Interparental Conflict in Kindergarten and Adolescent Adjustment: Prospective Investigation of Emotional Security as an Explanatory Mechanism

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Abstract

Advancing the long-term prospective study of explanations for the effects of marital conflict on children's functioning, relations were examined between interparental conflict in kindergarten, children's emotional insecurity in the early school years, and subsequent adolescent internalizing and externalizing problems. Based on a community sample of 235 mothers, fathers and children (*M* = 6.00, 8.02, 12.62 years), and multi-method and multi-reporter assessments, structural equation model (SEM) tests provided support for emotional insecurity in early childhood as an intervening process related to adolescent internalizing and externalizing problems, even with stringent auto-regressive controls over prior levels of functioning for both mediating and outcome variables. Discussion considers implications for understanding pathways between interparental conflict, emotional insecurity and adjustment in childhood and adolescence.

Relations between interparental discord and child adjustment problems are well-established (Cummings & Davies, 2002), including links between marital conflict and adolescents' internalizing and externalizing adjustment problems (Buehler, Lange, & Franck, 2007; El-Sheikh, Buckhalt, Mize, & Acebo, 2006). Moreover, longitudinal associations between marital conflict and adjustment have been shown (Harold & Conger, 1997), including tests of theoretical models that demonstrate explanatory mechanisms in short-term longitudinal studies (Grych, Harold & Miles, 2003; Harold, Fincham, Osborne & Conger, 1997). However, few long-term longitudinal studies exploring the effects of marital conflict on child adjustment have been conducted. In particular, process-oriented investigations of possible bases for these relations are notably lacking (Ingoldsby, Shaw, Owens, & Winslow, 1999; Neighbors, Forehand, & Bau, 1997). Moreover, tests of well-articulated theoretical models for these relations rarely span time periods that extend across major developmental periods, for example from early childhood to adolescence. Examinations of these relations over longer periods of time are critical for advancing developmental models of explanatory mechanisms, especially regarding explanatory processes contributing to pathways of

development resulting from children's exposure to marital conflict (Davies & Cummings, 2006).

This report examines relations between interparental conflict in early childhood and child adjustment from early childhood to early adolescence, including the investigation of children's emotional insecurity as an explanatory mechanism during this period (Davies & Cummings, 1994). Short-term longitudinal studies support emotional security as an explanatory variable for child adjustment outcomes (Davies, Harold, Goeke-Morey & Cummings, 2002; Harold, Davies, Goeke-Morey & Cummings, 2004). Cummings, Schermerhorn, Davies, Goeke-Morey and Cummings (2006), for example, reported the results of two short-term longitudinal studies based on independent samples that supported emotional security theory (EST; Davies & Cummings, 1994).

The present study extends past work by examining the longer-term significance of marital conflict for adjustment across major developmental periods. According to EST, children's emotional security about family relationships, including marital conflict, is related to their sense of protection, safety and security, with implications for their optimal socio-emotional regulation. Emotional insecurity is reflected in a broad class of interrelated responses, including heightened emotional and behavioral reactivity (Cummings & Davies, 1996). Although EST proposes that emotional insecurity may be related to mental health problems across the life span, developmental transformations during the course of childhood and adolescence may alter the magnitude of pathways among interparental conflict, child emotional insecurity, and child maladjustment (Cummings & Davies, 2010). Specifically, in this study relations are examined between marital conflict in kindergarten, school-age children's emotional insecurity, and adolescent internalizing and externalizing problems. Moreover, autoregressive controls are introduced thereby elevating that rigor of tests of causal processes. That is, advancing a specific theoretical model test of emotional security theory (EST, Davies & Cummings, 1994), marital conflict in early childhood is examined in relation to change in children's emotional insecurity and change in emotional security, in turn, is tested in relation to change in adjustment.

Little is known about whether exposure to marital conflict and emotional insecurity about interparental conflict in early childhood are related to adjustment in later developmental periods, that is, early adolescence, especially with stringent tests accounting for previous levels of adjustment. Consistent with attachment theory and research (e.g., Carlson, Sroufe & Egeland, 2004; Sroufe, 2005), EST posits that children may be affected by their childhood experience with marital conflict in relatively lasting ways. Relatedly, emotional insecurity is hypothesized to be derived from experiences with interparental conflict and to be related in lasting ways to subsequent socioemotional functioning (Cummings & Davies, 2010). An assumption is that preserving a sense of security is a goal that organizes children's emotional regulation experiences (e.g., fear), action tendencies (e.g., withdrawal, intervention), and appraisals of self and interpersonal relationships (e.g., internal representations of threat) (Cummings & Davies, 1996; Davies, Harold, et al., 2002; see also Bowlby, 1969: Sroufe & Waters, 1977). Although the child evaluates interpersonal contexts in relation to multiple goals, EST postulates that safety and security are among the most salient in the hierarchy of human goals (Bowlby, 1973; Davies & Sturge-Apple, 2007; Waters & Cummings, 2000). Therefore, examining the long term implications of children's emotional insecurity about marital relations is critical in understanding the enduring impact of marital conflict on children's emotional and behavioral difficulties.

A developmental psychopathology model of emotional insecurity posits that experiential histories of interparental difficulties in childhood may predict adolescent adjustment problems (Davies & Cummings, 2006). Highlighting the significance of early experience,

the concept of hierarchical motility suggests that characteristics of prior psychological organizations and experiences may emerge in new, dynamic forms of functioning in later development, even in the face of changing circumstances (Cicchetti & Cohen, 1995; Cummings, Davies, & Campbell, 2000). Supporting this prediction, Sroufe, Egeland and Kreutzer (1990) found that early family experiences and child adaptation related to child functioning in elementary school. With emergent social-role taking capacities and the assumption of multiple social roles, emotional security conceptualizations indicate that as children get older they must increasingly grapple with concerns about the safety of their caregivers and the implications of interparental conflict for their own well-being (Cicchetti, Cummings, Greenberg, & Marvin, 1990). Thus, witnessing chronic interparental conflict during childhood may present new challenges that precipitate novel, protracted organizations in functioning even in the face of subsequent changes in interparental and family dynamics (Cummings & Davies, 1995).

Moreover, developmental transformations across childhood and adolescence may amplify or dilute the magnitude of pathways among interparental conflict, emotional insecurity, and maladjustment. For example, increases in coping repertoires and perceived coping efficacy as children progress through adolescence may serve to offset some of the vulnerability associated with exposure to interparental conflict or concerns about security (Jouriles, Spiller, Stephens, McDonald, & Swank, 2000; Grych, 1998). On the other hand, relative to younger children, adolescent concerns may be amplified by their increased sensitivity to adult problems, longer histories of exposure to conflict, and stronger dispositions to mediate in conflicts (Peris, Goeke-Morey, Cummings, & Emery, 2008). Pertinent stage-salient issues include adolescents' struggle to develop autonomy while maintaining relatedness (Zimmer-Gembeck & Collins, 2003), which is negatively influenced by marital conflict (Allen, Hauser, O'Connor, Bell, & Eickholt, 1996). Relations between marital discord and adjustment problems in adolescence are reported (e.g., Harold & Conger, 1997; Stattin & Klackenberg, 1992), including associations between marital conflict and internalizing and externalizing problems (Davies, Myers, Cummings & Heindel, 1999; Davis, Hops, Alpert & Sheeber, 1998; Harold & Conger, 1997). However, a gap in knowledge is whether marital conflict in early childhood has effects that last into adolescence, with questions also remaining about explanatory mechanisms that may account for such relations (Cummings & Davies, 2010; Grych et al., 2003).

In summary, this study uniquely tests a theoretically-driven model for relations between marital conflict, emotional insecurity and internalizing and externalizing problems, with analyses assessing the time span between childhood and early adolescence. Moreover, emotional insecurity is examined as a possible explanatory process that may contribute to longer-term effects of marital conflict on internalizing and externalizing problems. It is expected that tests of this theoretical model will show that children's internalizing and externalizing problems in adolescence are related to marital conflict through children's emotional insecurity about interparental conflict in childhood, even in the context of stringent autoregressive controls accounting for prior levels of functioning and based on rigorous multi-method and multi-reporter assessments. Consistent with current approaches to testing mediation, the focus is on testing for a mediated or intervening effect of emotional insecurity consistent with the theoretical model without regard to the traditional requirement of demonstration of a significant predictor-outcome relation (Baron & Kenny, 1986). Notably, there is an emerging consensus that "a mediated effect may exist whether or not there is a statistically significant effect of the independent variable on the dependent variable" (MacKinnon, 2008, page 50) and that the "rigid requirement of the first step of Baron and Kenny's meditational guidelines be dropped" (Shrout & Bolger, 2002, page 430). Specifically, if one hypothesizes a mediated effect, then the Baron and Kenny Step 1 is a test of relationship between predictor and outcome without controlling for any mediators, that is,

a test of total effect as simply the correlation between conflict and symptoms, rather than an appropriate test of direct and indirect effects as specified by the EST theoretical model. As such, this step is statistically underpowered in this context and also fails to include the key conceptual factor to be tested, that is, the intervening or mediating effect (Hayes, 2009; Maxwell, Cole & Mitchell, in press). Given these concerns, Rucker, Preacher, Tormala & Petty (2011) have advocated that "researchers interested in understanding intervening effects in proposed theoretical models should shift attention to testing the mediation effect itself (page 360)". Accordingly, the present paper focuses on testing emotional insecurity as a mediating or intervening effect, based on structural equation modeling (SEM), with the autoregressive controls included that provide a rigorous basis for causal inference (Maxwell et al., in press).

Finally, the moderating effects of child gender are examined. It has proven difficult to draw any clear-cut conclusions regarding the role of child gender in models of marital conflict, with even large-sample studies and meta-analyses failing to find consistent support for moderating effects (e.g., Buehler, Anthony, Krishnakumar, & Stone, 1997). In addition, meditational pathways concerning emotional insecurity have not differed as a function of child gender in past studies (Cummings & Davies, 2010). However, the developmental time course and age span in the present study have not been examined in the past; thus, the possibility exists that gender differences may emerge in longer-term longitudinal analyses, including the transition from childhood to adolescence. For example, gender differences in pathways between marital conflict and adjustment might be expected in early adolescence (Davies & Windle, 1997).

Method

Participants

The current study examines data from a larger multi-site longitudinal project investigating family processes, marital conflict and children's psychological adjustment. Participants at the outset were a representative community sample of 235 primarily middle-class families located in areas of the Midwest and Northeast, United States. This study is based on data collected when children (106 boys, 129 girls) were in kindergarten (T1: M age = 6.00; SD = .45), second (T2: M age = 8.02; SD = .49), and seventh (T3: SD = .56) grades. The majority of couples were married (88.6%) and families were representative of the demographic characteristics in the areas they resided (76.5% Caucasian, 16.7% African American, 3.8% Hispanic, 2.1% indicated being of another race). The median annual family income range reported was between $40,000 and $54,999. At T1, mothers' M age was 35.0 years (SD = 5.57) and fathers' M age was 38.6 years old (SD = 6.09).

One hundred and ninety-four (83%) of the original cohort of families completed the T3 assessment, 7 years after the initial assessment, when children were in seventh grade. Although only mother, father, and one child participated in the study, one hundred and seventy-four of these families indicated that the target child had siblings (M age = 13.46, SD = 6.42) with an average of 2.21 (SD = 1.62) children in these families. Thirty-six couples separated or divorced between Times 1 and 3; two fathers passed away during the study. Families were retained if target members were willing to participate, regardless of separation, divorce or loss of family member. Even in the presence of interparental separation or divorce, both target parents sometimes participated if willing and significantly involved in the target child's life (n=3 at T3). If one of these parents were unavailable or unwilling to participate, especially in instances of remarriage, the new partner was included in study (n=18 at T3); in some cases (n=8 at T3) data was only collected from a single parent and child. Data from any and all family members were retained for any time points that families participated. For certain constructs, for example, interparental conflict, if the

couple participating in the study indicated that they were spending significant time with each other and the target child (e.g., interacting on a daily basis), regardless of separation, they completed interparental assessments. Analytical approaches used maximum likelihood estimation in the presence of missing data. Comparisons of families that were retained in the study versus those who withdrew from participating did not suggest any differences based on demographic variables, including family income, parent education, marital and relationship status, parent relationship with child, and time spent living together. Additional tests for differences due to attrition did not suggest any differences between families retained versus withdrawn, on the main variables for the study, that is, marital conflict, emotional security, and child internalizing and externalizing problems.

Procedure

Participants were recruited through flyers and postcards distributed in the community. Flyers were sent home with children through schools, placed in daycare agencies, and distributed via booths at community events. Eligibility for the study included the presence of a child in kindergarten who lived with a parental couple for a minimum of 3 years who were able to complete assessments in English. Families were scheduled to attend two visits at each time point of data collection; each session was approximately 2.5 hours. Mother, father, and child were invited to attend the first visit of each wave, whereas only mother and child were requested to attend the second visit. At each session, informed consent and assent were obtained and monetary compensation was provided for participation; transportation and childcare were also provided if necessary.

Goals of this paper included assessing the cogency of EST across developmental periods and over longer periods of time. The three time points included thus were selected to maximize as much as possible based on the present dataset, the inclusion of distinct developmental periods (i.e., kindergarten, school-age, adolescence) and to provide the most challenging test of marital conflict as a predictor of change in emotional insecurity. The rationale for the research design was to provide a rigorous three-wave model test of relations between marital conflict, emotional insecurity, and child adjustment, including autoregressive controls over prior levels of functioning for mediator and outcome variables. Accordingly, to test effects of marital conflict on changes in emotional insecurity over time, relations between marital conflict when children were in kindergarten and children's emotional insecurity when children were in second grade were assessed, with autoregressive controls for prior levels of emotional insecurity in kindergarten. To test the effects of emotional insecurity on subsequent functioning in adolescence, relations between emotional insecurity when children were in kindergarten and children's adjustment problems in early adolescence were assessed, with autoregressive controls for prior levels of adjustment problems in second grade. To assess interparental conflict, husbands and wives engaged in two observational problem-solving interactions. Couples were given a list of possible topics to discuss (e.g., finances, parenting practices) and instructed to individually select three topics that were hard to handle or problematic in their relationship. During a 3-minute discussion period, couples chose one topic from each person's list and the order that they wanted to discuss their topics. Couples were then given 7 and one-half minutes to discuss each topic, and were instructed to work toward a solution or compromise regarding each topic. They were instructed at the end of this period that it was time for the second discussion to begin. Interactions were videotaped and later coded for specific conflict behaviors, among other emotional and behavioral indices (Cummings, Cummings, Goeke-Morey, Du Rocher- Schudlich, & Cummings, 2006).

Measures

Interparental conflict—Husbands and wives completed the *Conflicts and Problem-Solving Scales* (CPS; Kerig, 1996) reporting on the frequency and severity of minor and major conflicts (e.g., *"How often do you and your spouse have minor conflicts?").* Additionally, husbands and wives reported on their own and their spouses' behaviors during conflict. Physical aggression during conflict was assessed on a 7-item scale (e.g., "*How often do you/ your spouse throw objects, slam doors, break things?").* Stonewalling during conflict was assessed on a 6-item scale (e.g., "*How often do you/your spouse sulk, refuse to talk?*"). Cronbach αs for wives in this sample ranged from .67 to .85 ($M = .75$) and for husbands ranged from .68 to .90 ($M = .76$). A paired samples t-test was conducted to examine mean differences in conflict tactics between husbands and wives; there were no differences in reported use of physical aggression (M diff = .15; t = .93, *ns*), stonewalling behaviors (M diff = .03; t = .17, *ns*), or overall frequency and severity of conflict (M diff = . 10; t = .48, $p < .01$). Husbands' and wives' reports were averaged; husbands and wives scores were significantly correlated (Physical aggression: $r = .44$, $p < .01$; Stonewalling: $r = .$ 41, $p < .01$; report of Frequency and Severity: $r = .32$, $p < .01$). Therefore, scores were summed across couples, resulting in a single aggregate score for each dimension of interparental conflict.

Additionally, observational assessments of interparental conflict were included from the problem-solving interaction task to yield a multi-method assessment. Conflict tactics were assessed for each 30-second interval on a scale ranging from 0 *(no display of the behavior)* to 2 (*strong display of the behavior).* Nonverbal anger included hostility expressed without words (e.g., *eye rolling*) while verbal anger was expressed through hostility in tone of voice, content of speech, or in stating that one felt anger. Two research assistants were extensively trained on the coding system, and after achieving reliabilities with intraclass coefficients above .60, the research assistants independently coded each interaction. Intraclass correlation coefficients for these variables ranged from .67 to .98. A paired samples t-test was conducted to examine mean differences in conflict tactics between husbands and wives; results indicated that wives exhibited more Verbal anger (M diff = .63; t = 2.52, $p < .05$) and more Nonverbal anger (M diff = 1.69; t = 11.55, $p < .01$). Husbands' and wives' conflict behaviors were significantly correlated (Verbal anger: $r = .77$, $p < .01$; Nonverbal anger: $r = .18$, $p < .01$). Husbands' and wives' use of Nonverbal and Verbal anger tactics were summed within these categories across the two problem-solving tasks and then combined across husbands and wives to create an aggregate couple score for Nonverbal and Verbal anger tactics, respectively.

Emotional insecurity about the marital relationship—Husbands and wives completed the *Security in the Marital Subsystem- Parent Report Inventory* (SIMS-PR: Davies, Forman et al., 2002), a parent report of children's emotional insecurity. Parents separately reported on children's emotional and behavioral reactions to witnessing interparental conflict on a 5-item Behavioral dysregulation subscale (e.g., "*Starts hitting, kicking, slapping, or throwing things at family members*") and a 10- item negative Emotional reactivity subscale (e.g., "*Appears afraid").* Parents also reported on children's behaviors that reduced conflict exposure on a 5-item Avoidance scale (e.g., "*Tries to get away from us; leaves the room"*) and a 9-item Involvement scale (e.g., "*Tries to comfort one or both of us"*). Each item was rated from 1 (*not at all like him/her*) to 5 (*a whole lot like him/her*). Reliability coefficients for scales in our sample ranged from .70 to .84 across time points. Husbands and wives report of emotional security were correlated at each time point (T1: $r = .32$, $p < .01$; T2: $r = .15$, $p < .05$). Husbands and wives scores were then combined, resulting in an aggregate score for each subscale.

Child maladjustment—Parents completed the Child Behavior Checklist (CBCL; Achenbach, 1991) in T2 assessing internalizing and externalizing symptoms. The CBCL internalizing subscales included Anxious/depressed (13 items; e.g., *nervous, high strung, or tense*), Withdrawn (7 items; e.g., *withdrawn, doesn't get involved with others*) and Somatic complaints (11 items; e.g., *headaches*) which comprise internalizing problems. At T3, adolescents also reported on their internalizing symptoms, completing the Center for Epidemiological Studies-Depression scale (CESD; Radloff, 1977) and the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1979). Adolescents reported on the 20-item CESD scale the extent to which they exhibited depressed symptoms (e.g., *felt lonely*) during the past week. Each item was rated from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Adolescents also completed the 28-item RCMAS reporting the extent to which (0 = *no* /1 = *yes*) the anxious symptom is true of them (e.g., *often worry that something bad will happen*). At T2, the CBCL externalizing problems scale included Aggressive (20 items; e.g., *gets into many fights*) and Delinquent (13 items; e.g., *vandalism*) subscales. The T3 CBCL externalizing assessment included Rule-breaking (a 14-item scale), an 18-item assessment of Aggression, and a subscale assessing Attention Difficulties (8 items; e.g., *can't concentrate/pay attention*). Reliability coefficients in this sample ranged from .60 to .90 ($M = .73$) for all internalizing and externalizing subscales for fathers, and .61 to .90 ($M = .73$) for mothers, across time points. Husbands and wives reports of externalizing and internalizing behaviors were correlated within time points (T2: externalizing $r = .51$, $p < .01$, internalizing $r = .36$, $p < .01$; T3: externalizing $r = .56$, $p < .01$, internalizing $r = .29$, $p < .01$). Reliability coefficients for adolescents' reports were also good, .87 for the RCMAS and .86 for the CESD.

Results

Descriptive statistics and intercorrelations for study variables are presented in Table 1. Differences in children's maladjustment based on child gender were examined. Analyses of variance indicated differences in levels of externalizing symptoms at T2 ($F_{(1,206)} = 5.17$) supporting higher levels of externalizing symptoms for boys ($M = 10.25$; $SD = 6.28$) in comparison to girls ($M = 8.36$; $SD = 5.72$). Therefore, child gender was included as a covariate in subsequent analyses.

To examine the central hypotheses of the current paper, mediational tests of autoregressive models of inter-individual change derived from structural equation modeling (SEM) were used. SEM is generally well-suited for the study of influence flows in panel data, also allowing for control over individual differences by estimating the standardized autoregressive component, even in the context of a lack of full measurement equivalence in the measures over time (Herzog & Nesselroade, 2003). As noted by Maxwell et al. (in press), mediation ultimately involves questions of causation, with the autoregressive method a special type of structural equation model that is especially appropriate for this purpose. The auto-regressive method reflected in SEM provides a rigorous basis for causal inference, thus appropriate for testing mediation (see also Mulaik, 2009; Pearl, 2009), including the potential for the appropriate assessments of direct and indirect effects from a causal perspective (Pearl, 2011).

These analyses examined marital conflict when children were in kindergarten (T1) in relation to change in emotional insecurity (T2), and, in turn, the influence on internalizing and externalizing symptoms (T3). With regard to the rationale for model testing, to increase the rigor of hypothesis testing, specific autoregressive controls were included for T1 emotional insecurity effects on T2 emotional insecurity, and for T2 adjustment problem effects on T3 adjustment problems. Structural equation modeling analyses were conducted using Analysis of Moment Structures (AMOS, v. 16.0.1; Arbuckle, 2007). AMOS utilizes a

full information maximum likelihood (FIML) approach to estimating missing data, which computes the likelihood function for each case incorporating all of the available data (Bollen & Curran, 2006). AMOS provides measures of goodness of fit, parameter estimates, and standard errors.

Accordingly, a series of models were examined to test pathways between marital conflict, emotional insecurity, and maladjustment longitudinally. As we have noted, the stringency and precision of model tests were increased by including prior levels of child functioning (i.e., maladjustment, emotional insecurity), as appropriate to making inferences about causation (Maxwell et al., in press), and simultaneous inclusion of internalizing and externalizing symptoms in the same analysis. Multiple indices of fit were examined to determine the adequacy of the model fit for the data. Criteria for evaluating model fit were based on the comparative fit index (CFI) approaching one (Bentler, 1990), a root mean square error of approximation (RMSEA) less than or equal to .08 (MacCallum, Browne, & Sugawara, 1996), and a relative χ^2 index (χ^2/df) values below 3 (Arbuckle & Wothke, 1999).

Latent variables comprised of three or more manifest indicators were constructed. Marital conflict was comprised of two conflict indicators from the observational assessment of marital conflict behaviors (e.g., Verbal Anger; Nonverbal Anger), and three conflict indicators from aggregated parent reports of tactics used in the home (e.g., Frequency and Severity; Stonewalling; Physical Aggression). Children's emotional insecurity at T1 and 2 consisted of four manifest indicators, that is, aggregate parent reports of children's emotional reactivity, behavioral dysregulation, avoidance of conflict, and involvement in marital conflict. At T3, children's internalizing symptoms were comprised of three aggregate parent reports of symptoms (e.g., anxious/depressed, withdrawn, and somatic complaints), and two child reports (e.g., depressive and anxious symptoms). At T3, children's externalizing symptoms were comprised of three aggregate parent reports (e.g., aggression, delinquency, rule-breaking). At T2 fewer indices of internalizing and externalizing problems were measured. Two indicators of externalizing symptoms were assessed, thus, a manifest variable summing the two indicators was used (aggression, delinquency). Manifest variables that comprised each latent variable (i.e., marital conflict, emotional insecurity, externalizing and internalizing problems) were all significantly correlated with one another (see Table 1), which provided further justification for the latent variables used in this study.

Central to the aims of the current study, a model examining the role of emotional insecurity as an explanatory variable, impacted by marital conflict at T1, and influencing children's adjustment into early adolescence was tested. The model is shown in Figure 1 and included relations between marital conflict at T1, emotional insecurity at T2, and child internalizing and externalizing difficulties at T3. Tests of these pathways were subjected to a rigorous model test by including both adjustment outcomes in the same model and controlling for children's emotional insecurity at T1 and both adjustment outcomes at T2 (see Figure 1). Thus, marital conflict at T1 was examined in relation to the change over a two-year period in emotional insecurity; in turn, emotional insecurity at T2 was examined in relation to the change in adjustment difficulties across the five-year period between T2 and T3. Highlighting the rigor of the autoregressive controls, children's emotional security was significantly related between T1 and T2 ($\beta = .35$, $p < .01$), and adjustment problems were significantly associated across T2 to T3 (internalizing problems: $\beta = .56$, $p < .01$; externalizing problems: $\beta = .67$, $p < .01$). This comprehensive theoretical model test provided a good fit for the data ($\chi^2(227) = 421.40$, $p < .05$; $\chi^2/df = 1.86$; CFI= .88, RMSEA=.05). Thus, even with multiple and stringent auto-regressive controls, this model indicated that marital conflict at T1 significantly predicted the change in children's

emotional insecurity from T1 to T2 ($\beta = .30$, $p < .01$); emotional insecurity, in turn, predicted change in children's internalizing problems ($\beta = .25$, $p < .05$) and externalizing problems ($\beta = .21$, $p < .05$) from T2 to T3. This result thus supported that marital conflict was related to increased emotional insecurity between kindergarten and second grade, which, in turn, was associated with increased internalizing and externalizing difficulties from second grade to seventh grade. The pathways between marital conflict and child adjustment were not significant (internalizing: $\beta = .01$, $p = ns$; externalizing: $\beta = .13$, $p = ns$) in the context of this model.

Finally, to more directly test the influence of child gender in the model, we also conducted tests of gender as a moderator of associations between marital conflict, emotional insecurity, and child adjustment using stacked modeling procedures (Sturge-Apple, Davies, Boker and Cummings, 2004). First, measurement invariance in the factor loadings was examined: A model with factor loading constrained to be equal across groups did not significantly differ from a model with factor loadings free to vary ($\chi^2_{diff}=18.09$, $df_{diff} = 15$, $p = ns$). Next, the constrained model was examined in comparison to a model where the pathways between marital conflict, emotional security and children's internalizing and externalizing problems were also constrained to be equal for boys and girls. These models did not differ significantly ($\chi^2_{diff}=6.26$, $df_{diff} = 5$, $p = ns$). Thus, no gender differences were found for the associations between marital conflict, emotional security, and children's maladjustment.

Discussion

Building on recent investigations, the present study contributes to the accumulating support for emotional security as an explanatory variable for the effects of marital conflict on child adjustment. Moreover, the present study provides further evidence that these relations may hold across relatively long periods of time and across developmental transitions, beginning with children's experiences with marital conflict in early childhood. Furthermore, consistent with past model tests, emotional security was indicated as an explanatory mechanism for both internalizing and externalizing problems.

Specifically, in support of EST, the results suggested that emotional insecurity was a mediating or intervening process linking marital discord to subsequent adjustment problems. Notably, emotional security was assessed as a robust latent construct based on multiple theoretically driven components (i.e., emotional reactivity, behavioral dysregulation, avoidance and involvement) (see Davies, Forman et al., 2002). Moreover, adding to the rigor of hypothesis testing, interparental conflict predicted children's emotional insecurity at T2, controlling for emotional insecurity at T1. Emotional insecurity, in turn, related to both internalizing and externalizing problems in adolescence at T3, even when testing predictions of both of these outcomes in the same model and controlling for these adjustment problem indicators at T2.

The advancement of understanding EST as an explanatory model is a timely goal, as decades of attachment (Cassidy & Shaver, 2008) and marital conflict (Cummings & Davies, 2010) research strongly support the promise of emotional security notions as major explanatory mechanisms for child development (Waters & Cummings, 2000). Notably, emotional security theory has also been advanced recently by (a) increasing development and articulation of the original Davies and Cummings (1994) theoretical model (e.g., Cummings & Davies, 1996; Cummings & Davies, 2010; Davies, Harold, et al., 2002; Davies & Sturge-Apple, 2007), (b) multiple directions in exploring and documenting empirical support for the model (Cummings & Davies, 2010), and (c) systematic tests against the predictions of other theories (e.g., Davies, Harold et al., 2002).

The findings support the significance of early experiential histories with interparental conflict to children's later functioning. Thus, the results support the possibility that prior psychological organizations and experiences may continue to have influence over long periods of development, even in the context of likely changes in forms of functioning appropriate to subsequent developmental periods and changes in family circumstances. A complementary interpretation is that early experiences with family adversity prime children to be sensitive and vigilant to bouts of interparental conflict throughout childhood and adolescence. These results are also suggestive of possibly long-term cascade effects reflecting family systems processes that may further solidify these trajectories (Masten & Cicchetti, 2010). For example, the many transactions and interactions over time between interparental conflict, child emotional insecurity in the context of marital conflict (e.g., behavioral dysregulation, intervention in conflicts) and child adjustment problems (e.g., externalizing and internalizing behavior problems) may serve both to solidify these interrelations and also result in more widespread difficulty, such as problems of social competency (Kouros, Cummings, & Davies, 2010). Thus, many avenues for future research towards further unraveling these relations are indicated.

There are strong bases for expecting that exposure to interparental conflict assumes particular significance in the lives of teens (Davies & Windle, 1997; 2001), possibly contributing to the persisting relations between marital conflict, emotional insecurity, and child adjustment. The challenge of successfully resolving numerous stage salient tasks and marked increases in normative stressors (e.g., puberty, school transitions) in the context of living with distressed parents may further accentuate the risk associated with interparental discord (Gest, Reed, & Masten, 1999; Windle & Davies, 1999). Notably, evidence suggests that individuals experience greater internal and external turmoil and stress during adolescence than earlier or later portions of the life span (Cicchetti & Rogosch, 2002). However, no findings for child gender differences emerged, in this instance in the context of tests across the transition from childhood to adolescence. These findings are consistent with a broader literature indicating no or weak moderating effects, as a function of child gender for the effects of marital conflict on children, including tests of meditational pathways involving emotional insecurity. However, many questions remain, for example, gender differences may become more apparent with testing of more complex or fine-grained prospective models (Cummings & Davies, 2010).

The findings supported a mediated or intervening variable model. That is, an indirect "chain of events" involving emotional security was supported, that is, marital discord was longitudinally associated with adolescent adjustment via emotional insecurity (see also Grych et al., 2003; Harold et al., 1997; 2004). In this regard, from a conceptual perspective, the demonstration of a direct link between interparental discord and adolescent adjustment is neither a sufficient or necessary condition for testing process-oriented models, which posits, in the instance of EST, that marital conflict ultimately undermines adolescent adjustment by setting in motion emotional insecurity processes in the child (Emery, Fincham, & Cummings, 1992). In other words, interparental conflict is no less important as a predictor of adjustment problems in an indirect chain of events, because without the precipitating event of marital conflict the unfolding series of pathogenic processes would not have eventuated. Moreover, from a statistical perspective, there is an emerging consensus that mediated effects can exist even without a statistically significant relation between the independent and dependent variables (MacKinnon, 2008), so that a rigid requirement for the first step of the Baron and Kenny guidelines can be dropped (Shrout & Bolger, 2002). Even Kenny has asserted (on his web site as of 6-27-11) "most analysts believe that the essential steps in establishing mediation are steps 2 and 3." Relatedly, Rucker et al. (2011) have stated that "the requirement for a significant total X -> Y effect prior to examining indirect effects should be abandoned (page 368)" and "attention in mediation analysis should be shifted

towards assessing the magnitude and significance of indirect effects (page 359)". In summary, a mediated or intervening model was supported for both externalizing and internalizing problems.

The findings further support relations between emotional insecurity and adjustment problems (Cummings & Davies, 2010), extending demonstration of relations across a longer time period than in past research and across developmental periods of childhood and adolescence. Activation of the emotional security system may serve the function of fostering the attainment of physical and psychological safety in the family in the short-term. However, heightened emotional and behavioral reactivity associated with emotional insecurity over time is hypothesized to increase children's vulnerability to psychological symptoms. For example, although expending resources to intervene or avoid conflicts may be an effective way of preserving security by increasing the emotional or physical distance from marital disputes, enmeshment in parents' difficulties increases psychological risk and burden (Sturge-Apple, Davies, & Cummings, 2010). Moreover, prolonged operation of the emotional security system, including vigilance, preoccupation and distress associated with emotional insecurity, requires considerable expenditure of psychobiological resources (e.g., Davies, Sturge-Apple, Cicchetti, & Cummings, 2008), thereby depleting children of resources necessary to cope with and resolve other challenges and goals. As another example, children may rely on insecure representations and response tendencies from exposure to marital discord as maladaptive guides for responding in other challenging contexts (e.g., peers, school), with these response tendencies crystallizing into forms of maladjustment that persist over time and setting (e.g. Bascoe, Davies, Sturge-Apple, & Cummings, 2009; Davies, Woitach, Winter, & Cummings, 2008).

The findings of this study should be interpreted, recognizing certain limitations. First, although our aim was to examine a theoretically derived model of the impact of marital conflict 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 interparental conflict (Jenkins, Simpson, Dunn, Rasbash, & O'Connor, 2005; Schermerhorn, Cummings, DeCarlo, & Davies, 2007). Second, processes documented in this study were based on community samples, and findings may not be generalizeable to clinical samples, family facing substantial hardships, or more racially diverse samples. Third, although two of the three indices of model fit indicated good model fit for the Figure 1 theoretical model test, one index was only marginally adequate, which should be considered in weighing conclusions drawn from the results. Testing other theoretical models would be a valuable direction for future research. In addition, future research should explore whether other family context factors may moderate results, for example, whether having a sibling is a protective factor for the impact of marital conflict on child adjustment.

Despite these limitations, this multi-method and multi-reporter, prospective study importantly advances investigations of pathways between interparental conflict, children's emotional security and child adjustment across a substantial age period. In particular, support for emotional security theory as an explanatory model for the lasting effects of marital conflict is furthered, also advancing the understanding process-oriented relations in the significant area of research on family processes and child development and adjustment.

Acknowledgments

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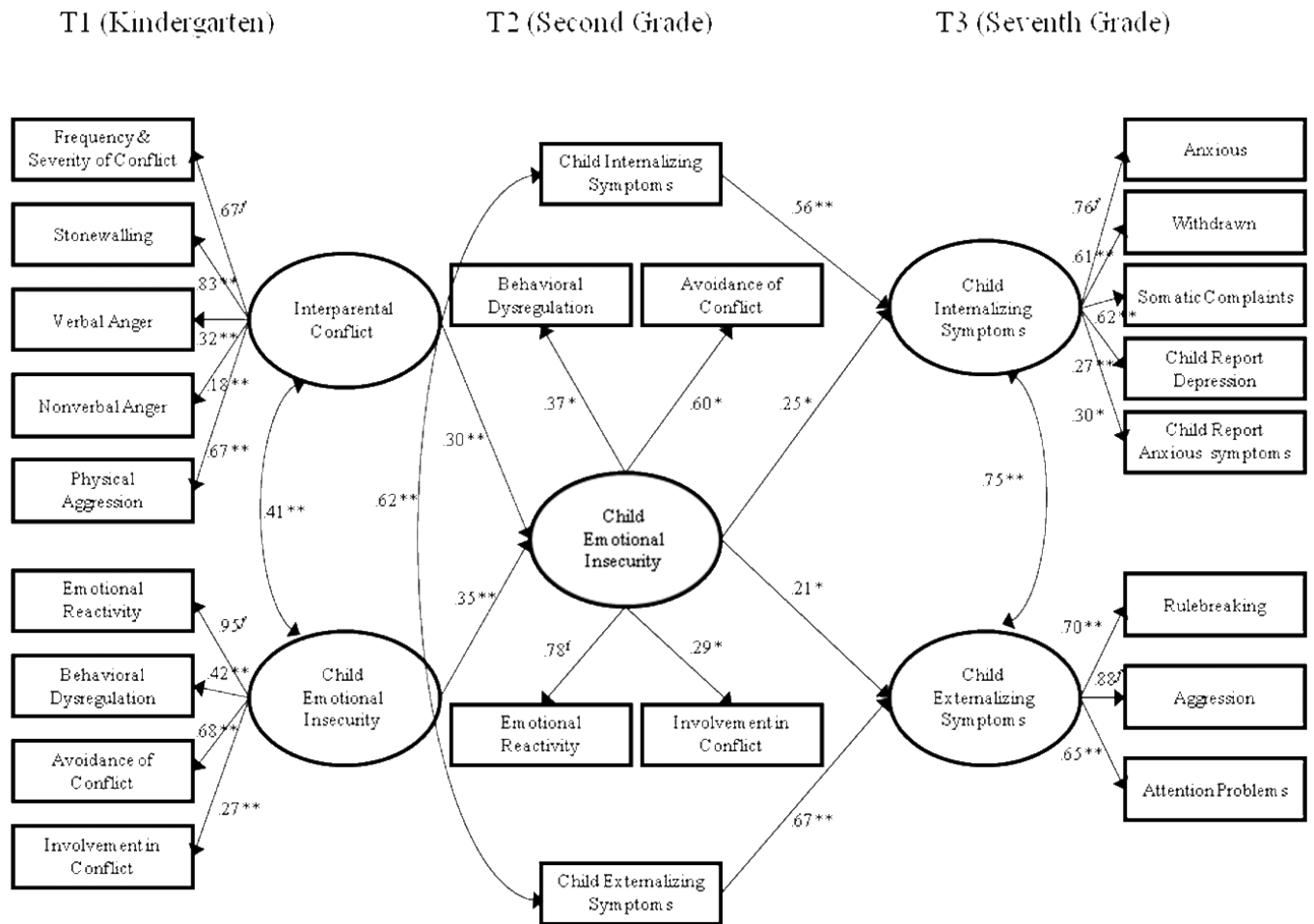
Figure 1.
Model examining children's emotional insecurity in the context of interparental conflict and children's maladjustment controlling for prior level of children's emotional insecurity and maladjustment. Standardized path coefficients are presented; *f* superscripts indicate fixed factor loadings for model estimation. *$p < .05$. **$p < .01$.

Table 1

Descriptive Statistics and Intercorrelations for Indicator Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
T1 Marital Conflict																			
1. Frequency/Severity	8.15	2.78	-																
2. Stonewalling	13.17	4.50	.56**	-															
3. Physical Aggress	3.49	4.06	.44**	.55**	-														
4. Nonverbal Anger	1.78	2.28	.17*	.13*	.06	-													
5. Verbal Anger	2.95	10.17	.15*	.24**	.24**	.17*	-												
T2 Emotional insecurity																			
6. Emotion Reactivity	13.48	2.72	.36**	.32**	.26**	.13	.05	-											
7. Behavioral Dysreg.	6.41	1.89	.16*	.15*	.13	-.12	-.02	.29***	-										
8. Avoidance	12.95	3.53	.14*	.15*	.23**	.20**	-.03	.56***	.22**	-									
9. Involvement	22.78	6.35	.09	.19**	.21**	-.03	.08	.28***	.33***	.00	-								
T3 Child Maladjustment																			
10. Withdrawn	3.17	3.17	.02	.10	.04	.09	.07	.30***	.07	.34***	.07	-							
11. Anxious/Depress	4.94	4.17	.11	-.03	.06	.04	-.03	.24**	.27**	.19*	.21*	.48***	-						
12. Somatic	2.63	2.71	.12	.19*	.19*	.00	.08	.32***	.29***	.15	.31	.28***	.48***	-					
13. Anxiety-CR	8.72	5.98	-.07	.03	.05	.01	-.04	.14	-.07	.11	-.01	.14	.25**	.20*	-				
14. Depress-CR	30.01	8.57	-.06	-.06	.06	.04	.01	.14	.00	.09	-.01	.14	.21**	.22**	.64	-			
15. Aggressive	8.40	8.34	.13	.18*	.16*	.06	-.01	.42***	.46***	.23**	.27**	.37***	.50***	.48***	.20*	.18*	-		
16. Rule Breaking	2.40	3.00	.07	.20*	.28**	.06	.02	.31***	.28***	.14	.25**	.36***	.37***	.41***	.15	.09	.74***	-	
17. Attention Problems	4.28	4.15	.00	-.01	.10	.10	-.04	.30***	.19*	.19*	.20*	.34***	.40***	.30***	.19*	.15	.57***	.55***	-

Note. *N*s range from 149 to 227 due to missing data.

*
  $p < .05$.

**
  $p < .01$.

***
  $p < .001$.