harden et al., 2007; Jaffee, 2009), personality vulnerabilities of parents who exhibit high levels of spousal aggression are proposed to be genetically inherited by children. By virtue of shared genetic substrates, children may exhibit stable dispositions to experience negative

affect that are evident across multiple contexts. If early dispositions to experience negative emotionality are particularly strong, they may represent a common etiological source of both children's emotional reactivity and psychological problems. Therefore, emotional reactivity may simply be one context-specific byproduct of the temperamental disposition to experience negative emotional arousal and its role as a more operative mechanism in the genesis of child psychological problems. As a test of this alternative hypothesis, we examine paths among interparental aggression, the three forms of emotional reactivity, and children's internalizing and externalizing symptoms within a broader model that includes tests of the mediating role of temperamental dispositions to experience both dominant (i.e., angry) and vulnerable (i.e., fear, sadness) forms of negative affect.

Our study is also designed to advance methodologies used in prior work. First, because the weak support for the mediational role of specific emotions in the study by Crockenberg and Langrock (2001b) may be an artifact of relatively small sample sizes resulting from separate analyses of boys (n = 38) and girls (n = 72), our inclusion of a larger sample size and our direct test of mediation provide greater power and precision to definitively test the mediational hypotheses. Second, by constraining rates and levels of aggression between parents, the predominant use of well-functioning, middle-class families in prior research does not provide a comprehensive picture of how children respond to a wide range of hostile interparental conflict tactics. To address this limitation, we examine children's emotional reactivity in a high-risk sample of disadvantaged mother-child dyads experiencing considerable variability in interparental violence and aggression. Third, in expanding on previous concurrent research designs, our multi-method, multi-informant, prospective study examines children's emotional reactivity as a predictor of concurrent and subsequent changes in their psychological problems.

METHOD

Participants

Participants included 201 two-year-old children and their mothers in a moderately-sized metropolitan area in the Northeast. To complement the predominant reliance on middle-class families, a two-step recruitment process was implemented to enroll a high-risk sample of families experiencing elevated levels of interparental aggression and sociodemographic adversity. In the first step, we recruited participants through agencies serving disadvantaged children and families, including Women, Infants, and Children andTemporary Assistance to Needy Families rosters from the Department of Human and Health Services, and the county family court system. In the second step, we administered the abbreviated version of the Physical Assault Scale of the Conflict Tactics Scale 2 (CTS2; Straus et al., 1996) to obtain roughly equal proportions of participating mothers who experienced (a) no physical violence (i.e., 40%), (b) mild/moderate physical violence (i.e., 24%), and (c) severe physical violence (i.e., 36%) in the interpartner relationship. Additional inclusionary criteria consisted of: (a) the female caregiver is the biological mother; (b) the child participant is 27-months old (+/− 4 months) and has no serious developmental disabilities; and (c) the male partner has had regular contact with the mother and toddler over the past year.

Median annual income for the family household was $18,300 (US) per year and a substantial minority of mothers (30%) and their partners (24%) did not complete high school. Most families received public assistance (95%) and were impoverished according to the US Federal Poverty Guidelines (99.5%). Based on the Hollingshead Four Factor Index, the majority of families (77%) fell within the lower two social strata (i.e., unskilled or semi-skilled workers). The mean age of the children was 26 months (SD = 1.69), with 44% of the sample consisting of girls (n = 92). The majority of mothers and children were Black (56%), followed by smaller proportions of family members who identified as White (23%), Latino

(11%), Multi-Racial (7%), and "Other" (3%). The retention rate for the longitudinal study was 89%. Comparisons between mother-child dyads who participated in the prospective visits and dyads who only participated in the first measurement occasion along the 27 family and child measures at Wave 1 (e.g., interpartner aggression) and 13 additional demographic (e.g., maternal age and race, SES, child age and gender) variables yielded no more significant differences than would be expected by chance (i.e., 2 out of 40). Because missing data from the families at Wave 2 was not selective or biased, we utilized the expectation-maximization (EM) algorithm to estimate data.

Procedures

Data for this study were collected at two measurement occasions spaced one year apart. At each wave, mothers and children visited our research center three times within a period of approximately two weeks. Mothers completed questionnaires and interviews to assess interparental aggression, children's conflict reactivity, and their psychological problems. Children also participated in a set of tasks designed to assess their temperamental reactivity to novelty and a series of challenging problem-solving procedures for assessing their psychological difficulties. Children received a small toy at each of the visits and mothers were paid $25 per visit at Wave 1 and $35 per visit at Wave 2. The research procedures were approved by the Institutional Review Board at the research site prior to conducting the study.

Measures

Interpartner aggression—Three measures collected at Wave 1 were used as indicators of interpartner aggression. The first two indices were derived from maternal reports on the Physical Aggression and Verbal Aggression Subscales of the Conflict and Problem-Solving Scales (CPS; Kerig, 1996). The Physical Aggression Subscale contains sixteen items indexing the frequency with which mothers and their partners engage in physically aggressive conflict tactics in their relationship (e.g., "beat up," "slap"), whereas the Verbal Aggression Subscale consists of sixteen items designed to assess the incidence of maternal and partner hostile verbalizations in the interparental relationship (e.g., "raise voice, yell, shout," "name-calling, cursing, insulting"). Mothers reported on the frequency with which each of the items in the two subscales occurred in presence of their children over the past year using a Likert scale of response alternatives ranging from "Never" (0) to "Often" (3). The final indicator of interparental aggression was obtained from maternal reports on the Physical Assault Subscale of the Revised Conflict Tactics Scale (CTS2; Straus et al., 1996). The Physical Assault subscale contains 24 items that capture a relatively comprehensive range of maternal and partner acts of violence in the interparental relationship over the past year (e.g., "pushed or shoved my partner," "choked my partner"). Following scoring guidelines, prevalence scores were calculated for each of the two scales based on the sum of the occurrences of specific aggressive acts (1 = act occurred one or more times; 0= specific act did not occur). Reliability was satisfactory for each subscale on both the CTS2 and the CPS in this sample (αs ranged from .92 – .93 for each) and prior research supports the validity of the measures (El-Sheikh, Cummings, Kouros, Elmore-Staton, & Buckhalt, 2008; Kerig, 1996).

Child psychological problems—Children's psychological maladjustment was assessed with a multi-method, multi-informant measurement battery. For the first component of the measurement battery, mothers completed the Child Behavior Checklist at Waves 1 and 2 to obtain measures of children's internalizing and externalizing symptoms (Ages 1½–5; Achenbach & Rescorla, 2006). Consistent with CBCL assessment guidelines, externalizing symptoms were assessed with the five items from the Attention Problems (e.g., "can't sit still," "shifts quickly") Subscale and the 19 items from the Aggressive Behavior (e.g., "hits

others," "physically attacks people") Subscale. Following CBCL recommendations, internalizing symptoms were measured using the Emotional Reactivity (nine items; e.g., "rapid shifts between sadness and excitement"), Anxious/Depressed (eight items; e.g., "feelings easily hurt"), and Withdrawn (eight items; e.g., "avoids eye contact") Subscales. Internal consistency estimates of the CBCL Subscales in this sample ranged from .57 to .91 across the two waves (M = .72). Studies support the test-retest reliability and construct validity of the CBCL scales (Achenbach, Dumenci, & Rescorla, 2003).

For the second component of the measurement battery, children participated at each wave in a series of increasingly difficult problem-solving challenges that were adapted from a well-established paradigm for assessing child adjustment (Matas, Arend, & Sroufe, 1978; Sroufe, Egeland, & Kreutzer, 1990). Children participated in four tasks that were each five minutes in duration and designed to be difficult for the child to solve without the assistance of an adult. In Wave 1, the specific tasks included: (a) a puzzle, (b) a shape-sorter task in which children must place plastic forms into holes corresponding to their shapes, (c) a large see-saw problem that requires the child to place a wooden block on one end of the see-saw in order to gain access to an attractive toy encased in a transparent box, and (d) a task in which the child must use a piece of balsa wood to retrieve a ball stuck in a plastic tube. For Wave 2, the tasks were tailored to be challenging for the more advanced developmental period of the preschoolers and included: (a) a more complicated puzzle, (b) a sorting task that required arranging shapes according to height, (c) a maze task, and (d) a problem that required children to place spools onto the correct colors of thread. The mother, who is available in the same room, is instructed to permit the child to try to first work on the problem independently before providing any assistance they think the child needs.

Trained coders rated the videotaped records of the entire session along continuous rating scales designed to assess internalizing and externalizing symptoms. The two indicators of internalizing symptoms included: (a) Dependency, rated along a six-point scale and characterized at high levels by repeated attempts to seek physical contact, clinginess, and excessive need for reassurance that disrupts the ability to successfully engage in the task (Matas et al., 1978; Sroufe et al., 1990) and (b) Anxious/Depressed behavior coded along a five-point scale assessing multiple, intense, and prolonged displays of anxiety and dysphoria. Indicators of externalizing symptoms included: (a) Noncompliance, consisting of a six-point scale indexing, at high levels, children's openly defiant and negative behaviors to virtually all maternal directions; and (b) Hostility, as defined at high levels by multiple, intense, and prolonged displays of anger, hostility, and aggression along a five-point scale. Intraclass correlation coefficients, calculated to assess interrater reliability of two coders who independently rated over 20% of the video records at each wave, were satisfactory, ranging from .71 to .93 (M = .86).

Children's Emotional Reactivity to Conflict—Trained experimenters administered the Interparental Disagreement Interview (IDI) to mothers in order to assess children's specific forms of emotional reactivity to conflict. The IDI is semi-structured, narrative interview that is designed to generate rich descriptions of children's behavioral signs of reactivity during and following common, intense conflicts between the parents. For example, maternal responses to one of the questions, "During these disagreements that [child] sees or hears, how does s/he respond?" is followed up with a further probe inquiry "What does [child] do or say during these disagreements?" If the mother indicates that the child does nothing, additional probes (e.g., "When you say that [child] does nothing, what do you mean specifically?") are also utilized to further capture the child's response. Questions designed to further gauge children's emotional reactivity included: "How do you think [child] feels during these disagreements?;" "How [emotion] do you think [child] typically feels?;" and "How can you tell [child] feels [emotion]?"

Video records of the interview were subsequently coded independently by a pair of judges to obtain three indicators of each of the forms of emotional reactivity (sad, fear, anger). First, judges coded for the presence (1) and absence (0) of behavioral dimensions of child fearful, sad, or angry reactions to interparental conflict based on maternal narrative accounts of children's behaviors in two separate intervals: during the disagreement and in the immediate aftermath of the disagreement. Specific dimensions of fear included: (a) fearful distress, defined as descriptions of facial expressions, behaviors (e.g., rocking, freezing, curling into a ball), and verbalizations (e.g., telling mom she or he is scared) marked by mobilizing forms of anxiety, fear, tension, worrying, or distress (b) crying, as reflected in visible tears or sobbing in response to disagreements, and (c) active flight, characterized by actively shutting out or avoiding the disagreement in an arousing way (e.g., running away, plugging ears). Components of anger reactivity consisted of: (a) anger, defined as descriptions of facial expressions, acts (e.g., clenching fists, stomping feet), or verbalizations (e.g., yelling) reflecting anger, and (b) aggression, characterized by verbal or physical hostility directed toward the self or others (e.g., hitting, pushing, kicking, mocking). Finally, indices of sad reactivity to conflict included: (a) facial expressions, behaviors, and verbalizations reflecting sadness, dejection, lethargy, and depression (e.g., postural slumping), and (b) whining, characterized by sulking and whining in response to the conflicts. Ratings of the presence of each dimension of the three forms of emotional reactivity were aggregated together across the conflict and post-conflict periods to generate *behavioral counts* of fearful, sad, and angry reactivity to conflict. Kappa coefficients indexing interrater agreement on specific behavioral codes for 32% of the interviews ranged from .81 to 1.0 (M = .88).

Second, coders provided *specific continuous ratings* of children's fearful distress, sadness, and hostility along seven-point scales based on the multiplicity, intensity, quality, and organization of the reports of children's behavior during interparental conflicts. Narratives containing no indications of the specific form of emotionality were coded as "0", whereas "6" on the continuous scale reflected that children expressed dysregulated and disturbing patterns of emotional reactivity indicating substantial problems controlling and regulating each specific emotion. Intraclass correlation coefficients, reflecting agreement between the two raters on 25% of the interviews, ranged from .90 to .98.

Third, *molar ratings* of children's fearful, sad, and angry reactivity to conflict were also coded based on the full descriptions of the course and nature of child behaviors exhibited both during and following interparental conflict. Ratings specifically reflect the degree of correspondence between the maternal narrative descriptions of children's reactivity and prototypical descriptions of fearful, sad, and angry reactions along a five-point scale ranging from "not at all characteristic" (1 = none or minimal signs) to "highly characteristic" (5 = tell-tale signs of the emotional pattern). High molar ratings of fearful reactivity were characterized by visible, blatant forms of forms of distress coupled, in many cases, with involvement (e.g., calls to the mom during conflict, proximity seeking) or active flight (e.g., running away) during and following interparental conflict. Angry reactivity reflected the behavioral enactment of aggressive, hostile, demanding, or bossy behaviors. Finally, high molar ratings of sad reactivity reflected a pattern of heightened sadness, anhedonia, helplessness, fatigue, and social disengagement. Intraclass correlation coefficients reflecting interrater agreement indices for the three molar ratings ranged from .85 to .97. Support for the validity of the IDI codes is reflected in its associations with established measures of interparental discord, children's reactivity to conflict, and their psychological functioning (Davies, Sturge-Apple,, Cicchetti., Manning, & Vonhold, in press; Davies, Sturge-Apple, Cicchetti, Manning, & Zale, 2009).

Emotionally reactive temperament dimensions—Following established procedures for assessing temperament (e.g., Fox, Henderson, Rubin, Calkins, & Schmidt, 2001; Kagan,

Reznick, & Snidman, 1987; Putnam & Stifter, 2005), children participated in a series of novel tasks and events. Mothers, who were in the same room, were instructed to complete questionnaires and only intervene with their children if they were concerned about their well-being. In the first episode (i.e., imitation task I), the experimenter escorted the child into a room containing a number of unusual objects (e.g., funnel, goggles, windshield cover). After a brief period in which the child was free to explore the room and the objects, the experimenter returned and instructed the child to manipulate the objects in different ways (e.g., windshield cover: "Poke it!"; funnel: "Put it on your head!"). In the next task (i.e., clown task), an unfamiliar female experimenter dressed as a clown introduced herself and then invited the child to play with a sack of toys for two minutes. In the final episode (i.e., imitation task II), the primary female experimenter instructed the children to imitate the following events after first enacting them herself: (a) reach behind a black curtain to pull out a doll, (b) place a finger in glasses of water and prune juice, and (c) pick up a rubber snake and let it slide back onto the table.

Video records of children's behavioral expressions of emotion in response to each of the four unfamiliar episodes were rated by another set of trained coders along two five-point scales designed to index children's general disposition to experience negative emotion. Guided by distinctions between forms of negative affect documented in temperament research (e.g., Bates, Pettit, Dodge, & Ridge, 1998; Rothbart & Posner, 2006), the coding system differentiated between inhibited and irritable forms of temperamental reactivity. Irritable temperament reflected high levels of frustration, anger, annoyance, irritation, hostility, and aggression, whereas inhibited temperament was defined by vulnerable affect expressions characterized by fear, avoidance, and sadness. For each of the four episodes, coders rated the two types of temperamental emotionality along five-point rating scales ranging from (0) no affect to (4) intense affect (e.g., multiple, intense, prolonged) by considering the intensity, multiplicity, frequency, quality, and chronicity of each child's emotional behaviors. Two coders, who were extensively trained to reliability, were randomly assigned to code 60% of the children in the unfamiliar episodes task, overlapping on approximately 24% for purposes of calculating reliability. Intraclass correlation coefficients, which indexed interrater reliability for each form of temperamental emotional reactivity within each task, ranged from .88 to .97.

Socioeconomic Status—Mothers completed a demographic interview to obtain three measures of socioeconomic status. First, mother and partner educational level and occupational status were used to derive the social strata score on the Hollingshead Four Factor Index of Social Status. Second, mothers reported on the earned annual income of the family unit without consideration of public assistance supplements. Third, a measure of household income per capita was calculated as the quotient resulting from dividing the total annual income of the family unit by the number of individuals living in the home.

RESULTS

Preliminary Analyses

Table 1 provides the raw means, standard deviations, and correlations among the focal variables in the primary analyses. In support of the measurement model, the correlational analyses revealed moderate to high correlations for the proposed indicators of each of the main constructs, including interparental aggression (*Mean r* = .45), each of the three forms of child emotional reactivity to conflict (*Mean r* = .69), the two dimensions of child temperament (*Mean r* = .37), and child internalizing and externalizing problems at each time point for mom reports (*Mean r* = .58) and observer ratings (*Mean r* = .70).

Model 1: Emotional Reactivity as a Mediator of Interparental Aggression for Maternal Reports of Child Adjustment

As a first test of our model, we examined the role of the three forms of emotional reactivity and the two dimensions of temperamental emotionality as mediators linking interparental conflict with maternal reports of Time 1 and Time 2 child psychological problems after specifying the autoregressive path between Time 1 and 2 psychological problems. Thus, in addition to estimating the direct paths between interparental aggression and child psychological problems at each time point, we specified the five emotion variables as: (a) endogenous constructs predicted by interparental aggression and (b) predictors of the children's forms of emotional reactivity and Time 1 and Time 2 psychological problems. In addition, correlations were estimated among the forms of emotional reactivity to conflict and among the forms of psychological symptoms to account for comorbidity. Table 2 provides the standardized coefficients of the manifest indicators onto their respective latent constructs for the Model 1 analyses. Supporting the measurement model, all the loadings were significant (all ps < .001) and moderate to high in magnitude. Alpha for all results in the study was set at .05. Therefore, unless otherwise specified, all results reported are significant at $p < .05$ or better. The overall model, which is depicted in Figure 1, provided an acceptable representation of the data, χ^2 (305, N = 201) = 529.23, $p < .005$, χ^2/df ratio = 1.74, *RMSEA* = .06, *CFI* = .92, *TLI* = .90. For clarity of presentation, only significant pathways are depicted in the figure.

Inspection of the structural paths in Figure 1 indicated that children's fearful reactivity was the only significant mediator in the links between interparental aggression and child subsequent psychological problems. Interparental aggression predicted higher levels of children's fearful reactivity to interparental conflict, $\beta = .27$. Furthermore, although children's fearful reactivity to conflict was not related to concurrent child psychological problems, it did significantly predict higher levels of children's internalizing symptoms, $\beta = .17$, and externalizing problems, $\beta = .16$, after estimating the highly stable, autoregressive paths for children's internalizing and externalizing symptoms. To more authoritatively examine the role of fearful reactivity as an explanatory mechanism in these three pathways, we conducted bootstrapping tests with the PRODCLIN software program (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Hayes, 2008). The results indicated that mediational paths involving interparental aggression, child fearful reactivity, and child psychological adjustment were significantly different from 0 in the prediction of Time 2 child internalizing, 95% CI = .004 to .071, and externalizing symptoms, 95% CI = .012 to .191.

In light of the empirical support for fearful reactivity as an explanatory mechanism, we also conducted a series of pairwise parameter comparisons to determine whether the magnitude of the indirect paths involving fearful reactivity were significantly different than alternative paths involving the two other forms of emotional reactivity and the temperament variables. In the first link of the indirect pathways, the results indicated that interparental aggression was a significantly stronger predictor of fearful reactivity to conflict than (1) sad reactivity, $z = 2.58$; (2) irritable temperament, $z = 3.27$; and (3) inhibited temperament, $z = 3.35$. Corresponding tests of the second link in the indirect pathway indicated that fearful reactivity to conflict was a marginally stronger predictor of Time 2 externalizing symptoms than inhibited temperament, $z = 1.92$, $p < .06$, and anger reactivity to conflict, $z = 1.73$, $p < .10$. Comparisons of paths for internalizing symptoms further revealed that fearful reactivity was associated with subsequent internalizing symptoms at Time 2 at a: (a) significantly stronger magnitude than comparable paths for angry reactivity, $z = 2.07$, and (b) marginally stronger magnitude than comparable paths involving sad reactivity $z = 1.70$, $p < .10$.

Estimation of the four other indices did not yield any support for mediation, but three other empirical relationships were also noteworthy. First, interparental aggression was significantly associated with children's internalizing and externalizing symptoms at Time 1. Second, although negligible relations between children's angry reactivity and their Time 1 and 2 adjustment problems precluded further tests of mediation, child exposure to interparental aggression was significantly associated with angry reactivity to conflict, $\beta = .21$. Third, unlike angry reactivity, indices of child temperament were unrelated to their exposure to interparental aggression. However, both temperamental characteristics predicted children's adjustment problems. Irritable temperament was specifically associated with mother reports of child externalizing, $\beta = .35$, and internalizing, $\beta = .26$, symptoms at Time 1, whereas inhibited temperament predicted greater child internalizing symptoms one year later after controlling for concurrent levels of internalizing symptoms, $\beta = .20$.

Model 2: Emotional Reactivity as a Mediator of Interparental Aggression for Observer Ratings of Child Adjustment

Increasing the rigor of the analyses by incorporating data from multiple informants and methods, our next step was to examine the replicability of the findings in a second model utilizing observer ratings of children's adjustment. Consistent with Model 1, we estimated autoregressive paths of observer ratings of child internalizing and externalizing symptoms from Time 1 to Time 2, the direct associations among interparental aggression and child symptoms, and the mediational pathways involving interparental aggression, the five indices of child emotionality, and child symptomatology. Correlations were also estimated among forms of emotional reactivity and among the two types of psychological maladjustment to account for covariation. In supporting the measurement portion of the model, the Model 2 column in Table 2 indicates that the loadings of the manifest indicators onto their respective latent constructs were significant (ps < .001) and moderate to high in magnitude. Moreover, the fit indices revealed that the overall model provided a good representation of the data, χ^2 (258, $N = 201$) = 417.43, $p < .001$, $\chi^2/df = 1.62$, $CFI = .92$, $TLI = .91$, $RMSEA = .06$.

For clarity of presentation, the results of the structural model depicted in Figure 2 only include significant paths. In accord with the mediational findings in Model 1, interparental aggression was significantly associated with children's fearful reactivity, $\beta = .27$. Children's fearful reactivity to conflict, in turn, significantly predicted higher levels of their Time 2 internalizing, $\beta = .23$, and externalizing symptoms, $\beta = .19$, even after specifying the significant autoregressive paths and the role of the four other indices of emotionality in the model. Furthermore, follow up mediational tests with the PRODCLIN software program indicated that children's fearful reactivity was a statistically significant explanatory mechanism in the paths between interparental aggression and children's externalizing, 95% $CI = .001$ to .041, and internalizing, 95% $CI = .002$ to .038, symptoms at Time 2 (MacKinnon et al., 2002; Preacher & Hayes, 2008).

Consistent with the results of Model 1, findings did not support the role of temperamental emotionality, angry reactivity, or sad reactivity as mediators. Nevertheless, children's irritable temperament was significantly associated with their greater angry reactivity to conflict, $\beta = .21$, diminished fearful reactivity to conflict, $\beta = -.19$, and externalizing symptoms at Time 1, $\beta = .29$, and Time 2, $\beta = .23$. In keeping with Model 1, interparental aggression was also associated with children's angry reactivity.

Pairwise parameter comparisons were also conducted to determine whether the magnitude of the indirect paths involving fearful reactivity were significantly different than alternative paths involving the two other forms of emotional reactivity and the temperament variables. In the first link of the indirect pathways, the results indicated that interparental aggression was a significantly stronger predictor of fearful reactivity to conflict than (1) sad reactivity, z

= 2.57; (2) irritable temperament, $z = 3.22$; and (3) inhibited temperament, $z = 3.44$. Corresponding tests of the second link in the indirect pathway indicated that children's fearful reactivity to conflict was a significantly stronger predictor of Time 2 externalizing symptoms than their angry reactivity, $z = 2.22$, and inhibited temperament, $z = 2.05$. Yielding a similar pattern of results for Time 2 internalizing symptoms, the findings also revealed that fearful reactivity was a significantly stronger predictor of internalizing problems than sad reactivity, $z = 2.16$, and inhibited temperament, $z = 2.16$. Finally, the magnitude of differences in paths approached significance for comparisons of fearful reactivity as a predictor of Time 2 internalizing symptoms and analogous paths involving angry reactivity, $z = 1.84$, $p = .06$.

Stability of the Results

To test the generalizability of the pathways in our model we conducted additional analyses to examine whether the findings were stable in the context of child gender and SES. First, we examined whether the results from Models 1 and 2 held even after inclusion of two covariates: child gender and a latent composite of SES consisting of three indicators (Hollingshead Social Status score, earned income, household income per capita). Inclusion of the two variables as exogenous predictors of the three forms of conflict reactivity, two dimensions of temperamental emotionality, and the four indices of psychological problems did not alter the pattern of significant findings in either of the models. Second, because structural paths in Figures 1 and 2 could vary significantly as a function of child gender, we conducted multiple group comparisons in which the data were split into groups of girls and boys. Given the small sample sizes resulting from splitting the data, it was necessary to conduct multiple group path analysis using manifest, rather than latent, composites of our measures. Manifest variables of the primary constructs were constructed by first standardizing their respective manifest indicators and subsequently aggregating them to create composites. The multiple group comparison for the structural paths in Figures 1 and 2 consisted of comparing a model in which all parameters were allowed to vary freely with a model in which comparable paths across gender were constrained to equality. Comparisons of the fully constrained and free-to-vary models revealed no difference in fit, thereby indicating that paths in Figure 1 and 2 did not differ as a function of child gender.

DISCUSSION

Although previous studies attest to the significance of children's emotionality in understanding why interparental aggression is a risk factor for psychological impairment, little is known about the specific parameters of emotional reactivity that serve as carriers of risk. Accordingly, the goal of this study was to advance an understanding of the role of children's emotionality as explanatory mechanisms in pathways between interparental aggression and young children's psychological functioning by increasing the precision of assessments of emotional reactivity to conflict. Guided by conceptualizations of family conflict, we specifically explored the relative power of angry, sad, and fearful reactivity to conflict and irritable and inhibited temperamental emotionality as mediating processes in both concurrent and prospective associations between interparental aggression and children's internalizing and externalizing symptoms. Our findings yielded the strongest support for children's fearful reactivity to conflict as a mediator of interparental aggression. Children who witnessed higher levels of aggression between parents exhibited greater fearful reactivity to interparental conflict. Elevated fearful responding, in turn, was a significant predictor of increases in children's internalizing and externalizing problems one year later, even after controlling for the stability of child problems over the longitudinal span of the study. Further highlighting the stability of these pathways, fearful responding

consistently served as a mediating mechanism across different informants of child problems and following the specification of possible covariates (i.e., child sex, SES).

These findings are broadly consistent with the emotional security and specific emotions theories. Both theories specifically postulate that children's fear and worry in the context of interparental conflict reflect underlying difficulties in achieving emotional security that develop, in part, from past experiences with interparental aggression and set the stage for subsequent child psychopathology (Crockenberg & Langrock, 2001a; Davies & Cummings, 1994). However, deeper analysis of the important distinctions between the theories suggests that the overall pattern of findings is more consistent with emotional security theory. Whereas emotional security theory places primacy on the operation of fear as a mediator of interparental aggression, specific emotions theory views each of the three negative emotions as central to elucidating the vulnerability of children from high conflict homes. In keeping with the prediction of emotional security theory, fearful reactivity was the only stable explanatory mechanism among the three forms of emotional reactivity and the two dimensions of temperamental emotionality. Pairwise parameter comparisons of the indirect pathways between interparental aggression, forms of emotionality, and child psychological problems one year later further revealed that fearful reactivity was a stronger mediator than many of the other indices of conflict reactivity and temperamental emotionality.

Another significant source of discrimination between emotional security and specific emotions theories lies in their assumptions about the sequelae of fearful reactivity. Specific emotions theory proposes that fearful reactivity reflects emergent properties of vulnerable forms of affect (e.g., anxiety) that specifically increase vulnerability to internalizing symptoms. Conversely, within emotional security theory, the difficulties preserving a sense of security underlying children's fearful patterns of reactivity to conflict are proposed to engender multiple pathogenic processes that collectively serve as precursors to both internalizing and externalizing symptoms. Consistent with emotional security theory, the findings indicated that the significant predictive paths between fearful responses and internalizing and externalizing symptoms one year later were of similar magnitude. One explanation, derived from emotional security theory, is that fearful reactivity broadly increases adjustment problems by priming children to utilize a hypervigilant pattern of responding to conflict as a guide for interpreting and responding defensively to challenging and novel interpersonal settings (e.g., peers) (e.g., Bascoe, Davies, Sturge-Apple, & Cummings, 2009). Likewise, in drawing on resource depletion theory (Baumeister, Vohs, & Tice, 2007), a complementary interpretation within the security framework is that prolonged bouts of fearful arousal deplete a common reservoir of self-regulatory resources, resulting in an array of vulnerabilities across domains of functioning(e.g., inhibitory control, self-regulation, executive functions) (Davies & Sturge-Apple, 2007).

According to both social learning and specific emotion theories of interparental conflict, angry reactivity to interparental conflict is a central mechanism explaining the developmental risk conferred by interparental aggression (Crockenberg & Langrock, 2001a; Emery, 1982). Supporting both of these theoretical assumptions, interparental aggression was associated with higher levels of children's angry reactivity to conflict even after considering possible covariates (e.g., SES, child gender, temperament). However, both theories proffer that angry reactivity to interparental conflict is a pathogenic, intervening mechanism that is distinct from children's general dispositions to experience negative affect. Therefore, a derivative hypothesis is that angry reactivity should be a significant predictor of children's symptomatology even after consideration of the role of other forms of emotional reactivity to conflict and temperamental emotionality as potential intermediary mechanisms. Although the correlations in Table 1 revealed that angry reactivity was related to maternal and observer ratings of some dimensions of externalizing symptoms, it was not significantly

associated with child externalizing symptoms within the broader multivariate analyses that incorporated multiple dimensions of child emotionality (see Figures 1 and 2). Therefore, questions can be raised about the distinctiveness of angry reactivity to conflict as an explanatory mechanism linking interparental aggression and children's maladjustment.

Drawing from neurogenetic models (e.g., Harden et al., 2007), one possible interpretation of these findings is that children's angry reactivity is an extraneous proxy of a broader, constitutional disposition to experience anger. A main presupposition of these models is that the intergenerational transmission of aggression is largely due to the operation of shared genetic processes which are likely manifested phenotypically in both high levels of children's early temperamental dispositions to experience frustration and parental tendencies to exhibit aggression in the family. Consistent with this assumption, children's irritable temperament was significantly associated with their angry reactivity to conflict and externalizing symptoms as rated by both mothers and observers. However, questions can be raised about the viability of this explanation. Although it is important to note that our study was not designed to authoritatively identify genetic pathways, the negligible associations between interparental aggression and children's temperamental dispositions do not readily support the notion that children's irritable temperament supersedes angry reactivity as a mediator of interparental aggression.

In accordance with social learning and specific emotions theories, another possible explanation is that the temperamental disposition to experience irritability is a key intermediary process in the association between children's angry reactivity and their externalizing symptoms. Supporting this interpretation, the findings indicated that interparental aggression continued to be associated with children's angry reactivity even with the specification of irritable temperament as a predictor. Likewise, the models yielded significant interrelationships between (1) children's irritable temperament and their angry reactivity and (2) irritable temperament and children's concurrent (as rated by both mothers and observers) and prospective (as rated by observers) externalizing problems. Interpreted within specific emotions and social learning theory, the heightened angry reactivity to conflict experienced by children in violent homes may ultimately increase children's externalizing symptoms by intensifying and coalescing into intense expressions of irritability that are stable in multiple contexts.

Running counter to hypotheses derived from specific emotions theory, our findings did not support sad reactivity to conflict as a mediator of interparental aggression. Sad reactivity was not associated with either exposure to interparental aggression or children's internalizing and externalizing symptoms in the multivariate analyses. Thus, the lack of empirical support for sadness as a mediator is consistent with an early study by Crockenberg and Langrock (2001b). However, given the early stage of research in this area, more studies are needed before definitive conclusions can be drawn regarding the role of sad reactivity. For example, it is possible that a dysphoric, helpless pattern of responding evolves from longer developmental histories of exposure to family discord than was experienced by the very young children in our sample (Davies & Sturge-Apple, 2007). Likewise, in keeping with previous observations that young children express their distress in the form of angry, aggressive behaviors in stressful interpersonal contexts (e.g., Glasberg & Aboud, 1982), the social-cognitive processes underlying the genesis and maintenance of sad reaction patterns may not be developmentally set in place until later in childhood (Jouriles, Spiller, Stephens, McDonald, & Swank, 2000).

Our interpretation of the results must also be evaluated in the context of several study limitations. Although the longitudinal prediction of changes in children's psychological problems within a multi-informant, multi-method design is relatively rare in the family

aggression literature, our study does not permit a full prospective analysis of change at each link in the meditational chain (Cole & Maxwell, 2003). Therefore, it is possible that the concurrent associations between interparental aggression and child fearful reactivity in our study may reflect child effects or reciprocity between child and interparental problems. Likewise, the measurement battery may not completely eliminate common method bias from some of the structural paths. For example, although different methods were utilized to assess interparental aggression and children's conflict reactivity, both classes of constructs were derived from the same informant.

At this early stage of research, testing these pathways in samples of families with different demographic characteristics is also necessary before generalizing the results. Because fearful reactivity is theorized to be especially salient among samples of young children exposed to high levels of family adversity (Davies et al., 2006; Johnston, Roseby, & Kuehnle, 2009), the primacy of fear as an explanatory mechanism in our findings may be due, in part, to our examination of toddler adaptation in families who collectively experienced relatively high levels of interparental aggression. Accordingly, sad and angry reactivity to conflict may assume greater significance as mediators in older children or families with other types of characteristics. Because no single study is sufficient to definitively test the theories of emotional reactivity to interparental conflict, we argue that more research into these issues is warranted. For example, although null findings for angry reactivity may support recent scientific challenges of the salience of social learning processes in violent contexts (Ferguson, 2010), some social learning mechanisms, such as cognitive schema for guiding the enactment of hostile behaviors or identifying orderly patterns in unpredictable contexts, may not crystallize and have a stable impact on children's mental health until the preadolescence period (Guerra & Huesmann, 2004). Finally, the meditational links involving fearful reactivity to conflict were modest to moderate in magnitude. Inclusion of additional explanatory mechanisms (e.g., child empathetic concern responses) and moderating conditions (e.g., parenting quality) is an important next step in accounting for individual differences in the mediational role of emotional security.

In closing, our study is the first examination of children's specific forms of emotional reactivity to conflict as mediating mechanisms in prospective pathways between interparental aggression and children's psychological problems. In accord with emotional security theory, our findings revealed that children's fearful reactivity to conflict was the primary mediator of longitudinal associations among interparental aggression and child psychological problems within a multivariate model that simultaneously tested children's sad and angry reactivity to conflict and their temperamental emotionality as explanatory mechanisms. Although significant caution should be exercised in applying these findings to clinical and public policy initiatives until the results are replicated, the knowledge generated by this study does offer promising translational directions. Specifically, our findings highlight the potential value of addressing children's insecurity and ensuing pathogenic processes as treatment targets of clinical programs for young children exposed to family aggression. Because heightened fearful reactivity and insecurity are theorized to reflect adaptive strategies for managing potential threat in violent homes (Davies & Sturge-Apple, 2007), it is critical to note that any treatment designed to alter children's emotional reactions to interparental conflict must be incorporated within a broader initiative to improve interparental and family functioning. However, limitations in the time, resources, or authority of practitioners to intervene in family matters may render a family systems approach impractical. Thus, a complementary objective may involve stopping the pathogenic processes that are proposed to mediate children's fear and insecurity and their subsequent adjustment problems. In support of this approach, Davies, Winter, and Cicchetti (2006) offer several recommendations targeting children's resolution of stage-salient tasks and their processing and coping with stressful events in familial and extrafamilial contexts.

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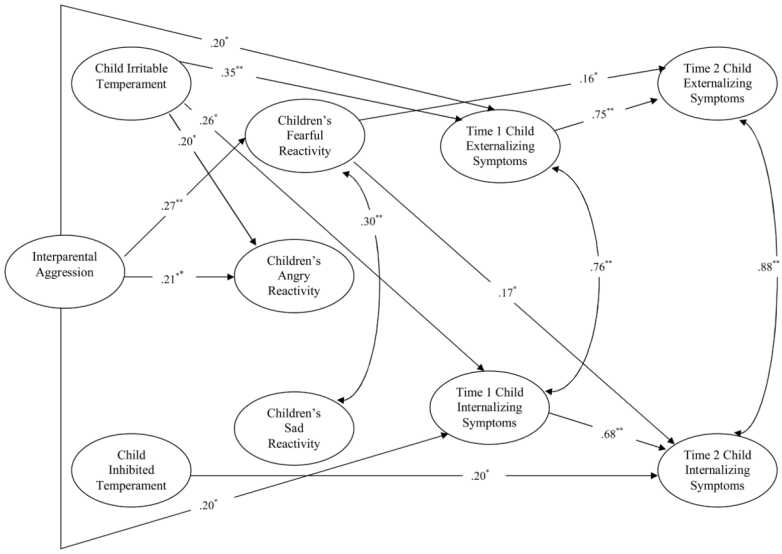

Figure 1.

A structural equation model testing forms of emotional reactivity and temperamental emotionality as mediators in associations between interparental aggression and maternal reports of children's maladjustment. Parameter estimates for the structural paths are standardized path coefficients. ** $p < .01$; * $p < .05$.

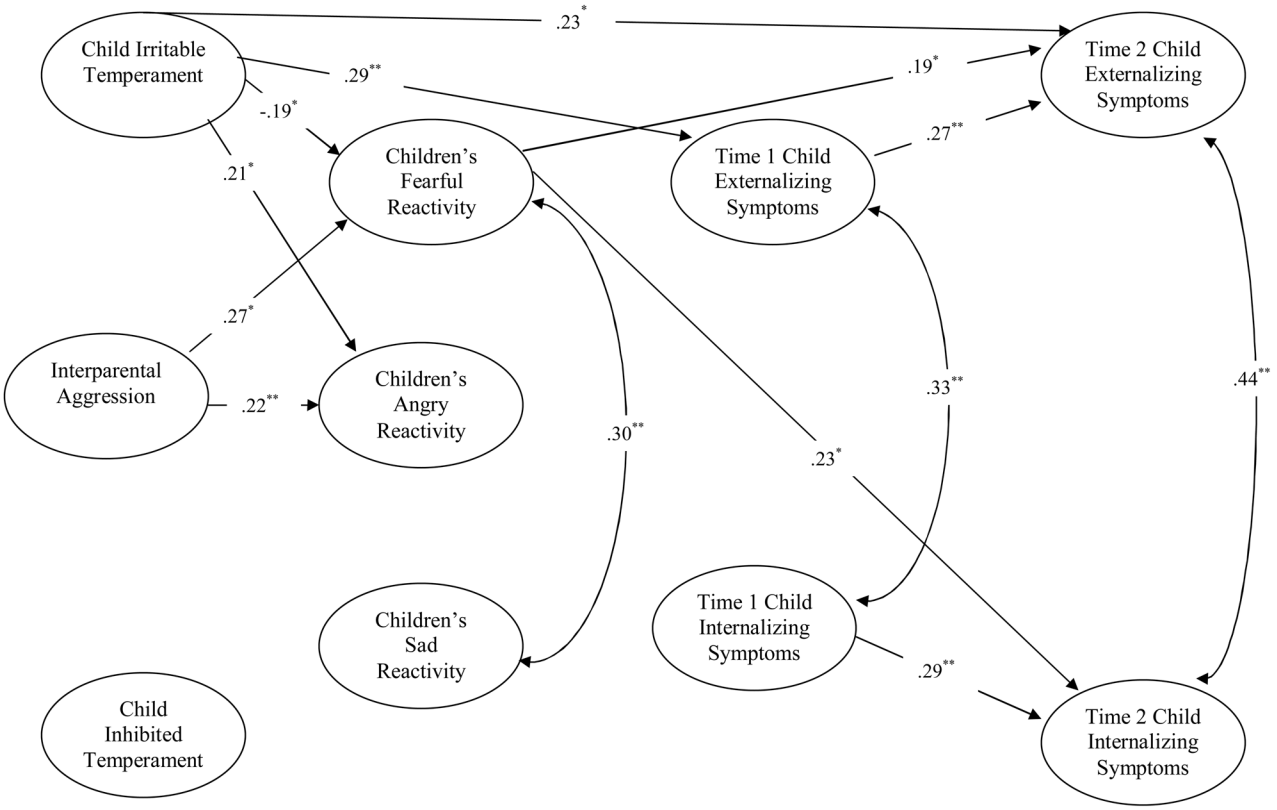

Figure 2.

A structural equation model testing forms of emotional reactivity and temperamental emotionality as mediators in associations between interparental aggression and observer ratings of children's maladjustment. Parameter estimates for the structural paths are standardized path coefficients. ** $p < .01$ * $p < .05$.

Table 1

Means, Standard Deviations, and Intercorrelations of the Main Variables.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Interparental Aggression																																					
1. CTS2	2.70	4.20	--																																		
2. CPS Verbal	12.21	5.86	.27*	--																																	
3. CPS Physical	2.42	3.53	.61*	.47*	--																																
Child Fearful Reactivity to Conflict																																					
4. Beh. Count	1.26	1.09	.16*	.28*	.22*	--																															
5. Spec. Rating	1.87	1.81	.12	.34*	.23*	.65*	--																														
6. Molar Rating	2.53	1.26	.10	.26*	.18*	.58*	.49*	--																													
Child Angry Reactivity to Conflict																																					
7. Beh. Count	0.80	1.13	.15*	.08	.06	.05	−.15*	.22*	--																												
8. Spec. Rating	1.21	1.75	.26*	.14*	.21*	.05	−.13	.28*	.83*	--																											
9. Molar Rating	1.71	1.12	.20*	.15*	.12	−.02	−.18*	.17*	.80*	.83*	--																										
Child Sad Reactivity to Conflict																																					
10. Beh. Count	0.37	0.62	.09	.05	.03	.25*	.10	.26*	.01	.08	.05	--																									
11. Spec. Rating	0.56	1.05	.00	.04	−.01	.25*	.20*	.18*	−.09	−.05	−.08	.78*	--																								
12. Molar Rating	1.19	0.58	.02	.11	.03	.16*	.16*	.03	−.18*	−.15*	−.17*	.62*	.62*	--																							
Child Irritable Temperament																																					
13. Imitation I	1.47	1.22	.00	.04	−.12	−.16*	−.21*	−.09	.17*	.19*	.17*	−.13	−.10	−.15*	--																						
14. Clown	0.70	0.94	−.11	−.04	−.07	−.06	−.11	−.11	.04	.04	.00	.02	.11	.04	.44*	--																					
15. Imitation II	0.60	0.93	−.01	−.08	−.06	−.10	−.13	−.05	.12	.12	.07	−.06	−.07	−.02	.42*	.44*	--																				
Child Inhibited Temperament																																					
16. Imitation I	0.80	0.99	−.19*	−.07	−.13	−.12	−.10	−.13	−.12	−.09	−.07	−.09	−.09	−.11	−.07	−.06	−.05	--																			
17. Clown	1.23	0.99	−.14	.01	−.02	.01	.01	.08	−.10	−.06	−.09	.05	.02	.04	−.15*	−.03	−.07	.38*	--																		
18. Imitation II	1.02	0.99	−.10	.03	−.01	.01	−.07	.05	−.02	−.01	−.02	−.03	.01	−.08	.06	.05	.25*	.26*	.28*	--																	
Time 1 Child Psychological Problems (Maternal Report)																																					
19. Attention	3.03	2.03	.05	−.09	.04	−.03	−.07	−.06	.06	.05	−.01	.10	.05	.09	.19*	.29*	.28*	−.06	−.09	−.07	--																
20. Aggressive	12.43	7.34	.13	.16*	.19*	.06	.03	.04	.20*	.20*	.13	.11	.10	.14	.15*	.17*	.19*	−.14*	−.05	−.10	.67*	--															

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
21. Emot. React.	2.70	2.32	.15*	.08	.13	.07	−.01	.04	.12	.08	.07	.03	.04	.02	.14	.13	.14*	−.09	−.06	.04	.52*	.63*	--														
22. Anx./Dep.	3.05	2.00	.03	−.02	.10	−.02	−.09	.00	.09	.11	.07	.09	.07	.11	.11	.11	.20*	−.04	−.02	.02	.47*	.45*	.59*	--													
23. Withdrawal	1.98	2.14	.16*	−.01	.18*	.00	.08	.02	.13	.12	.14*	.07	.06	.04	.03	−.01	.17*	−.08	−.11	.04	.32*	.41*	.51*	.48*	--												
Time 2 Child Psychological Problems (Maternal Report)																																					
24. Attention	2.80	1.99	.09	.01	.04	.08	−.02	−.06	.06	.00	−.07	.12	.11	.10	.09	.18*	.08	−.19*	−.06	−.09	.62*	.48*	.41*	.31*	.22*	--											
25. Aggressive	11.27	7.27	.18*	.26*	.18*	.20*	.02	.14*	.22*	.19*	.14*	.09	.09	.10	.13	.19*	.08	−.05	.06	−.01	.42*	.70*	.52*	.32*	.26*	.60*	--										
26. Emot. React.	2.66	2.44	.17*	.11	.18*	.20*	.00	.08	.10	.06	.03	.01	.06	.03	.10	.18*	.05	−.03	.10	.07	.26*	.43*	.58*	.37*	.41*	.48*	.67*	--									
27. Anx./Dep.	3.02	2.23	.13	.08	.23*	.15*	−.02	.16*	.12	.07	.02	.10	.03	.08	.05	.14	.13	.03	.13	.10	.28*	.40*	.51*	.50*	.42*	.43*	.57*	.71*	--								
28. Withdrawal	1.88	2.02	.15*	.07	.10	.08	−.09	.03	.17*	.12	.09	.04	.05	−.03	.17*	.08	.09	−.09	.01	.12	.19*	.30*	.47*	.27*	.49*	.34*	.44*	.61*	.50*	--							
Time 1 Child Psychological Problems (Observer Ratings)																																					
29. Anx./Dep.	2.03	1.00	.02	.08	.05	.13	−.01	.06	−.02	.07	−.01	.18*	.10	.16*	−.01	−.01	.08	.13	.08	.01	.07	.13	.04	.08	.01	.00	.10	.06	.01	.02	--						
30. Dependency	3.55	1.09	.01	.07	.00	.10	−.01	.94	.04	.09	.03	.11	.05	.13	.08	.05	.13	.04	.07	.02	.06	.15*	.11	.10	.04	−.03	.11	.04	.08	.07	.69*	--					
31. Noncompl..	3.07	1.19	.10	.03	.04	.11	−.04	.06	.15*	.14	.12	−.03	−.05	−.06	.21*	.09	.15*	−.06	−.11	−.06	.20*	.14*	.19*	.17*	.14	.14	.11	.10	.14*	.18*	.16*	.29*	--				
32. Hostility	2.01	1.19	.07	.02	.03	−.01	−.07	.04	.13	.12	.12	−.09	−.08	−.11	.24*	.14*	.09	−.10	−.14	−.09	.21*	.19*	.22*	.17*	.08	.13	.10	.09	.10	.08	.10	.22*	.71*	--			
Time 2 Child Psychological Problems (Observer Ratings)																																					
33. Anx./Dep	1.59	0.94	.02	.09	.06	.04	.05	.13	.13	.17*	.07	.07	.08	.06	.16*	.17*	.03	.08	−.02	−.08	.12	.20*	.18*	.34*	.17*	.11	.19*	.21*	.20*	.22*	.22*	.29*	.25*	.18*	--		
34. Dependency	3.50	1.06	.12	.01	.15*	.19*	.17*	.20*	.11	.11	.00	−.09	.01	−.09	.02	.14	.09	−.19*	.02	−.10	.04	.10	.21*	.24*	.18*	.18*	.10	.21*	.24*	.29*	.09	.23*	.21*	.13	.59*	--	
35. Noncompl.	3.04	1.20	−.04	−.08	−.01	.10	.06	.07	.00	.01	−.01	.01	.05	−.10	.19*	.20*	.08	−.05	−.09	−.15*	.05	.04	−.13	.06	−.04	−.04	.04	−.13	.06	.00	.11	.19*	.27*	.23*	.38*	.35*	--
36. Hostility	1.68	1.18	−.05	.02	−.05	.14*	.04	.07	.07	.00	.06	.03	.04	−.04	.20*	.17*	.06	−.07	−.07	−.16*	.04	.08	.02	.10	.08	.08	.08	.02	.10	.14*	.10	.15*	.31*	.26*	.36*	.35*	.79*

Note.

* $p \leq .05$.

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Table 2

Measurement Models for the SEM Analyses in Figure 1 and 2: Standardized Loadings of the Manifest Indicators for Each Latent Construct

Latent Construct	Manifest Indicators	Model 1	Model 2
Interparental Aggression	CPS Physical Aggression	.91	.90
	CPS Verbal Aggression	.50	.51
	CTS2 Physical Assault	.67	.67
Fearful Conflict Reactivity	Behavior Count	.90	.87
	Specific Rating	.72	.74
	Molar Rating	.66	.67
Angry Conflict Reactivity	Behavior Count	.90	.89
	Specific Rating	.93	.93
	Molar Rating	.89	.89
Sad Conflict Reactivity	Behavior Count	.88	.88
	Specific Rating	.89	.88
	Molar Rating	.70	.71
T1 Externalizing Symptoms	Aggressive Behavior	.89	--
	Attention Problems	.75	--
	Hostility (obs.)	--	.83
	Noncompliance (obs.)	--	.85
T1 Internalizing Symptoms	Emotional Reactivity	.87	--
	Anxious/Depressed	.70	--
	Withdrawn	.58	--
	Anxious/Depressed (obs.)	--	.75
	Dependency (obs.)	--	.93
T2 Externalizing Symptoms	Aggressive Behavior	.88	--
	Attention Problems	.71	--
	Hostility (obs.)	--	.89
	Noncompliance (obs.)	--	.88
T2 Internalizing Symptoms	Emotional Reactivity	.92	--
	Anxious/Depressed	.76	--
	Withdrawn	.67	--
	Anxious/Depressed (obs.)	--	.71
	Dependency (obs.)	--	.82
Irritable Temperament	Imitation I	.68	.72
	Clown	.66	.64
	Imitation II	.64	.61
Inhibited Temperament	Imitation I	.61	.69
	Clown	.64	.57
	Imitation II	.43	.41

Note. Loadings of all manifest indicators were statistically significant at $p < .001$.