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Interparental Conflict and Children's School Adjustment: The Explanatory Role of Children's Internal Representations of Interparental and Parent–Child Relationships

Melissa L. Sturge-Apple,

Department of Clinical and Social Sciences in Psychology, University of Rochester

Patrick T. Davies,

Department of Clinical and Social Sciences in Psychology, University of Rochester

Marcia A. Winter,

Department of Psychology, Syracuse University

E. Mark Cummings, and

Department of Psychology, University of Notre Dame

Alice Schermerhorn

Department of Psychology, University of Notre Dame

Abstract

This study examined how children's insecure internal representations of interparental and parent–child relationships served as explanatory mechanisms in multiple pathways linking interparental conflict and parent emotional unavailability with the emotional and classroom engagement difficulties the children had in their adjustment to school. With their parents, 229 kindergarten children (127 girls and 102 boys, mean age = 6.0 years, $SD = .50$, at Wave 1) participated in this multimethod, 3-year longitudinal investigation. Findings revealed that children's insecure representations of the interparental relationship were a significant intervening mechanism in associations between observational ratings of interparental conflict and child and teacher reports on children's emotional and classroom difficulties in school over a 2-year period. Moreover, increased parental emotional unavailability accompanying high levels of interparental conflict was associated with children's insecure representations of the parent–child relationship and children's difficulties in classroom engagement at school entry. The findings highlight the importance of understanding the intrinsic processes that contribute to difficulties with stage-salient tasks for children who are experiencing interparental discord.

Keywords

interparental conflict; family; internal representations; school adjustment

Children who are exposed to high levels of interparental conflict are vulnerable to a wide range of emotional, behavioral, social, and academic problems (e.g., Cummings & Davies, 1994; Dunn & Davies, 2001; Erel & Burman, 1995; Grych & Fincham, 1990). Conceptual models meant to identify the explanatory processes underlying how and why interparental conflict increases children's risk for psychological problems have postulated that children's

internal representations of family relationships are central risk mechanisms in pathways between interparental conflict and child psychological problems (e.g., Davies & Cummings, 1994; Grych, Wachsmuth-Schlaefler, & Klockow, 2002). Children's internal representations of family relationships are defined as beliefs or expectations of family relationships that originate from histories of experience with family interactions (Bretherton, 1985). In turn, these internal representations serve as schema for processing and interpreting the meaning and consequences of interpersonal processes (e.g., Oppenheim, 2006).

Most prior work has focused on assessments of parent-child representations (Shamir, Du Rocher Schudlich, & Cummings, 2001). Thus, scant attention has been paid to how other aspects of family functioning predict children's representations of family relationships and what these representations may portend for children's adaptive functioning in extrafamilial contexts. We addressed this gap by examining children's representations of interparental and parent-child relationships as intervening mechanisms in the link between interparental conflict and children's adjustment to school.

Emotional security theory (EST) provides a foundation for understanding how children's internal representations of family relationships may operate as mechanisms of the risk associated with exposure to interparental conflict. According to EST, interparental conflict increases children's vulnerability to mental health difficulties by undermining children's goal of preserving a sense of security and safety in interparental and parent-child relationships. In further contextualizing the study of children's internal representations within the family, EST postulates two primary pathways by which children's insecure internal representations of family relationships may carry the risk associated with interparental conflict: (a) the direct path hypothesis, in which interparental conflict increases child adjustment difficulties by taking a direct toll on children's internalizations of the interparental relationship (e.g., Davies & Cummings, 1994), and (b) the indirect path hypothesis, in which the parent-child relationship and children's internal representations of this relationship are mechanisms in the link between interparental conflict and child adjustment (e.g., Davies & Cummings, 1994).

Therefore, in the direct path hypothesis, the mechanism of transmission is children's representations of interparental conflict, but in the indirect path hypothesis, the mechanism of transmission is the representation of the parent-child relationship. Although representations of parent-child and interparental relationships are thought to have some overlap, they are also conceptualized as relatively distinct systems (Cummings & Davies, 1996). Our goal in this study was to examine simultaneously the indirect path hypothesis and the direct path hypothesis. Specifically, our focus was on how children's internal representations of interparental and parent-child relationships serve as intervening mechanisms in the prediction of children's adjustment difficulties to school.

First, the direct pathway hypothesis predicts that witnessing destructive interparental conflict characterized by high levels of hostility and disengagement, low levels of support, and failure to resolve disagreements increases children's risk for developing psychological problems by engendering children's insecure representations of interparental relationships. EST proposes that exposure to destructive interparental conflict primes children's negative representations of the interparental relationship and is the first link in this process model. Representations may include concerns about long-term relationship disturbances between the parents, greater spillover of hostility to parent-child relationships, and heightened ineffectiveness on the part of the parent in resolving conflict. These insecure representations of interparental relationships, in turn, may serve as precursors of later adjustment problems as children come to rely on these pessimistic models as guides for interpreting other novel or challenging interpersonal contexts (Davies, Winter, & Cicchetti, 2006).

Although prior studies have provided some initial empirical support for the direct pathway hypothesis, no single study has provided a comprehensive, longitudinal test of the unfolding processes. For example, Shamir et al. (2001) examined how marital conflict strategies were linked to children's representations of multiple family relationships in a community-based sample. Findings revealed that both mothers' and fathers' marital conflict strategies were related to children's negative representations of interparental and parent-child relationships. Building on this, Grych et al. (2002) reported that children who were exposed to interparental violence expressed fewer positive maternal representations and greater negative representations of interparental conflict than did children who came from nonviolent homes. However, neither of these studies delineated the developmental consequences of these negative representations for children's mental health. To this end, Davies and Cummings (1998) reported that children's insecure representations of the interparental relationship were a partial mediator in cross-sectional associations between marital discord and child adjustment difficulties. Nevertheless, the focus in the Davies and Cummings study precluded analysis of whether this direct pathway is distinct after parent-child relationship processes have been taken into account, as proposed within the indirect path hypothesis.

According to the indirect pathway hypothesis, destructive interparental conflict indirectly undermines children's functioning through its detrimental impact on parenting (e.g., Erel & Burman, 1995; Grych, 2001). In turn, this diminished parenting capacity is theorized to weaken children's representations of parents as sources of protection and support who are competent in their ability to provide sensitive caregiving in challenging parent-child contexts. In the final link in the series of family dynamics, the indirect path hypothesis posits that children's insecure representations of the parent-child relationship have a deleterious impact on children's abilities to successfully negotiate developmental tasks.

Although much research has examined various dimensions of parenting within indirect path conceptualizations (e.g., behavioral control and psychological autonomy; Schoppe-Sullivan, Schermerhorn, & Cummings, 2007), our focus in the present study is on explicating the role of parental emotional availability in this pathway. Parental emotional availability has been defined as parents' ability to structure parent-child interactions in ways that promote parent-child closeness through expressions of warmth, praise for children's positive behavior, and synchrony of interactions (e.g., Biringen & Robinson, 1991). This dimension of parenting behavior was selected because of its theoretical associations with children's emotional security and because of empirical evidence suggesting that emotional availability may be a primary factor in the prediction of children's confidence in parents as sources of protection and support (e.g., Aviezar, Sagi, Joels, & Ziv, 1999; Biringen et al., 2005; Easterbrooks, Biesecker, & Lyons-Ruth, 2000).

Research has demonstrated that parental difficulties in emotional availability partially mediate associations between interparental conflict and parent-child attachment insecurity (Frosch, Manglesdorf, & McHale, 2000; Owen & Cox, 1997). This result supports the first link in the indirect pathway hypothesis. Likewise, research that identified children's representations of parents as an intervening mechanism in the link between parenting difficulties and children's psychological adjustment has provided evidence for subsequent cascading processes in the indirect path hypothesis. For example, in a recent cross-sectional study, Solomonica-Levi, Yirmiya, Erel, Samet, and Oppenheim (2001) found associations between lower observed emotional and sensitive involvement of mothers with their children, children's negative narrative representations of their mothers, and children's problem behavior. In a longitudinal process model, Paley, Conger, and Harold (2000) reported that adolescents' negative representations of parents mediated the effects of observations of

emotionally valenced parenting behaviors (low hostility and intrusiveness, high warmth) on social behavior problems 2 years later.

Although these studies provide piecemeal support for the two proposed pathways, no study has simultaneously tested the roles played by children's representations of parent-child and interparental relationships. Therefore, questions remain about the viability of direct and indirect pathway conceptualizations, when tested against one another simultaneously, for explaining the risk associated with exposure to interparental conflict. To address this gap, we examined the pathways simultaneously in a comprehensive process model that examined the effects of interparental conflict on children's adjustment to school.

Finally, these tests raise questions about whether children's internal representations in one family subsystem are specifically associated with (a) adversity in that particular family subsystem or (b) adversity across multiple family subsystems. For example, diminished parental warmth and responsiveness may affect children's representations of the interparental relationship (e.g., Davies et al., 2006), as children may see parenting problems as possible indicators of family dysfunction and instability. Conversely, the witnessing of frightening behaviors of parents during destructive interparental conflicts may increase children's insecure representations of parent-child relations by creating doubts about the abilities of parents to serve as supportive, protective figures in times of need (e.g., Davies, Harold, Goeke-Morey, & Cummings, 2002; Grych et al., 2002). Thus, another of our goals in this study was to examine the joint roles of interparental conflict and parenting difficulties in the prediction of children's internal representations of parent-child and interparental relationships.

In expanding beyond the usual focus on global assessments of children's psychological symptoms as outcome measures in models of interparental conflict, we have tested pathways examining children's adjustment to school. In consonance with recent conceptual definitions (e.g., Birch & Ladd, 1997; Ladd, 2003), school adjustment was defined more broadly than in past research to include constructs that are not solely based upon academic achievement. This study defined school adjustment as a multifaceted construct that includes children's adaptive success in classroom and children's emotional attitudes toward school (e.g., Ladd, 2003; Ladd & Burgess, 2001). Difficulties in classroom engagement was defined as children's problems in maintaining attention and actively participating and cooperating within the context of classroom activities and rules (e.g., Ladd, Buhs, & Seid, 2000; Ladd & Burgess, 2001; Ladd, Kochenderfer, & Coleman, 1997; Wentzel, 1991). Children's emotional adjustment to school was defined as children's affective perceptions and appraisals of the school context (Ladd, 2003). Examples include loneliness in the school context and the desire to avoid attending school (e.g., Buhs & Ladd, 2001; Ladd & Burgess, 2001; Ladd et al., 1997).

As a developmental milestone (Alexander, Entwistle, Blyth, & McAdoo, 1998; Cowan, Cowan, Ablow, Johnson, & Measelle, 2005; Perry & Weinstein, 1998; Vecchiotti, 2003), the transition to full-day schooling allowed us to examine how children's insecure representations of family relationships might affect children's adaptation in extrafamilial contexts (Davies et al., 2006). Previous work has identified the predictive significance of family relationships on children's emotional adjustment to school (e.g., Clark & Ladd, 2000; National Institute of Child Health and Human Development Early Child Care Research Network, 2004) and academic adjustment to school (e.g., Wentzel, 1994), and numerous developmental theories have suggested that children's internalizations of early family experiences serve as blueprints for interpreting and responding to novel challenges outside the family (Bretherton, 1985; Cassidy, Kirsch, Scolton, & Parke, 1996; Greenberg, Speltz, & DeKlyen, 1993). Given that school entry is a challenging task, children are likely to utilize

their representations of family relationships as guides for interpreting, understanding, and responding to the new challenges in the school context.

In sum, our overarching goal in this study was to expand tests of the explanatory role of children's internal representations of family contexts by delineating the diversity of pathways among interparental conflict, parental emotional availability, children's representations of interparental and parent-child relationships, and school adjustment problems of early elementary school children. We predicted, in accordance with the direct path hypothesis, that children's negative representations of the interparental relationship would be a robust explanatory mechanism linking interparental conflict with children's difficulties in emotional adjustment to school and classroom engagement over a 2-year period during the transition to elementary school. Furthermore, we hypothesized, in accordance with predictions from the indirect path hypothesis, that parental difficulties in providing warm and responsive parenting as indexed by low levels of emotional availability would be associated with children's school adjustment difficulties and would undermine children's internal representations of the parent-child relationship. To provide a rigorous test of the applicability of path models, we utilized a multimethod measurement battery within an analytic model that integrates structural equation modeling and latent growth trajectories of children's school adjustment. Employing latent growth curve analyses allowed us to analyze of interindividual variability in initial levels and subsequent trajectories of adjustment to school.

Method

Participants

Participants were recruited from public elementary schools and community organizations at two sites (see Davies, Cummings, & Winter, 2004). The original pool of participants consisted of 235 families (mothers, fathers, and children). Families were included in the project if they had a child in kindergarten and had lived together for at least 3 years. The retention rate from the first to third measurement occasion was 91%; the resulting sample included 214 families (114 girls and 98 boys). Minimal differences were found between the retained sample and those participants lost to attrition over the two waves ($n = 21$). Statistical comparisons between the two groups along 13 demographic variables (e.g., family income, race-ethnicity, marital status) yielded two significant differences: Relative to excluded families, families in the present sample contained mothers and fathers with higher education levels and higher family income.

Given these minimal differences, we elected to maximize study power by retaining the full sample for study analyses and utilized full-information maximum likelihood (FIML) to estimate missing data within model analyses. FIML is a widely accepted and advantageous technique for the imputation of missing data, particularly in comparison with other techniques (e.g., mean substitution), as it optimally maintains the original structure of the relationship among the variables in the study (see Enders, 2001). Seven families were identified as multivariate outliers across all models specified in this study and therefore were excluded from the analyses. Thus, the final sample for this study consisted of 229 families (127 girls and 102 boys, mean age = 6.0 years, $SD = 0.50$, at Wave 1). Median family income of the participants fell between \$40,000 and \$54,000, and 13.3% of the sample reported household income below \$23,000. A large percentage of the sample was European American (79.9%); there were smaller percentages of African Americans (14.9%), Latino Americans (3.9%), Asian Americans (0.9 %), and other races (0.4 %).¹ At Time 1, 33% of mothers and 43% of fathers in our sample could be classified as maritally dissatisfied on the basis of scores below 100 on the Short Marital Adjustment Test (Locke & Wallace, 1959);

53% of couples had at least one maritally dissatisfied partner. These figures are in accordance with our goal of obtaining diversity in the experience of adversity in the family.

Procedure

Families visited the laboratories at the research sites on two occasions, spaced 1 week apart, during each of three waves, spaced 1 year apart. Each visit was approximately 3 hr long. At Wave 1, mothers and fathers participated in an interparental interaction task. We followed similar procedures used in previous research (Du Rocher Schudlich, Papp, & Cummings, 2004) and asked spouses to independently select three topics that they perceived as problematic in their marriage. After they had selected one topic from each of their lists that they both felt comfortable discussing, the couples discussed each of the two topics for 10 min while they were alone in the laboratory. Videotaped records of the session were subsequently coded for interparental conflict behavior. To examine the validity of the assumption that the interparental interaction task assessed characteristic ways of managing conflict in the interparental relationship, we had mothers and fathers respond individually to the question “Overall, how much did the discussion resemble disagreements that usually occur between you and your partner at home” immediately following the interaction task. Response alternatives were scored from 1 (*a lot more negative*) to 7 (*a lot more positive*). The means of mother and father responses fell between *about the same* and *a little more positive* on the 7-point scale (mother responses, $M = 4.71$, $SD = 0.91$; father responses, $M = 4.82$, $SD = 1.09$). This result supports the comparability of interactions during the laboratory visit with conflicts that occur in the home.

Assessments of paternal and maternal parenting were obtained from separate 10-min play and cleanup tasks during Wave 1 and Wave 2 visits. The task consisted of 5 min of free play between the parent and child followed by a 5-min period in which the parent attempted to have the child clean up the toys. Fathers participated in the task at the end of the first visit, and mothers participated in the task at the end of the second visit. Videotaped records of the interactions were obtained for later coding of parenting behavior.

At the second laboratory visit during Wave 1, children completed a revised version of the MacArthur Story Stem Battery (MSSB; Bretherton, Oppenheim, Buschsbaum, Emde, & the MacArthur Narrative Group, 1990). A narrative storytelling technique, the MSSB is designed to assess child representations of family relationships. Psychometric support for this type of procedure is evidenced by its theoretically meaningful ties to children’s social and emotional functioning (e.g., Warren, Oppenheim, & Emde, 1996). The revised version of the MSSB (MSSB-R) was designed to provide a more extensive measurement of child representations of the entire family system. It includes three stories that assess threats to each of three family relationship subsystems: mother–father (i.e., three conflicts varying in intensity); mother–child (i.e., reunion following extensive separation, child injury after violating maternal guideline, mother–child conflict); and father–child (i.e., reunion following extensive separation, child injury after violating paternal guideline, father–child conflict).

In accordance with the original format of the MSSB, experimenters who conducted the MSSB-R introduced a series of story stems that described various stressors and threats to the different family subsystems. To facilitate child engagement in the task, experimenters used dramatic, animated voices, various toy props, and family action figures matching the child’s gender and ethnicity. After each story stem, children were asked to show and tell

¹See Davies et al. (2004) for more demographic details. According to 2000 U.S. Census data, County 1 was 80.8% White, 14.7% Black, 5.4% Latino, 2.8% Asian, 2% multiracial, and 2% other races; County 2 was 84% White, 12% Black, 5.8% Latino, 1.6% Asian, 1.9% multiracial, and 2% other races.

what happened next using the action figures and props. When necessary, experimenters used standard probes to clarify actions or to encourage the child to address the main issue of the stem. Child stories were videotaped for later coding. Finally, children and their classroom teachers completed questionnaires that assessed child adjustment to school across the three measurement waves.

Measures

The measurement battery was designed to generate latent constructs of four domains: interparental conflict, parental emotional availability, and child emotional security in the interparental relationship and the parent–child relationship. Multiple indicators defined each of the latent variables in the model. All manifest indicators were recoded, so that higher scores represented higher levels of the characteristic assessed by that specific measure.

Interparental conflict (Wave 1)—To assess interparental conflict, we coded observations of maternal and paternal behaviors from an interparental disagreement task using the System for Coding Interactions in Dyads (SCID; Malik & Lindahl, 2004). A more comprehensive operationalization of destructive interparental conflict (e.g., Cummings & Davies, 2002), which was consistent with recent conceptualizations underscoring that parents may express conflicts and disagreements in multiple destructive ways from the perspective of the child (e.g., nonverbal anger, disengagement, low levels of support), was utilized in this study. Specifically, destructive maternal and paternal behaviors during interparental disagreements were assessed with the following SCID scales: (a) Verbal Aggression, which assesses the level of hostile and aggressive behaviors and verbalizations each partner expresses toward the other (e.g., insults and expressions of disgust, spite, and cruelty); (b) Negativity and Conflict, which reflects displays of anger, frustration, and tension; (c) Cohesiveness, which assesses within-couple unity and teamwork at high levels and within-couple disengagement at low levels; (d) Support, which reflects the extent to which each individual in the dyad is supportive and attuned to the other; and (e) Communication, which assesses the ability of partners to discuss feelings and opinions constructively at high levels and destructively at low levels.

The rating scale has been used across different populations and has demonstrated validity in its relation to similar measures of marital interaction and reliability across studies (see Malik & Lindahl, 2004). Intraclass correlation coefficients in this study, which indexed the reliability of two independent coders for 25% of the interactions, ranged from .87 to .98 ($M = .93$) for mothers and fathers across each of the scales across the interactions. Given the moderate-to-high correlations between mothers' and fathers' codes on the five scales (r s between .43 and .69), mother and father assessments on each subscale were aggregated to yield manifest composites for use in the latent construct.

Parental emotional availability (Wave 1)—Mothers' and fathers' emotional availability during the play and cleanup parent–child interaction task were evaluated with subscales from the Iowa Family Interaction Rating Scales (IFIRS; Melby & Conger, 2001). The IFIRS is a global, macro-level rating scale that assesses the frequency, quality, and intensity of a parent's caregiving behaviors on 9-point scales, ranging from 1 (*not at all characteristic*) to 9 (*mainly characteristic*). The rating scale has been widely used and has demonstrated validity and reliability across studies (see Melby & Conger, 2001). Coders who were blind to ratings of interparental interaction independently rated mother and father parenting behaviors. To reduce shared informant variance, we used different primary coders to assess maternal and paternal parenting.

In consonance with prior conceptualizations of emotional availability as consisting of parental displays of warmth and supportive caregiving coupled with the transactional nature of the parent–child dyad (e.g., Biringen & Robinson, 1991), parental emotional availability was assessed by three subscales: (a) Warmth/Support, which assesses parental displays of affection and support toward the child; (b) Positive Reinforcement, which is designed to capture statements of praise for child behaviors; and (c) Relationship Quality, which captures an overall level and valence of synchronicity between parent and child during the interaction. Intraclass correlation coefficients, which reflected interrater reliability among two coders for 22% of the interactions, ranged from .90 to .97 for ratings of the parenting codes. Codes on each subscale were aggregated for mothers and fathers across the two interactions. Correlations between mother and father assessments on aggregated subscales were significant ($r_s > .21$, $p_s < .05$) and therefore were collapsed to form more parsimonious indicators of parenting.

Child internal representations (Wave 1)—We used children’s videotaped MSSB–R responses to assess the security of children’s representations in the interparental and parent–child relationships. Coder ratings of children’s responses to the three challenging interparental stories served as indicators of insecurity in the interparental relationship, whereas the ratings of six stories depicting parent–child relationship stressors served as assessments of security in the parent–child relationship. Coders who were blind to family and child functioning rated the children’s responses to each of the nine stories along 5-point continuous scales that reflected deleterious relationship consequences.

The caregiver incompetence code, which yields separate ratings of maternal incompetence and paternal incompetence in the context of the challenges in the interparental and parent–child subsystems, ranged from ratings of 1 (*very competent*), reflecting a child portrayal of the caregiver as a source of support and protection for the child and family in the face of relationship challenges, to 5 (*very incompetent*), reflecting a child depiction of the caregiver as completely ineffective or frightening during relationship challenges. Ratings of relationship quality in the interparental and parent–child subsystems varied from 1 (*intense harmony*), reflecting expectations that relationships are predominantly close, supportive, and harmonious, to 5 (*intense discord*), reflecting expectations of long-term, intense problems in the relationship that indicate extreme difficulty in getting along or prolonged and/or escalating bouts of hostility.

Finally, the emotional security code was a global code designed to assess children’s collective confidence in the given relationship (e.g., interparental or parent–child) as a source of support. Ratings ranged from 1 (*strong insecurity*), in which the family relationship is portrayed as a long-term and severe threat to children’s security, to 5 (*strong security*), in which the family relationship is depicted as competently resolving challenges in a manner that maintains or improves harmony and supports the physical and emotional welfare of the child. Given that children’s worries about the proliferation of interparental conflict to the broader family system are conceptualized as central indicators of insecurity in the interparental relationship (Davies & Cummings, 1994), coders also rated the three interparental stories along a 4-point scale of Relationship Spillover to capture the extent to which disturbances or challenges in the interparental subsystem proliferate to undermine parent–child and family relations. Ratings of 4 (*intense spillover*) were defined by child narratives that portrayed the interparental challenges as having extremely dysfunctional and prolonged impact on the quality of family relationships, whereas ratings of 1 (*no spillover*) indicated that interparental challenges were successfully contained within the interparental dyad.

Thus, assessments of representations of interparental relationships consisted of ratings of caregiver incompetence, interparental relationship quality, emotional security, and relationship spillover in the interparental stories, whereas ratings of caregiver incompetence, parent–child relationship quality, and security in the six parent–child relationship stories served as indicators of representations of parent–child relations. Four independent coders, who were extensively trained to reliability, were each randomly assigned to rate the narratives of 25% of children who completed the MSSB–R interview. To evaluate interrater reliability, we had all coders rate 20% of the videotapes. Intraclass correlation coefficients, which examined interrater reliabilities of the team of judges, ranged from .81 to .99 ($M = .91$). Ratings were therefore combined across the raters and then the vignettes to obtain comprehensive indices of children’s representations of maternal incompetence, paternal incompetence, security, relationship quality, and relationship spillover. Given the relation between maternal and paternal incompetence ($r = .46$), we averaged them to form an overall parent incompetence construct. Final ratings were scored such that higher levels indicated higher insecurity.

Children’s classroom engagement in school (Waves 1, 2, and 3)—We used two scales to obtain an assessment of children’s difficulties with classroom engagement in school. First, teacher report on the Attention Problems subscale of the Child Behavior Scale served as a measure of children’s behavior at school (Ladd & Profilet, 1996). The Attention Problems subscale consists of four items (e.g., “poor concentration, attention span”) rated along a 3-point scale ranging from 1 (*Doesn’t Apply*) to 3 (*Certainly Applies*). Internal consistency in this sample ranged from .84 to .87 across the different time points. Prior research has supported the validity of the Child Behavior Scale (Ladd & Profilet, 1996). Second, teachers reported on the Cooperative Participation subscale from the Teacher Rating Scale of School Adjustment (TRSSA; Birch & Ladd, 1997). The subscale consists of seven statements assessing teacher appraisals of children’s participation in the classroom (e.g., “follows teacher’s directions,” “accepts responsibly for a given task”) rated on a 3-point scale ranging from 1 (*Doesn’t Apply*) to 3 (*Certainly Applies*). The scale was later reversed, such that higher scores reflected lower levels of cooperative participation. The TRSSA has demonstrated reliability as well as content and construct validity (Birch & Ladd, 1997). Internal consistency in this sample was .76 at Time 1, .90 at Time 2 and .90 at Time 3. To create an overall Classroom Engagement Difficulties scale for each time point, we summed the two subscales to create a combined score. Internal consistency of the overall composite exceeded .85 at each time point.

Children’s emotional adjustment to school (Waves 1, 2, and 3)—In consonance with previous operationalizations of emotional difficulties (e.g., Buhs & Ladd, 2001), children’s emotional adjustment to school was assessed with two separate scales. First, children reported on the School Avoidance subscale from the School Liking and Avoidance Questionnaire (SLAQ; Kochenderfer & Ladd, 1996). The subscale consists of five statements assessing children’s avoidance of school (e.g., “Do you wish you didn’t have to go to school?”) on a 3-point scale: 1 (*Yes*), 2 (*Sometimes*), and 3 (*No*). The scale was reverse coded, such that higher scores reflect greater avoidance. The SLAQ has demonstrated reliability as well as content and construct validity (Kochenderfer & Ladd, 1996). Internal consistency on child reports on the School Liking subscale in this sample ranged from .79 to .84 across the three time points.

Second, children reported on the Loneliness subscale from the Loneliness and Social Dissatisfaction Questionnaire (LSDQ; Cassidy & Asher, 1992). The Loneliness subscale consists of five items assessing children’s feelings of loneliness and isolation at school (e.g., “Do you feel alone at school?”) that are rated on a 3-point scale consisting of 1 (*Yes*), 2 (*Sometimes*), and 3 (*No*). The scale was reverse coded, such that higher scores reflect greater

loneliness. The LSDQ has demonstrated reliability as well as content and construct validity (Cassidy & Asher, 1992). Internal consistency on children's reports on the scale in this sample was .76 at Time 1, .84 at Time 2, and .84 at Time 3. To obtain a single composite of emotional adjustment, we summed the two scales at each time point. Internal consistency of the overall composite ranged from .82 to .83 across the different measurement occasions. Results of exploratory factor analyses supported the extraction of two factors corresponding to the indicators of the emotional and classroom adjustment composites.

Results

Initial Analyses

Descriptive information as well as intercorrelations among study variables are presented in Table 1. Relationships among study variables were in the expected direction, and correlations between manifest indicators within a latent construct were generally higher than were correlations with manifest indicators across study constructs. For all analyses, statistical significance was set at $p \leq .05$ (two-tailed).

Modeling the Growth of Children's School Adjustment Difficulties

As a first step in examining the relationships among family interactions, children's representations of family relationships, and changes in children's school adjustment, the unconditional latent growth curve (LGC) models for children's school adjustment were examined with AMOS 6.0 statistical software and the FIML method of estimating missing data (Arbuckle & Wothke, 1999). Unconditional LGCs are examinations of trajectories free from any predictors of change. They establish the existence and significance of average intercepts and slopes as well as the presence of significant variability around these means.

The unconditional LGC model of children's emotional difficulties fit the data well, $\chi^2(1, N = 229) = 0.03, p = .85$, root-mean-square error of approximation (RMSEA) = .00, comparative fit index (CFI) = 1.00. The means of the intercept and slope factors were 16.51 ($z = 54.27$) and $-.32$ ($z = -1.64$), respectively. These results indicated that the average initial level of emotional difficulties was significantly different from zero. Although the slope findings also revealed that children's emotional adjustment to school difficulties declined, the magnitude of the decline was not significant. However, the intercept and slope factors had statistically significant variances of 9.58 ($z = 3.21$) and 3.16 ($z = 2.26$) respectively. This indicated that there were significant individual differences in initial levels of children's school adjustment difficulties and the rate of change over the course of the study. The correlation between the intercept and slope factor was not significant ($-2.78, z = -1.65, p = .10$).

The LGC model for children's difficulties with classroom engagement also represented the data adequately, $\chi^2(1, N = 229) = 2.53, p = .11$, RMSEA = .07, CFI = .99. The means of the intercept and slope factors were 1.12 ($z = 164.77$) and $-.01$ ($z = 2.88$), respectively. These results indicated that the average initial level of classroom engagement difficulties was significantly different from zero and that, on average, there was a significant decrease in children's classroom engagement difficulties over the course of the study. The intercept and slope factors had variances of .56 ($z = 5.29$) and .11 ($z = 2.14$) respectively; this indicated that there were significant individual differences in initial levels of children's classroom engagement difficulties and rate of change over time. The correlation between the intercept and slope factor was nonsignificant ($r = -.23, z = -1.06, p = .28$).

We also examined whether family socioeconomic status reflected in family income levels affected children's trajectories. Model analyses revealed no change in children's intercept and slope variables for either school adjustment indicator when family income was covaried in the model. In addition, given the potential moderating role of child gender in models of

family process (Davies & Lindsay, 2001; Sturge-Apple, Davies, Boker, and Cummings, 2004), we further examined whether the parameters of the unconditional growth curve models differed as a function of child gender. To test the moderating role of gender, we estimated the LGC models simultaneously for boys and girls using a multiple-group analysis. Model comparisons revealed that initial level or growth trajectories of adjustment did not vary by child gender. Therefore, all subsequent analyses were performed with the full sample.

Process Model

Given the presence of significant individual differences in the variances of initial levels of emotional and classroom engagement difficulties, as well as significant differences in the variability in adjustment over time, our next set of analyses examined a process model that attempted to account for individual variance in initial levels and change over time. The growth models of school adjustment were incorporated into a latent-variable structural equation model (SEM) that examined the role of children's internal representations of interparental and parent-child relationships as intervening mechanisms in the link between family processes and children's school adjustment. Given statistical and power constraints inherent in attempts to analyze LGCs within a multimethod, latent variable process model, we elected to conserve power and analyze the two school adjustment trajectories within different models. Prior to analyzing structural models, we conducted measurement model analyses specifying correlational paths between all latent variables in the model. Results of the measurement models revealed acceptable fit for all measurement models, and manifest indicators loaded significantly and independently on the latent construct they were hypothesized to measure ($p < .05$). These results supported the discriminant and convergent validity of the latent variables.

Furthermore, although theoretical conceptualizations of the pathways in the present study are termed "direct" and "indirect," our operationalization of these pathways in our SEM models is considered indirect from a statistical standpoint, in that both models examine underlying mechanisms for transmission of effects. In other words, in theoretical conceptualizations of EST, the mechanism itself is either direct (i.e., it alters how children think about interparental conflict itself) or indirect (i.e., it alters how children think about the parent-child relationship); however, these pathways are both considered to be statistically indirect. Therefore, to determine the significance of the effect of children's representations of interparental and parent-child relationships as intervening mechanisms in pathways between interparental conflict, parental emotional unavailability and the intercept and slope factors for children's adjustment to school, we utilized the Sobel test with additional procedures outlined by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002). These procedures take into account the nonnormal sampling distribution of ab when the p value of the indirect test is calculated.

Children's internal representations as intervening mechanisms of child emotional difficulties—Figure 1 depicts the results of the overall model when child representations are specified as intervening mechanisms in the prediction of children's emotional difficulties. The model evidenced an acceptable fit to the data, $\chi^2(125, N = 229) = 173.55, p = .003$, RMSEA = .04, CFI = .98. Examination of the paths revealed that interparental conflict was significantly associated with decreases in parental emotional availability ($\beta = -.20, p < .05$) and with increases in children's insecure representations of the interparental relationship ($\beta = .14, p < .05$) and the parent-child relationship ($\beta = .15, p < .05$). Further analyses revealed that parental emotional availability was associated with decreases in children's insecure representations of the interparental ($\beta = -.14, p < .05$) and parent-child ($\beta = -.16, p < .05$) relationships. Furthermore, pairwise parameter comparisons

of the four paths between interparental conflict and child representations (interparental and parent–child) with parental emotional availability and child representations (interparental and parent–child) revealed no significant differences in the magnitude of the four pathways (z s ranged from .36 to .99).

Children's insecure representations of the interparental relationship was significantly associated with both the intercept ($\beta = .31, p < .05$) and slope ($\beta = -.24, p < .05$) of children's difficulties in emotional adjustment to school. Greater insecurity in the interparental relationship was associated with higher initial levels of children's emotional difficulties at Time 1, and it predicted shallower decreases (or slower adjustment) in emotional difficulties over time. Finally, insecurity in the interparental relationship explained 11% and 6% of the variance in the intercept and slope parameters, respectively. Paths between children's insecure representations of the parent–child relationship and the intercept and slope of emotional difficulties were not significant.

To determine the significance of the intervening role of children's representations of interparental relations in pathways between interparental conflict and the intercept and slope factors for children's emotional adjustment to school, we utilized MacKinnon's z (see Table 2). Tests revealed that pathways between interparental conflict, greater insecure representations of the interparental relationship, and emotional adjustment to school difficulties were significant ($z' = 1.68$ for intercept factor and $z' = 1.43$ for slope factor). Likewise, tests of the paths between parental emotional availability, children's insecure representations of the interparental relationship, and intercept and slope factors for emotional adjustment to school difficulties were significant ($z' = 1.74$ and $z' = 1.46$, respectively).

Children's internal representations as intervening mechanisms of child classroom engagement difficulties—Figure 2 shows the model testing children's internal representations of family relationships as an intervening mechanism in the prediction of difficulties in classroom engagement in school. The overall model evidenced an acceptable fit to the data, $\chi^2(125, N = 229) = 181.75, p = .002$, RMSEA = .04, CFI = .98. As in the previous analyses, structural coefficients of pathways between interparental conflict, parental emotional availability, and children's emotional security were significant. Further analyses revealed that children's insecure representations of the interparental relationship and the parent–child relationship were both significantly associated with the intercept of children's classroom engagement ($\beta = .20, p < .05$, and $\beta = .22, p < .05$, respectively). Children who evidenced greater insecurity in both the interparental relationship and the parent–child relationship had higher initial levels of classroom engagement difficulties. In addition, the two types of emotional insecurity collectively explained 13% of the variance in children's initial levels of difficulties in classroom engagement. However, neither insecurity in the interparental relationship nor insecurity in the parent–child relationship was significantly associated with individual differences in trajectories of children's classroom engagement difficulties over time ($\beta = .04, p = .68$, and $\beta = .08, p = .43$, respectively).

Again, we conducted tests of the significance of the four pathways in the model using the procedures of MacKinnon et al. (2002). The results are presented in Table 2. Tests of the effects of interparental conflict on initial level of classroom engagement through children's insecure representations of the interparental relationship and the parent–child relationship were performed. Insecure representations of the interparental relationship ($z' = 1.71, p < .05$) and the parent–child relationship ($z' = 1.78, p < .05$) were each significant intervening mechanisms that linked interparental conflict with higher initial levels of classroom engagement difficulties. Tests of paths of parental emotional availability on initial levels of

classroom engagement difficulties through children's insecure representations of the interparental and the parent-child relationship also were significant. Lower parental emotional unavailability was specifically linked with higher classroom engagement difficulties through associations with insecurity in the interparental relationship ($z' = 1.84, p < .05$) and the parent-child relationship ($z' = 1.96, p < .05$).

Discussion

This study tested the assumption that associations between interparental and parenting difficulties may increase children's vulnerability to school adjustment difficulties by undermining children's internal representations of security within interparental and parent-child relationships. Findings from this study indicate that children's emotional security in multiple relationship contexts within the family served as underlying mechanisms in linking interparental conflict and children's emotional and engagement difficulties in the school context during the early school years. These findings attest to the significance of a family framework of children's internal representations of family relationships.

Our tests of children's internal representations of the interparental relationship as an underlying mechanism linking interparental conflict with children's difficulty in adjusting to school support the direct pathway hypothesis. Specifically, interparental conflict was associated with children's insecure representations of the interparental relationship. Insecurity in children's representations of the interparental relationship, in turn, served as a significant predictor of higher initial levels of children's emotional difficulties (e.g., loneliness and school avoidance) and higher initial levels of classroom engagement difficulties (e.g., compliance and attention problems) in school, and it dampened children's adjustment in trajectories of emotional difficulties in school. Notably, the pathways linking interparental conflict, children's insecurity in the interparental relationship, and school adjustment problems remained robust even after we took into consideration the role of parental emotional unavailability and insecure representations of the parent-child relationship in the structural equation model. Thus, consistent with the direct hypothesis, the results of this multimethod, longitudinal study highlight the distinct implications of children's insecurity in the interparental relationship, even in the context of other parent-child relationship processes, for subsequent children's school adjustment trajectories.

A primary interpretation derived from EST is that the underlying concerns of children with insecurity may undermine their abilities to develop the skills and preserve the resources (e.g., attention) they need to resolve challenging developmental tasks and transitions (Davies et al., 2006). Thus, the novel social and cognitive demands accompanying the transitions into formal schooling may be a particularly challenging task, as negative representations of interparental relationships may serve as guides for children's interpretations of the unfamiliar challenges and stressors in the school system. As a result, children may be more prone to appraising situations within school settings as hostile and threatening and may rely on rigid, automatic ways of responding derived from family interactions when they confront daily challenges of school. More specifically, although marital conflict is viewed as stable over time in this study, our findings are consistent with EST conceptualization of children's representations of interparental conflict as having a long-term impact on children's trajectories of adjustment. In particular, if these representations of interparental relationships serve as guides to interpretations and responses to novel, challenging events, they may continue to manifest themselves over time with emerging new challenges and stressors in the school settings. This interpretation suggests that systematic delineation of the mechanisms underlying the negative sequelae of children's insecure representations of the interparental relationship is an important step in future research. For example, recent work has suggested that children's negative representations of family experiences may contribute

to the formation of hostile attributional biases in extrafamilial contexts and processing errors that may be a function of children's maladaptive defensive styles (e.g., Shields, Ryan, & Cicchetti, 2001).

However, a complementary explanation not inconsistent with derivative hypotheses of EST is that children who experience high levels of interparental conflict and have insecure representations of the interparental relationship may also have increased fear of being separated from caregivers. As children develop representations of the interparental relationship as destructive and conflictual, these representations may include feelings that adults may not be safe in the home when the child is not present. This idea may manifest itself as heightened separation anxiety arising out of insecure interparental representations that consequently may be reflected in higher levels of school avoidance and disengagement. In future, researchers should examine the interplay between children's representational world of interparental relationships and the development of the ability for healthy separations from parents in predicting children's adjustment to school.

Integration of parenting difficulties and insecure representations of parent-child relationships in a process model of interparental conflict provided partial support for the indirect path hypothesis. The results specifically indicated that interparental conflict was related to children's insecure representations of the parent-child relationship through its association with diminished parental emotional availability. Insecurity in children's representations of the parent-child relationship, in turn, was an intervening mechanism in associations between diminished parental emotional availability and children's initial levels of classroom engagement in school, although it was not associated with change in classroom engagement over time. Furthermore, children's representations of the parent-child relationship were not associated with either initial levels of emotional adjustment to school or trajectories over time. These findings are interesting and are counter to recent efforts aimed at charting the implications of children's internal representations of the parent-child relationship and children's socioemotional functioning in extrafamilial contexts (e.g., Shields et al., 2001; Toth, Cicchetti, & Kim, 2002).

Discrepancies between present findings and earlier research may lie at both a methodological and a conceptual level. Having documented linkages between initial levels of school adjustment and children's secure representations of parent-child relationships, we concurrently examined earlier research linking children's internal representations of parent-child relationships and variables assessing children's adjustment. Thus, children's representations of parent-child relationships as secure, stable, and fulfilling may have an important function in establishing the initial adjustment of a child upon entry to school. However, the implications for children's secure representations of parent-child relationships on developmental trajectories across the early school years are unexplored in past work. Therefore, inferences regarding children's internal representations of parent-child relationships and children's adjustment trajectories are tenuous at best until replicated within a longitudinal design.

Differences in the pattern of findings for children's internal representations of interparental and parent-child relationships and school adjustment merit some discussion. Given that our study is one of the first to have simultaneously explored children's representation of two relationship contexts in the family, inferences regarding findings must be tempered until future research is conducted. However, one plausible explanation is that the pattern of findings may be a function of the differential, hierarchical organization of interparental and parent-child relationships in the home and relationship hierarchies present in the school context. For example, given that children experience interparental relationships as having a more balanced power structure with symmetrical and horizontal qualities, their

representations of processes within this relationship may map strongly onto their interactions with peers in the school context and may result in greater affinity to school (decreased loneliness and avoidance) and greater participation in the classroom. Along these lines, recent work has illuminated how children's difficulties in early peer relationships in elementary school may set the stage for children's school adjustment (in particular, for greater classroom disengagement and school avoidance; e.g., Buhs, Ladd, & Herald, 2006). Future work on how children's representations of interparental and parent-child relationships map onto relationships with specific peers or with specific teachers would help illuminate how representations of multiple family relationships guide the ability of children to function adaptively in the elementary school context. Nevertheless, conclusions reached in this article regarding the viability of both direct and indirect pathway conceptualizations in predicting children's school adjustment should be considered tentative until further research incorporating a familywide perspective and multiple domains of functioning in the school context is conducted.

Finally, although the direct and indirect path hypotheses focus on understanding how insecurity in a family relationship (i.e., interparental or parent-child) may be a product, in part, of adverse experiences in each specific family subsystem, the inclusion of multiple family processes in our test raises interesting questions about the nature and scope of family processes that predict children's representations in each family relationship context. To provide a broader, multivariate account of children's internal representations of parent-child relationships, multiple family systems conceptualizations have highlighted the interparental relationship as a key complementary process in the etiology of insecurity (e.g., Davies et al., 2006; Owen & Cox, 1997). Within these frameworks, the interparental subsystem provides children with a distinct family purview in which to evaluate the ability of parents to serve as sources of protection and support for them in times of stress and need in the family. Therefore, displays of frightening or vulnerable behaviors during bouts of interparental conflict may serve to undermine confidence in and attachment to parents.

Two studies have demonstrated that interparental conflict continued to be associated with infant attachment security even after parental difficulties in providing responsive caregiving were taken into account (Frosch et al., 2000; Owen & Cox, 1997). In accordance with this research, our results indicated that associations between interparental conflict and insecure representations of the parent-child relationship remained even after parental emotional availability was specified as a predictor of parent-child insecurity in the SEM. By extension, individual differences in children's insecure representations of the interparental relationship also may be associated with parental emotional availability. For example, displays of warmth, support, and availability by parents during parent-child interactions signify to children that parents have the ability to successfully manage stress and conflict in relationships in a way that maintains family harmony (Davies & Cummings, 2006). The fact that path between parental emotional availability and children's insecure representations of the interparental relationship was significant within a broader SEM that included interparental conflict supported this prediction.

The limitations of this study merit consideration by those interpreting our results. First, processes documented in this present study were examined in community samples, and findings may not generalize to clinical samples, families facing substantial hardships or difficulties, or more racially diverse samples. Second, pathways among interparental conflict, parental emotional availability, children's emotional security, and children's outcomes tended to be modest in magnitude. Nevertheless, in the context of our multimethod, latent trajectory models, even modest associations among family processes may be regarded as substantively meaningful. Third, given the assessment of only three time points, we were unable to examine curvilinear patterns of change in children's adjustment to

school. Fourth, although our aim was to examine a theoretically derived model of the impact of family processes on children's emotional security and adjustment, the study design does not rule out the possibility of bidirectional effects in the family, such as children's effects on the parent-child and interparental relationship (e.g., Schermerhorn, Cummings, DeCarlo, & Davies, 2007). Finally, our results pertain to early elementary school years, and different results may be found with older children and in different school contexts.

Despite these limitations, the results highlight the value of expanding empirical tests of a family process framework in models of interparental conflict and child adjustment. Thus, our findings highlight the mutually informative role of the direct and indirect pathways in delineating how and why children develop difficulties when they are exposed to high levels of interparental conflict. They also emphasize the importance of assessing intrinsic mechanisms within the child from a broader family perspective when accounting for why interparental conflict and parenting difficulties affect children's adjustment. In this multimethod, longitudinal study, insecurity in children's internal representations of both the interparental relationship and the parent-child relationship served as intervening mechanisms linking interparental and parent-child difficulties to children's difficulties in school. In sum, these findings advance understanding of the intrinsic processes that contribute to difficulties with stage-salient tasks for children who are experiencing interparental discord.

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References

- Alexander KL, Entwistle DR, Blyth DA, McAdoo HP. Achievement in the first two years of school: Patterns and processes. *Monographs of the Society for Research in Child Development*. 1988; 53(2):i-157.
- Arbuckle, JL.; Wothke, W. *Amos 4.0 user's guide*. Chicago: Smallwaters; 1999.
- Aviezar O, Sagi A, Joels T, Ziv Y. Emotional availability and attachment representations in kibbutz infants and their mothers. *Developmental Psychology*. 1999; 35:811-821. [PubMed: 10380871]
- Birch SH, Ladd GW. The teacher-child relationship and children's early school adjustment. *Journal of School Psychology*. 1997; 35:65-79.
- Biringen Z, Robinson J. Emotional availability: A reconceptualization for research. *American Journal of Orthopsychiatry*. 1991; 61:258-271. [PubMed: 2048641]
- Biringen Z, Damon J, Grigg W, Mone J, Pipp-Siegel S, Skillern S, Stratton J. Emotional availability: Differential predictions to infant attachment and kindergarten adjustment based on observation time and context. *Infant Mental Health Journal*. 2005; 26:295-308.
- Bretherton I. Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development*. 1985; 50:3-35.
- Bretherton, I.; Oppenheim, D.; Buchsbaum, H.; Emde, RN. the MacArthur Narrative Group. Unpublished manuscript. 1990. MacArthur story stem battery.
- Buhs ES, Ladd GW. Peer rejection as an antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology*. 2001; 37:550-560. [PubMed: 11444490]
- Buhs ES, Ladd GW, Herald SL. Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement. *Journal of Educational Psychology*. 2006; 98:1-13.

- Cassidy J, Asher SR. Loneliness and peer relations in young children. *Child Development*. 1992; 63:350–365. [PubMed: 1611939]
- Cassidy J, Kirsch S, Scolton K, Parke RD. Attachment and representations of peer relationships. *Developmental Psychology*. 1996; 32:892–904.
- Clark KE, Ladd GW. Connectedness and autonomy support in parent–child relationships: Links to children’s socioemotional orientation and peer relationships. *Developmental Psychology*. 2000; 36:485–498. [PubMed: 10902700]
- Cowan, P.; Cowan, C.; Ablow, J.; Johnson, VK.; Measelle, J. The family context of parenting in children’s adaptation to elementary school. Mahwah, NJ: Erlbaum; 2005.
- Cummings, EM.; Davies, PT. Children and marital conflict: The impact of family dispute and resolution. New York: Guilford; 1994.
- Cummings EM, Davies P. Emotional security as a regulatory process in normal development and the development of psychopathology. *Development and Psychopathology*. 1996; 8:123–139.
- Cummings EM, Davies PT. Effects of marital conflict on children: Recent advances and emerging themes in process-oriented research. *Journal of Child Psychology & Psychiatry*. 2002; 43:31–63. [PubMed: 11848336]
- Davies PT, Cummings EM. Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*. 1994; 116:387–411. [PubMed: 7809306]
- Davies PT, Cummings EM. Exploring children’s emotional security as a mediator of the link between marital relations and child adjustment. *Child Development*. 1998; 69:124–139. [PubMed: 9499562]
- Davies, PT.; Cummings, EM. Interparental discord, family process, and developmental psychopathology. In: Cicchetti, D.; Cohen, DJ., editors. *Developmental psychopathology: Vol. 3. Risk, disorder, and adaptation*. 2. New York: Wiley; 2006. p. 86–128.
- Davies PT, Cummings EM, Winter MA. Pathways between profiles of family functioning, child security in the interparental subsystem, and child psychological problems. *Development and Psychopathology*. 2004; 16:525–550. [PubMed: 15605624]
- Davies PT, Harold GT, Goeke-Morey MC, Cummings EM. Child emotional security and interparental conflict. *Monographs of the Society for Research in Child Development*. 2002; 67:1–129.
- Davies, PT.; Lindsay, L. Does gender moderate the effects of conflict on children?. In: Grych, J.; Fincham, F., editors. *Child development and interparental conflict*. New York: Cambridge University Press; 2001. p. 64–97.
- Davies PT, Winter MA, Cicchetti D. The implications of the emotional security theory for understanding and treating childhood psychopathology. *Development and Psychopathology*. 2006; 18:707–735. [PubMed: 17152397]
- Dunn, J.; Davies, L. Sibling relationships and interparental conflict. In: Grych, J.; Fincham, F., editors. *Child development and interparental conflict*. New York: Cambridge University Press; 2001. p. 273–290.
- Du Rocher Schudlich TD, Papp LM, Cummings EM. Relations of husbands’ and wives’ dysphoria to marital conflict resolution strategies. *Journal of Family Psychology*. 2004; 18:171–183. [PubMed: 14992619]
- Easterbrooks MA, Biesecker G, Lyons-Ruth K. Infancy predictors of emotional availability in middle childhood: The roles of attachment security and maternal depressive symptomatology. *Attachment and Human Development*. 2000; 2:170–187. [PubMed: 11707909]
- Enders CK. A primer on maximum likelihood algorithms for use with missing data. *Structural Equation Modeling: A Multidisciplinary Journal*. 2001; 8:128–141.
- Erel O, Burman B. Interrelatedness of marital relations and parent–child relations: A meta-analytic review. *Psychological Bulletin*. 1995; 118:108–132. [PubMed: 7644602]
- Frosch CA, Mangelsdorf SC, McHale JL. Marital behavior and the security of the preschooler–parent attachment relationships. *Journal of Family Psychology*. 2000; 14:144–161. [PubMed: 10740688]
- Greenberg MT, Speltz ML, DeKlyen M. The role of attachment in the early development of disruptive behavior problems. *Development and Psychopathology*. 1993; 5:191–213.

- Grych, JH. Increasing precision in the study of interparental conflict and child adjustment. In: Booth, A.; Crouter, AC.; Clements, M., editors. *Couples in conflict*. Mahwah, NJ: Erlbaum; 2001. p. 172-182.
- Grych JH, Fincham FD. Marital conflict and children's adjustment: A cognitive-contextual framework. *Psychological Bulletin*. 1990; 108:267-290. [PubMed: 2236384]
- Grych JH, Wachsmuth-Schlaefel T, Klockow LL. Interparental aggression and young children's representations of family relationships. *Journal of Family Psychology*. 2002; 16:259-272. [PubMed: 12238409]
- Kochenderfer BJ, Ladd GW. Peer victimization: Manifestations and relations to school adjustment in kindergarten. *Journal of School Psychology*. 1996; 34:267-283.
- Ladd GW. Probing the adaptive significance of children's behavior and relationships in the school context: A child by environment perspective. *Advances in Child Behavior and Development*. 2003; 31:43-104.
- Ladd GW, Burgess KB. Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment? *Child Development*. 2001; 72:1579-1601. [PubMed: 11699688]
- Ladd GW, Kochenderfer BJ, Coleman CC. Classroom peer acceptance, friendship, and victimization: Distinct relational systems that contribute uniquely to children's school adjustment? *Child Development*. 1997; 68:1181-1197. [PubMed: 9418233]
- Ladd GW, Profilet SM. The Child Behavior Scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology*. 1996; 32:1008-1024.
- Locke HJ, Wallace KM. Short marital adjustment prediction tests: Their reliability and validity. *Marriage and Family Living*. 1959; 21:251-255.
- MacKinnon DP, Lockwood CM, Hoffman JM, West SG, Sheets V. A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*. 2002; 7:83-104. [PubMed: 11928892]
- Malik, NM.; Lindahl, KM. System for Coding Interactions in Dyads (SCID). In: Kerig, PK.; Baucom, DH., editors. *Couple observational coding systems*. Mahwah, NJ: Erlbaum; 2004. p. 173-188.
- Melby, JN.; Conger, RD. The Iowa Family Interaction Rating Scales: Instrument summary. In: Kerig, PK.; Lindahl, KM., editors. *Family observational coding systems: Resources for systemic research*. Mahwah, NJ: Erlbaum; 2001. p. 33-58.
- National Institute of Child Health and Human Development Early Child Care Research Network. Fathers' and mothers' parenting behavior and beliefs as predictors of children's social adjustment in the transition to school. *Journal of Family Psychology*. 2004; 18:628-638. [PubMed: 15598168]
- Oppenheim D. Child, parent, and parent-child emotion narratives: Implications for developmental psychopathology. *Development and Psychopathology*. 2006; 18:771-790. [PubMed: 17152400]
- Owen MT, Cox MJ. Marital conflict and the development of infant-parent attachment relationships. *Journal of Family Psychology*. 1997; 11:152-164.
- Paley B, Conger RD, Harold GT. Parent's affect, adolescent cognitive representations and adolescent social development. *Journal of Marriage and the Family*. 2000; 62:761-776.
- Perry KE, Weinstein RS. The social context of early schooling and children's school adjustment. *Educational Psychologist*. 1998; 33:177-194.
- Schermerhorn AC, Cummings EM, DeCarlo CA, Davies PT. Children's influence in the marital relationship. *Journal of Family Psychology*. 2007; 21:259-269. [PubMed: 17605548]
- Schoppe-Sullivan SJ, Schermerhorn AC, Cummings EM. Marital conflict and children's adjustment: Evaluation of the parenting process model. *Journal of Marriage and Family*. 2007; 69:1118-1134.
- Shamir H, DuRocher Schudlich T, Cummings EM. Marital conflict, parenting styles, and children's representations of family relationships. *Parenting*. 2001; 1-2:123-151.
- Shields A, Ryan RM, Cicchetti D. Narrative representations of caregivers and emotion dysregulation as predictors of maltreated children's rejection by peers. *Developmental Psychology*. 2001; 37:321-337. [PubMed: 11370909]
- Solomonica-Levi D, Yirmiya N, Erel O, Samet I, Oppenheim D. The associations among observed maternal behavior, children's narrative representations of mothers, and children's behavior problems. *Journal of Social and Personal Relationships*. 2001; 18:673-690.

- Sturge-Apple ML, Davies PT, Boker SM, Cummings EM. Interparental discord and parenting: Testing the moderating role of child and parent gender. *Parenting: Science and Practice*. 2004; 4:365–384.
- Toth SL, Cicchetti D, Kim J. Relations among children's perceptions of maternal behavior, attributional styles, and behavioral symptomatology in maltreated children. *Journal of Abnormal Child Psychology*. 2002; 30:487–502. [PubMed: 12403152]
- Vecchiotti S. Kindergarten: An overlooked educational policy priority. *Social Policy Report*. 2003; 17:3–17.
- Warren SL, Oppenheim D, Emde RN. Can emotions and themes in children's play predict behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1996; 35:1331–1337. [PubMed: 8885587]
- Wentzel KR. Relations between social competence and academic achievement in early adolescence. *Child Development*. 1991; 62:1066–1078. [PubMed: 1756656]
- Wentzel KR. Family functioning and academic achievement in middle school: A social emotional perspective. *Journal of Early Adolescence*. 1994; 14:268–291.

Figure 1.

Process model outlining direct and indirect pathways of the association between interparental conflict, parental emotional availability, children's representations of interparental and parent-child relationships, and children's trajectories of difficulty in emotional adjustment to school. For ease of presentation, nonsignificant structural paths are not shown in the figure. Interpar = interparental; Sec = security; Com = competence; RQ = relationship quality; RS = relationship spillover; Coh = cohesion; Sup = support; VAgg = verbal aggression; Neg = negativity and conflict; Com = communication; PR = positive reinforcement; WRM = warmth; Int Reps = internal representations; Emot Adj Diff = emotional adjustment difficulties; W1 = Wave 1; W2 = Wave 2; W3 = Wave 3. $*p \leq .05$.

Figure 2.

Process model outlining direct and indirect pathways of the association between interparental conflict, parental emotional availability, children's representations of interparental and parent-child relationships, and children's trajectories of difficulty in classroom engagement in school. For ease of presentation, nonsignificant structural paths are not shown in the figure. Interpar = interparental; Sec = security; Com = competence; RQ = relationship quality; RS = relationship spillover; Coh = cohesion; Sup = support; VAgg = verbal aggression; Neg = negativity and conflict; Com = communication; PR = positive reinforcement; WRM = warmth; Int Reps = internal representations; Diff Class Engage = difficulties in class engagement; Wave 1; W2 = Wave 2; W3 = Wave 3. $*p \leq .05$.

Table 1
Means, Standard Deviations, and Intercorrelations of the Main Variables in the Primary Analyses

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	M	SD
1. IP cohesion	—																					5.76	1.86
2. IP support	.66*	—																				12.09	3.92
3. IP verbal aggression	.42*	.63*	—																			6.43	3.06
4. IP negativity and conflict	.46*	.67*	.83*	—																		7.59	3.20
5. IP communication	.69*	.90*	.59*	.59*	—																	11.37	3.32
6. PC positive reinforcement	-.21*	-.21*	-.06	-.06	-.23*	—																5.76	2.36
7. PC warmth/support	-.23*	-.17*	-.03	-.03	-.19*	.75*	—															8.75	2.20
8. PC relationship quality	-.15*	-.15*	-.05	-.01	-.18*	.67*	.86*	—														10.73	1.85
9. CR marital security	.18*	.15*	.17*	.22*	.16*	-.11	-.13*	-.18*	—													3.06	0.75
10. CR marital competence	.16*	.13*	.14*	.18*	.16*	-.10	-.14*	-.21*	.89*	—												3.05	0.72
11. CR marital relationship quality	.17*	.15*	.13*	.18*	.19*	-.12	-.15*	-.21*	.84*	.84*	—											3.09	0.79
12. CR marital relationship spillover	.08	.11	.10	.06	.10	-.06	-.09	-.10	.46*	.47*	.35*	—										1.89	0.67
13. CR parental security	.13*	.13*	.09	.14*	.15*	-.11	-.14*	-.18*	.42*	.36*	.33*	.14*	—									5.22	1.08
14. CR parental competence	.14*	.15*	.11	.14*	.14*	-.15*	-.18*	-.20*	.41*	.41*	.33*	.18*	.80*	—								5.38	1.13
15. CR parental relationship quality	.16*	.21*	.19*	.22*	.23*	-.18*	-.18*	-.21*	.40*	.37*	.38*	.11	.81*	.71*	—							5.43	1.05
16. Wave 1 emotional adjustment difficulties	.12	.11	.05	.07	.06	-.01	-.04	-.06	.20*	.23*	.19*	.25*	.14*	.10	.09	—						16.50	4.83
17. Wave 2 emotional adjustment difficulties	.03	.09	.02	.04	.02	-.03	-.06	-.02	.07	.13	.09	.16*	.03	.03	.03	.30*	—					16.24	4.79
18. Wave 3 emotional adjustment difficulties	.13	.18*	.09	.10	.12	-.04	-.10	-.08	.01	.07	-.01	.01	.05	.02	.05	.20*	.37*	—				15.82	4.13

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	M	SD
19. Wave 1 academic engagement difficulties	.05	.02	.10	.06	.10	-.14*	-.17*	-.24*	.32*	.26*	.28*	.13*	.28*	.31*	.23*	.21*	.04	.07	—	—	—	3.65	3.75
20. Wave 2 academic engagement difficulties	-.01	.04	.07	.05	.08	.01	-.07	-.16*	.14*	.11	.12	.10	.14*	.12	.11	.13	.17*	.10	.58*	—	—	4.43	4.47
21. Wave 3 academic engagement difficulties	.05	.05	-.04	-.01	.07	-.18*	-.16*	-.23*	.20*	.20*	.18*	.16*	.16*	.13	.12	.18*	.15*	.19*	.51*	.59*	—	4.33	4.51

Note. IP = interparental conflict variable; PC = parenting variable; CR = child report on the MacArthur Story Stem Battery.

* $p < .05$.

Table 2**Results From MacKinnon Tests of Indirect Effects**

Model	z'
Children's emotional adjustment to school difficulties	
Path: Interparental conflict > children's insecure reps of marriage	
Outcome: Emotional adjustment to school difficulties	
Intercept	1.68 *
Slope	1.43 *
Path: Emotional availability > children's insecure reps of marriage	
Outcome: Emotional adjustment to school difficulties intercept	
Intercept	1.74 *
Slope	1.46 *
Children's classroom engagement difficulties	
Path: Interparental conflict > children's insecure reps of marriage	
Outcome: Classroom engagement difficulties intercept	
	1.71 *
Path: W1 interparental conflict > children's insecure reps of parent	
Outcome: Classroom engagement difficulties intercept	
	1.84 *
Path: W1 emotional availability > children's insecure reps of marriage	
Outcome: Classroom engagement difficulties intercept	
	1.78 *
Path: W1 emotional availability > children's insecure reps of parent	
Outcome: Classroom engagement difficulties intercept	
	1.96 *

Note. reps = representations; of parent = of parent-child relationship; W1 = Wave 1.

*
 $p < .05$.