

Mom and Dad Are At It Again: Adolescent Perceptions of Marital Conflict and Adolescent Psychological Distress

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In these two studies, the authors used children's perceptions of family relationships to examine simultaneously direct and indirect links between marital conflict and child adjustment. With data pertaining to 146 sixth and seventh graders, Study 1 supported direct and indirect effects of perceptions of marital conflict on internalizing behaviors, and indirect effects for externalizing behaviors. In Study 2, data analyzed from 451 families showed indirect effects of marital conflict and parent-to-child hostility, through adolescent perceptions of such behavior, on both current distress and distress 12 months later in 3 of 4 models estimated. Direct and indirect effects were found for boys' concurrent internalizing behavior. Implications and limitations of both studies are discussed to address the need for a more sophisticated theoretical approach to examine why an association exists between marital conflict and child adjustment.

Marital discord has been associated with a number of indexes of child and adolescent maladjustment, including increased depressive symptomatology, aggression, conduct disorders, and anxiety (for reviews, see Cummings & Davies, 1994; Emery, 1988; Fincham & Osborne, 1993; Grych & Fincham, 1990; Jouriles, Farris, & McDonald, 1991; Reid & Crisafulli, 1990). The mechanisms hypothesized to give rise to this association can be divided into those involving direct effects of marital conflict on child adjustment and those involving indirect effects that are mediated by changes in parent-child relations. Differing views on the mechanisms that account for the marital conflict-child adjustment link are understandable given the paucity of systematic research on this topic, particularly of studies that examine simultaneously more than one mechanism. Two

studies were therefore conducted that examined simultaneously direct and indirect links between marital conflict and child adjustment, incorporated children's perceptions of family relationships in examining such links, and tested explicit causal models concerning the relation between marital conflict and child adjustment using both cross-sectional and longitudinal research designs.

Association Between Marital Conflict and Child Adjustment: Direct and Indirect Effects

According to Fauber and Long (1991), disruptions in the parent-child relationship are critical for understanding the marital conflict-child adjustment relation because "it is at the site of parenting practices that conflict has its effect on children" (p. 816). The authors therefore view marital conflict as a contextual factor that influences parenting and not as a factor that has a direct impact on children.

In support of this viewpoint, there is a robust association between marital conflict and parent-child relations (for a review, see Erel & Burman, 1995). For example, Davies and Cummings (1994) found that all 13 studies they examined showed that marital conflict influenced adversely the emotional tone of the parent-child relationship, and that 3 of 5 available studies documented an association between marital conflict and child management styles. In view of such evidence, it would be surprising if parenting did not play an important role in understanding the impact of marital conflict on children. However, if marital conflict is only important for understanding parenting, then the association between marital conflict and child adjustment should disappear once problems in the parent-child relationship have been statistically controlled. Fauber, Forehand, Thomas, and Wierson (1990) provided some such evidence by showing that the association between marital conflict and child

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internalizing problems was reduced substantially when common variance associated with parental rejection and guilt induction was statistically removed. Unfortunately, these data are limited by the use of a small sample that required an unusual implementation of structural equation modeling. With data that we also used in the present analyses, more convincing evidence for the mediational role of parenting has been provided in a series of reports by Conger and his colleagues (Conger et al., 1992, 1993; Conger, Ge, Elder, Lorenz, & Simons, 1994).

Notwithstanding such evidence, Emery, Fincham, and Cummings (1992) have argued that family problems cannot be reduced to parenting problems. They observed that overt interparental conflict to which children are exposed has a greater impact on child adjustment than covert conflict to which children are not exposed, and that such differences would be unlikely if all effects were mediated through parent-child relations. In a similar vein, children's perceptions of interparental conflict are consistently related to their adjustment (Cummings, Davies, & Simpson, 1994; Grych, Seid, & Fincham, 1992), an association that is also difficult to account for in terms of parent-child relations. Finally, a substantial body of experimental, analogue studies show that exposure to interadult conflict produces child distress, and numerous correlational studies document both direct and indirect effects of interparental conflict on children that do not involve parenting (see Cummings & Davies, 1994).

Although debate over direct versus indirect effects of marital conflict on child adjustment has served a useful heuristic function, Fincham, Grych, and Osborne (1994) argued that it is less productive to focus on the question of whether marital conflict or parent-child relations lead to child adjustment problems than to understand how marital conflict and parent-child relations are mutually related to child adjustment. If, as the available evidence suggests, marital conflict exerts both direct and indirect effects on children's adjustment, it is unlikely that these two effects occur independently of each other. However, researchers in most studies have either examined one effect in the absence of the other or, when examining both effects together in the same study, have tended to compute the magnitude of the effects independently. Such practices are likely to yield an incomplete understanding of the marital conflict-child adjustment association. In the present studies, we therefore have examined simultaneously direct and indirect effects of marital conflict on adolescent distress.

Parents' Behavior Versus Children's Perceptions: Levels of Analysis

Grych and Fincham (1990) have suggested that examining children's exposure to marital conflict is insufficient for understanding its impact on them. They argued that because children actively interpret and respond to their environment, it is critical to examine children's appraisals of interparental conflict; this viewpoint has also been highlighted in theoretical analyses of the effects of stressful events on children (e.g., Compas, 1987; Rutter, 1983). Consistent with this viewpoint are recent analogue studies showing that children perceive standardized conflicts differently and that their perceptions are linked to their emotional responses to the conflict (e.g., Cummings et al., 1994; Grych & Fincham, 1993; O'Brien, Margolin, John, & Krueger,

1991). Thus, for example, siblings exposed to the same conflict may respond differently because of their appraisals of the conflict.

Logic that points to investigation of children's appraisals of marital conflict also supports investigation of their appraisals of parent-child relations. That is, children's appraisals of their relationship with their parents may predict child adjustment even when "objective" reports of parent-child relations are taken into account. It is therefore important to distinguish children's perceptions of interparental conflict and children's perceptions of parent-child relations from nonchild reports of marital conflict and parent-child relations.

These different levels of analysis may account, in part, for the relative lack of integration of research examining direct versus indirect effects. Those interested in indirect effects have primarily focused on the behavior and perceptions of parents toward their children as a response to spousal hostility. They have observed that marital conflict creates a situation in which parents become increasingly involved with their own problems, depleting themselves of the emotional resources necessary to effectively monitor their children (Patterson & Southamer-Loeber, 1984), causing them to emotionally withdraw from their children (Dickstein & Parke, 1988), leading them to resent children reminiscent of a spouse (O'Leary, 1984) and leading them to treat children in an angry or hostile manner (Engfer, 1988; Jouriles, Murphy, & O'Leary, 1989; Kerig, Cowan, & Cowan, 1993).

In contrast, those interested in direct effects of conflict recently have emphasized children's perceptions of and reactions to specific aspects of such conflict in the belief that it is not interparental conflict *per se* but children's interpretation of interparental conflict that determines whether the conflict is harmful to them. These investigators have paid some attention to the behavior of parents by documenting that only certain sorts of conflict upset children, specifically conflict that is intense, frequent, and unresolved (e.g., Cummings & Cummings, 1988; Cummings, Vogel, Cummings, & El-Sheikh, 1989; Grych & Fincham, 1993). Although such conflict dimensions are also likely to affect parents adversely, there do not appear to be any studies on the dimensions of conflict most likely to influence parenting.

Finally, children's appraisals of marital conflict and of parent-child relationships both involve evaluations of relationships in the family that may simultaneously contribute to children's "working models" of relationships. Although bidirectional causation is possible, it seems most likely that perceptions of marital conflict will have an impact on perceptions of parent-child relations. Specifically, children's perceptions of interparental conflict may adversely affect children's perceptions of parent-child relations. As Cummings and Davies (1994) suggested, children who witness hostile exchanges between their parents may feel less secure in their own relationship with their parents. Furthermore, children who have witnessed interparental hostility may interpret parent-child conflict as being more hostile or threatening than children who have not witnessed such conflict. From this perspective, children's perceptions of marital conflict may function as a context in which parent-child relations are interpreted (Osborne & Fincham, 1996).

From Snapshots to Movies: Longitudinal Research

Although much of the discussion of the association between marital conflict and child adjustment is couched in causal language, attempts to examine causal relations are rare in empirical investigations. Causal modeling has been underutilized in cross-sectional studies, and we therefore utilized such modeling in our first study. Collecting data over time improves dramatically the confidence with which one can infer causation, because causes are acknowledged to precede effects. However, there are only a small amount of longitudinal data on the relation between marital conflict and child adjustment. Fincham et al. (1994) reported that, over a 12-month period, boys' appraisals of interparental conflict predicted their adjustment but not vice versa; specifically, increases in the level of frequent, intense, and poorly resolved conflict related to higher levels of teacher-reported externalizing behavior, whereas appraisals of threat and self-blame for the conflict predicted internalizing behaviors. Similarly, Katz and Gottman (1993) found that mutual hostility expressed between spouses during a laboratory task predicted teacher ratings of externalizing problems 3 years later. Unfortunately, these data do not speak to the processes that underlie such a causal relation. Our second study therefore included examination of direct and indirect effects of marital conflict over time.

Overview

Two studies were conducted in an attempt to provide a more thorough investigation of the processes that may account for disturbances in adolescent psychological well-being. In Study 1, we used adolescents' perceptions of interparental conflict and parent-child relations to predict concurrent adolescent distress. Specifically, we examined whether direct and indirect effects are needed to account for the impact of perceptions of marital conflict by testing whether a model incorporating both effects fit the data better than one that excluded the direct impact of conflict. Study 2 built upon the first study by including a longitudinal component (allowing for stronger causal inferences), non-adolescent ratings of marital conflict and parent-child relations (allowing examination of the extent to which adolescent appraisals were consistent with "objective" criteria), and a larger sample (allowing the replication of Study 1 findings within gender). Finally, both studies examined whether marital conflict plays a differential role in accounting for disturbances in externalizing versus internalizing behaviors among adolescents.

Study 1

Adolescents' perceptions of parent-child relations, adolescents' perceptions of interparental conflict, and adolescent distress (as assessed by adolescent and nonadolescent raters) were integrated into a single theoretical model. We used structural equation modeling to estimate the hypothesized model because it allows for the simultaneous estimation of all unknown parameters, thus providing an estimate of each structural coefficient based on the level of explained and unexplained variance available in the model. Second, by comparing a series of hierarchically nested models, structural equation modeling allowed an explicit test of the hypothesized model (see Figure 1) when compared with possible competing models.

Method

Sample

Participants were 6th and 7th graders (mean age = 154 months; $SD = 7$) from four schools in middle-class midwestern communities. Two of the schools were located in the countryside, but within a 15 mile (24.2 km) commute to the small town (population approximately 100,000) in which the remaining schools were located. Although the study focused on children living with both biological parents, data were collected from all students who received parental permission to complete the questionnaires. Thus, data were collected from 319 children. After applying the inclusion criterion regarding residence with both biological parents and adjusting for children with missing data, the sample consisted of 146 children (72 girls, 74 boys) and was approximately 80% White and 20% African American (our sample therefore reflected the composition of these schools, as there was greater than a 90% participation rate).

Procedures

Data were collected at school during the regular school day. Children were told they were participating in a study of how children think and feel, and that there were no right or wrong answers. Afterwards, children were thanked for their participation and debriefed. In addition to the children's data, teachers and peers provided data on the children. Teachers were paid a \$10 honorarium for completing the forms for all students in their class.

Measures

Marital conflict. We used the Children's Perception of Interparental Conflict scale (CPIC; Grych et al., 1992) to assess marital conflict. This

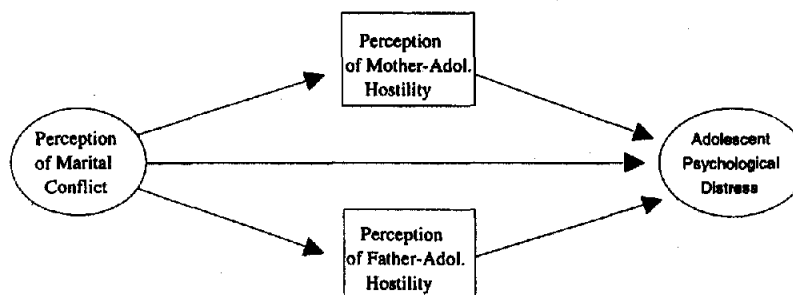


Figure 1. The conceptual model (Study 1). Adol. = adolescent.

self-report measure contains three subscales: Conflict Properties (the extent to which conflict is frequent, intense, and unresolved); Threat (how threatened children feel, and their perceived ability to cope with witnessing conflict); and Content (the extent to which children perceive the conflict to be about themselves and blame themselves for it). The three CPIC subscales have been found to have good internal consistency (α range = from .78 to .90) and test-retest reliability, and scores on them have been found to be related to parental reports of marital conflict.

Parent-child relations. We examined aspects of parent-child relations thought to be most vulnerable to the effects of interparental conflict. Because interparental conflict may cause parents to withdraw emotionally from the parent-child relationship, perceptions of rejection and lack of child centeredness were examined. At the same time, anger aroused by marital conflict may spill over into the parent-child relationship, producing not only perceptions of rejection, but also perceptions of conflictual parent-child relationships. Thus, child perceptions of parent-child conflict were examined. Children made separate ratings of parent-child relations for mothers and for fathers on three scales.

The revised Child Report of Parental Behavior Inventory (CRPBI; Margolies & Weintraub, 1977) is a 56-item measure in which children rate hypothetical instances of parental behavior. Two subscales of the CRPBI were used. The first focuses on children's perceptions of parental rejection versus parental acceptance (Acceptance/Rejection subscale; e.g., "seems to see my good points more than my faults"), and the second indexes whether children perceive themselves to be central to their parents' life (e.g., parent "spends almost all of his or her free time with the children"). The CRPBI shows good test-retest reliability for ratings of both parents over 1-week and 5-week intervals ($r = .91$, 1 week; $r = .79$, 5 weeks; Margolies & Weintraub, 1977).

The Conflict Behavior Questionnaire (CBQ; Prinz, Foster, Kent, & O'Leary, 1979; Robin & Foster, 1984) measures conflict and negative communication in parent-child relations (e.g., "In general, I don't think we get along very well"). The 73-item version has been shown to have good internal consistency ($\alpha = .90$; Prinz et al., 1979) and reasonable test-retest reliability (correlations range from .37 to .85), as well as discriminant or construct validity (Robin & Foster, 1984). The shortened 20-item version used in this study has been shown to correlate highly ($r = .96$) with scores from the longer version (Robin & Foster, 1989).

The third measure of parent-child relations consisted of the Verbal Aggression subscale of the parent-child version of the Conflict Tactics Scale (CTS; Schumm & Bagarozzi, 1989; Strauss, 1979). Verbal aggression encompasses both verbal and nonverbal acts that symbolically hurt or threaten to hurt the other person (e.g., "swears at me; puts me down or insults me"). In this study, the subscale was modified to expand the number of items (from 6 to 9) and to make the wording more comprehensible to this age group (items added were "sounds angry but doesn't yell;" "threatens me;" and "gives me the silent treatment"). The first of these items was discarded because of low item-total correlation, leaving an 8-item scale with good internal reliability ($\alpha = .85$ for ratings of mothers and .83 for ratings of fathers).

Child adjustment. Two broad indices of child adjustment, externalizing and internalizing problems, were assessed. Data gathered from peers, teachers, and the students themselves were used to assess externalizing problems. The peer data comprised responses to two questions: "Who starts fights?" and "Who is bossy?" A list of each student in the class was provided, and children nominated classmates by circling all applicable names. A participant's peer nomination raw score for each of these behaviors consisted of the number of classmates who nominated that child for a particular behavior. To control for class size, a z score was calculated separately for each classroom. Z scores were also calculated separately for boys and for girls, because the typical level of externalizing behavior varies by gender (Achenbach, 1991a).

We obtained teacher ratings of externalizing problems with the Aggression subscale of the Teacher's Report Form (Achenbach, 1991a)

of the Child Behavior Check List (CBCL; Achenbach, 1991b). The empirically derived 24-item Aggression subscale includes such items as "argues a lot," and "temper tantrums or hot temper." Self-reports of externalizing problems were obtained with the Aggression subscale of the Youth Self Report (YSR; Achenbach, 1991c) of the CBCL. The YSR contains items parallel to those on the teacher checklist.

Because children tend to be the most reliable reporters of their own internalizing disorders (Achenbach, 1991b), two self-report scales were used to assess internalizing problems. The Children's Depression Inventory (CDI; Kovacs, 1981) is a widely used measure of depressive symptoms. One item regarding suicidal thoughts was omitted. Because in normal samples the CDI correlates highly with other measures of internalizing problems (e.g., anxiety), it may be best considered a broad index of dysphoria rather than of depression per se.

The second measure of internalizing problems was the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978). This 37-item measure assesses children's trait anxiety. The RCMAS has demonstrated concurrent and construct validity (Reynolds, 1980; Reynolds & Richmond, 1979) as well as adequate internal reliability ($\alpha = .83$; Reynolds & Richmond, 1979).

Results and Discussion

Preliminary analyses showed that none of the variables of interest differed significantly by age. Therefore, age was not used in any of the analyses described below. Multiple measures of each construct were obtained, and, for indices of adjustment, information was gathered from multiple sources. Owing to the number of parameters that would need to be estimated relative to the sample size (see Bollen, 1989), it was not possible to derive latent variables for all of the constructs investigated (see Figure 1) or to conduct subgroup comparisons based on gender. Where appropriate, we conducted principal components analysis to derive indices for use in model testing.

Principle Components Analysis

Children's Perceptions of Interparental Conflict. Principle components analysis revealed three factors that conformed to those found by Grych et al. (1992); namely, Conflict Properties, Threat, and Content. Total scores for each of the three subscales were used as separate indicators of a latent variable of children's perceptions of interparental conflict (coded so that higher scores represented greater or more distressing perceptions of interparental conflict).

Adolescent perception's of parental hostility. Principal components analysis performed separately for mother and father ratings revealed that all the measures loaded primarily on one principal component (eigenvalue for mother-child relationship measures = 3.04; eigenvalue for father-child measures = 2.74). An index was therefore formed for mother-adolescent hostility and for father-adolescent hostility comprising, in each case, the average of the four scales (CRPBI-Acceptance/Rejection subscale; CTS-modified Verbal Aggression subscale; CBQ; items were coded so that high scores indicated negative parent-child interactions).

Child adjustment. All variables pertaining to child adjustment were standardized separately for boys and girls. These indices were then combined and used to form latent variables representing measures of adolescent internalizing and externalizing problems.

Table 1
Intercorrelations for All Indicators of Constructs

Construct indicator	1	2	3	4	5	6	7	8	9	10
1. Perception of conflict (properties)	—									
2. Perception of conflict (threat)	.62**	—								
3. Perception of conflict (content)	.41**	.39**	—							
4. Adol. internalizing (CDI)	.40**	.46**	.31**	—						
5. Adol. internalizing (RCMAS)	.35**	.47*	.26**	.74**	—					
6. Adol. externalizing (self-rpt)	.24**	.26**	.35*	.47**	.47**	—				
7. Adol. externalizing (teacher rpt)	.25**	.19*	.05	.25**	-.01	.26**	—			
8. Adol. externalizing (peer rpt)	.16*	.14*	.12	.14*	.10	.32**	.49**	—		
9. Adol. perception of mother hostility	.44**	.43**	.32**	.61**	.42**	.50**	.32**	.13	—	
10. Adol. perception of father hostility	.54**	.45**	.27**	.59**	.45**	.39**	.31**	.31**	.61**	—

Note. Internalizing and externalizing indicators ($N = 146$). CDI = Children's Depression Inventory; RCMAS = Revised Children's Manifest Anxiety Scale; Adol = adolescent; Rpt = report.

* $p < .05$. ** $p < .01$.

Correlational Analyses

Table 1 contains the intercorrelations for all indicators of observed and latent constructs we used in testing the theoretical model. In general, the correlations are consistent with the hypothesized relationships in the model (e.g., perception of conflict properties and adolescent self-report of internalizing, $r = .40$, $p < .01$, CDI; $r = .35$, $p < .01$, RCMAS).

Structural Equation Modeling

We used structural equation modeling (LISREL 7.20; Jöreskog & Sörbom, 1989) based on maximum likelihood estimation to examine the proposed model. Separate models were estimated for adolescent internalizing and adolescent externalizing disorders.

Because these analyses were motivated by the assumption that a bivariate relationship exists between adolescents' perceptions of marital conflict and adolescent adjustment, we tested this assumption for both measures of adolescent adjustment. A strong zero-order association was found in each case. Results for analysis of the theoretical model containing internalizing symptoms and externalizing behaviors, respectively, are discussed separately. In each case, the full model is discussed first, followed by tests of hierarchically nested models.

Internalizing symptoms. The theoretical model provides a good fit to the data, as indicated by the chi-square statistic, $\chi^2(10, N = 146) = 16.81$, goodness-of-fit indices (GFI = .969; adjusted goodness-of-fit index [AGFI] = .913), and the root mean square residual (RMSR = .037). A significant association exists between adolescents' perceptions of marital conflict and adolescents' perceptions of mother-child ($b = .558$, $p < .05$) and father-child ($b = .624$, $p < .01$) relations. When perceptions of mother-child and father-child relations are included in the model, the association between perceptions of marital conflict and internalizing symptoms is substantially reduced. However, the direct link between perceptions of marital conflict and internalizing symptoms remains significant ($b = .198$, $p < .05$; see Figure 2, top).

We then used chi-square difference tests to compare nested (hierarchically related) models, to the "full" conceptual model.

These tests, detailed in Table 2, demonstrate that the hypothesized model, which contains both direct and indirect paths, fits the data better than any of the nested models. Of particular interest, the hypothesized model fits the data significantly better than a model with only a direct path between marital conflict and adolescent internalizing (baseline), or a model that contains indirect paths from marital conflict to adolescent internalizing, linked by adolescent perceptions of mother to child hostility (Model 2a) and father to child hostility (Model 2b).

Externalizing symptoms. The theoretical model fits the data reasonably well, as indicated by chi-square value, $\chi^2(16, N = 146) = 47.50$, goodness-of-fit indices (GFI = .925; AGFI = .850), and the RMSR (.066). A significant association exists between adolescents' perceptions of marital conflict and adolescents' perceptions of mother-child ($b = .535$, $p < .01$) and father-child ($b = .625$, $p < .01$) relations. When perceptions of mother-child and father-child relations are included in the model, the association between perceptions of marital conflict and adolescent internalizing is no longer significant (see Figure 2, Bottom).

We used chi-square difference tests again to compare nested models to the "full" conceptual model (see Table 2). These comparisons yielded the same pattern as that observed for internalizing symptoms. The hypothesized model provides a better fit than a direct effects only model, or a model containing indirect links through mother-child hostility or father-child hostility.

Although a perception of mother-child and father-child hostility indirect effects model and a perception of marital conflict direct effects only model are not hierarchically related and hence cannot be compared directly (see Bollen, 1989), it is important to note that separate analyses showed that a model that omits the direct path between perceptions of conflict and adolescent externalizing is not significantly different from a model that includes both direct and indirect paths, $\Delta\chi^2 = 2.82$, $\Delta df = 1$. In contrast, when internalizing behaviors are used as the outcome measure, there is a significant improvement in the fit of the model when both direct and indirect effects are estimated when compared with an indirect effects only model, $\Delta\chi^2 = 4.12$, $\Delta df = 1$.

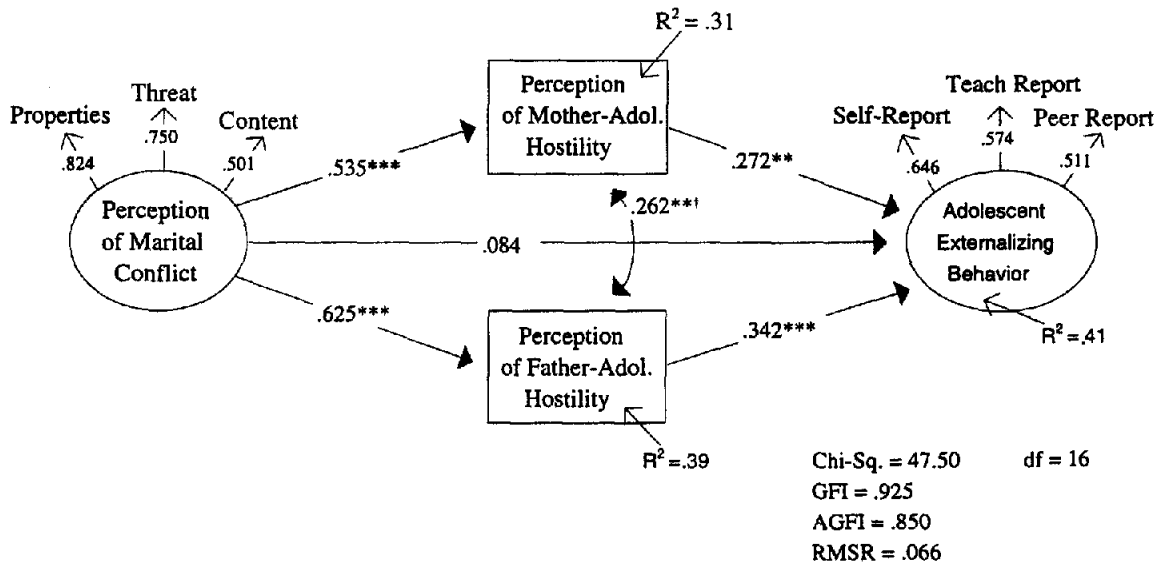
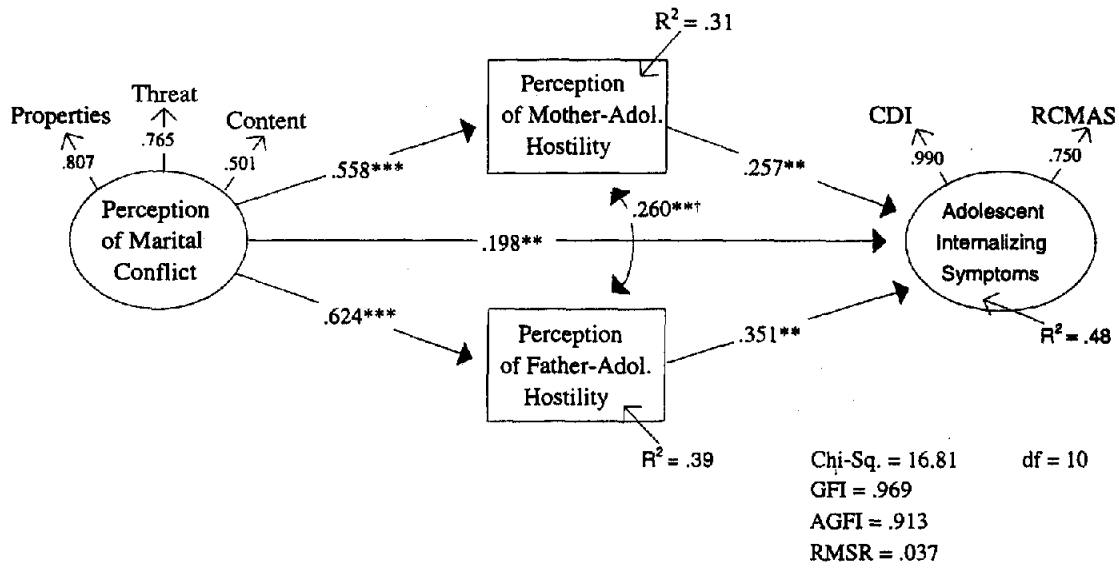


Figure 2. Top: Adolescent (Adol.) internalizing; Bottom: Adolescent externalizing. Maximum likelihood estimation of the conceptual model for internalizing symptoms and externalizing symptoms for the combined sample of boys and girls. * $p < .10$. ** $p < .05$. *** $p < .01$. CDI = Children's Depression Inventory; RCMAs = Revised Children's Manifest Anxiety Scale; GFI = goodness-of-fit indices; AGFI = adjusted goodness-of-fit indices; RMSR = root mean square residuals; † = residual correlation between constructs.

Conclusion

These results support the hypothesis that perceptions of marital conflict have both direct and indirect effects on adolescent internalizing symptoms. For externalizing symptoms, however,

no significant direct effect was found between perceptions of marital conflict and adolescent adjustment when perceptions of mother to child and father to child hostility were included in the model. Failure to obtain a significant direct association between perceptions of marital conflict and adolescent externalizing

Table 2
 Comparison of Hierarchically Nested Models for the Total Sample
 of Adolescents in Study 1 ($N = 140$)

Estimated Model	Comparison of hierarchically nested models					
	Internalizing			Externalizing		
	χ^2	df	$\Delta\chi^2$	χ^2	df	$\Delta\chi^2$
Model 1 (null-direct only)	124.3	14	—	125.9	20	—
Model 2a (indirect-mother)	88.9	12	43.3 ^a	104.5	18	21.4 ^a
Model 2b (indirect-father)	78.5	12	45.7 ^a	94.2	18	31.6 ^a
Model 3						
Full model (vs. Model 2a)	16.8	10	64.2 ^a	47.5	16	57.0 ^a
(vs. Model 2b)			61.7 ^a			46.7 ^a

Note. Two χ^2 statistics are noted for the final theoretical model. These reflect the $\Delta\chi^2$ from each preceding indirect effects model. Dashes refer to a number that is not relevant; i.e., there is zero change in chi square for Model 1.

^aStatistically significant change in chi-square ($\Delta\chi^2/\Delta df$).

symptoms may be due to the use of nonadolescent ratings of externalizing symptoms and thus reflect difference in the measurement of internalizing and externalizing symptoms. Alternately, the difference in findings for the two forms of behavior may also support the hypothesis that self-report is the best source of information when assessing internalized states.

This possibility of the self-report hypothesis is supported by an inspection of the zero-order correlations between each indicator of each respective latent construct, as there is an interesting pattern among the magnitude of specific reporter–dimension bivariate associations (see Table 1). For example, adolescent report of conflict properties correlated at the same level with teacher report and adolescent report of externalizing symptoms ($r = .25$ and $.24$, respectively). When perceived threat was the dimension of conflict, there was again consistency in the level of significance obtained for correlations with teacher and self-reports of externalizing behavior (even considering the drop in magnitude from self-to-teacher reports). Peer-reported data also correlated significantly with both perceptions of conflict properties and threat. Only in the case of the perception of conflict content was a significant correlation obtained for self-reported externalizing symptoms and not for teacher- and peer-reported symptoms.

Once again, it is reasonable to argue that the best reporter of interparental conflict for understanding its impact on the child is the child himself or herself. Also, separate analyses demonstrated a significant bivariate association between latent measures of adolescent perceptions of marital conflict and internalizing and externalizing symptoms ($b = .630$, $p < .05$, and $b = .390$, $p < .05$, respectively) when perceptions of parent to adolescent hostility are excluded from the analyses. Although these coefficients differ in magnitude, this difference is not statistically significant. When adolescents' appraisals of both mother and father hostility are then entered as separate intervening constructs, these data suggest that adolescent perceptions of mother–child and father–child relations mediate the initial direct association between perceptions of marital conflict and adolescent externalizing symptoms only (Barron & Kenny, 1986).

It is interesting that the results of Study 1 are consistent with

the theoretical frameworks described by Grych and Fincham (1990), when internalizing symptomatology is used as the outcome measure, and Fauber and Long (1991), when externalizing behavior is used as the outcome measure. However, there are several methodological factors specific to the study that might account for these findings, and hence we conducted a second study.

Study 2

Study 2 builds on Study 1 by addressing several of its limitations. Because we used only adolescent perceptions of marital conflict and parent–child hostility in Study 1, it is unclear to what extent findings resulted from adolescent perceptions and to what extent they accurately measured parent behaviors. If nonadolescent ratings of marital conflict and parent–child hostility were to be included in the model, adolescent perceptions may no longer explain a significant amount of the variance between marital and parent–child relations and adolescent adjustment.

Reliance on self-report data may also reflect the operation of a negativity bias. As Watson and Pennebaker (1989) pointed out, research that relies heavily on self-reported measures of psychological well-being may suffer from the effects of *trait negative affectivity*, or the tendency to perceive the world in a less favorable way, be less satisfied, and have a more negative view of others. Thus, the presence of a negative affectivity bias may lead to high correlations among adolescent self-report measures and thus obscure the true associations among the constructs studied (Harold & Conger, in press). This limitation may be particularly relevant because the analyses conducted are cross-sectional, thereby increasing the potential for negative mood factors to amplify the magnitude of adolescent self-report associations.

Indeed, a second limitation of Study 1 is that it is cross-sectional. Although we can conclude that concurrent direct and indirect links exist between marital conflict and specific dimensions of adolescent distress, we cannot conclude with much confidence that these links are causal. Longitudinal analysis

of the mechanisms hypothesized in our theoretical model will improve the confidence with which we can make such causal inferences.

A third limitation of Study 1 is that the sample used was not sufficiently large to examine separate models for boys and girls. However, the association between marital conflict and adolescent distress may work differently for boys and girls. Finally, it could be argued that the measure of parent-adolescent hostility used is somewhat ambiguous, because it contains both measures of acceptance-rejection and measures of parent-child conflict. A clearer picture might emerge if a more specific conceptualization of parent-child hostility were used.

The present study addresses the above limitations. It elaborates on the mechanisms linking marital conflict and child outcome by including independently observed measures of marital conflict and parental hostility as exogenous constructs in the model. It also includes a longitudinal component and thereby allows for stronger causal inferences. Finally, in Study 2, we extend the findings of Study 1 by separating analyses of data for boys and girls and by using a combined measure of parent-child hostility rather than a composite of both parental acceptance and parent-child conflict. Separate analyses in Study 1 also showed that the indirect mechanism through parent-child hostility did not differ significantly by parent gender, therefore we estimated a latent measure of parent-child hostility where mother and father reports were used as indicators of the same construct.

In the proposed theoretical model, exogenous measures of conflict and parental hostility are hypothesized to influence adolescents' appraisals, which, in turn, are hypothesized to determine current and future adolescent distress (see Figure 3). That is, in this investigation, we tested a model that indirectly linked nonadolescent reports of marital conflict to concurrent levels of adolescent distress through the adolescent's perceptions of the frequency of marital conflict, and nonadolescent reports of parental hostility to both concurrent and longitudinal levels of adolescent adjustment through the adolescent's perceptions of parent-child hostility. By including nonadolescent reports of both marital conflict and parental hostility, the role of the adolescent perceptual measures can be examined to determine whether they account for changes in adolescent adjustment above and

beyond the direct effects of nonadolescent reports of parental behavior. In this study, we focused on the child's awareness of the frequency of marital conflict because exposure to conflict that is both frequent and intense is likely to be most highly associated with child problems (Grych & Fincham, 1990).

Method

Sample

Data for these analyses were derived from a longitudinal study of 451 rural families living in eight counties in north central Iowa, known as the Iowa Youth and Families Project (IYFP). Only families with both biological parents of the target adolescent living in the home were eligible for participation; 78% agreed to be interviewed. To be included in the sample, all four family members (husband, wife, seventh grader, sibling) had to agree to participate.

The seventh graders (215 boys, 236 girls) were from White, predominantly middle-class families. For the total sample, 34% of the families lived on farms, 12% in the countryside, but not on a farm, and the remainder (54%) in small towns. Median family income from all sources (e.g., earnings, net farm income, interest, etc.) for the first year of data collection (1989) was \$33,700 and ranged from a net loss to over \$100,000; 11% of the families fell below the poverty line. These families were slightly poorer than married couples in the United States as a whole, a group that had a median income of \$38,164 in 1988 (Bureau of the Census, 1991).

These findings involve data collected in 1990 and 1991. Because multivariate analyses by structural equations require listwise deletion, any person with a missing value for a variable was deleted from the analyses. The combined sample of adolescents that remained in the study over the two waves of data considered in these analyses equaled 380 cases (178 boys, 202 girls).

Procedures

Names and addresses of possible participants were obtained from the 34 schools with seventh-grade students in the eight study counties. To retain the rural character of the sample, only schools located in communities with a population of 6,500 or less were recruited for study. Families were sent a letter explaining the project and then were contacted by telephone and asked to participate. A personal visit was made to those without a telephone. After agreeing to be interviewed, each family was visited twice at home over a 2-week period each year of the study.

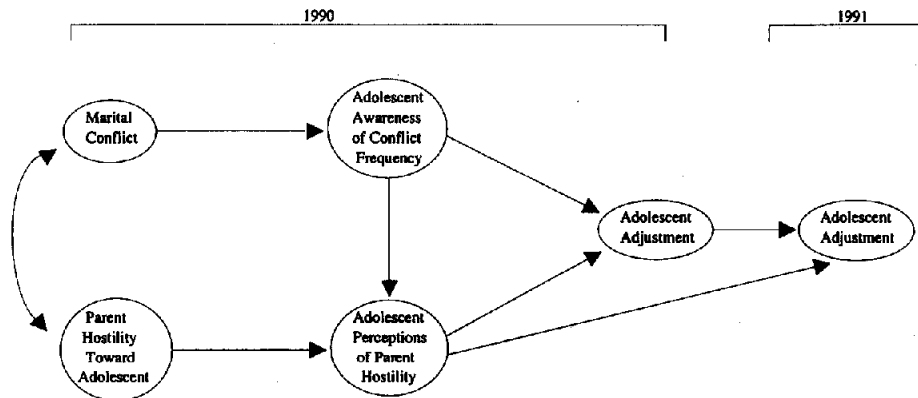


Figure 3. The conceptual model (Study 2).

During the first visit, the project interviewer explained the purpose of the study, obtained informed consent, and collected demographic information. Then each of the 4 family members separately completed a set of questionnaires that asked about topics such as recent life changes, family economic circumstances, the quality of family relationships, and other issues relevant to the study. The first visit took an average of 2 hr.

During a second visit that occurred about 2 weeks after the first, the family members were videotaped as they engaged in several structured interaction tasks. A trained interviewer began the session by asking each individual to complete independently a short questionnaire designed to identify issues of concern that led to disagreements within the family (e.g., chores, recreation). Family members were then gathered around a table and given a set of cards with questions for them to read and discuss. They were videotaped as they engaged in four separate structured-interaction tasks, two involving all 4 family members (Task 1, family discussion, 30 min; Task 2, problem solving, 15 min), one for the 2 siblings (Task 3, sibling task, 15 min), and one for only the marital dyad (Task 4, marital task, 25 min). During Task 1, family members discussed daily issues in family life, such as school activities and child-rearing practices. During Task 2 (problem solving), the family members were asked to discuss and try to resolve the issues that they had earlier identified as being most problematic. During Task 4, the husband and wife discussed the positive and negative dimensions of married life. Tasks 1, 2, and 4 were used in our analyses. Additional details regarding the observational procedures can be found in Conger and Elder (1994).

Measures

The study involved five domains of measurement: marital conflict, parental hostility, adolescent perception of conflict frequency, adolescent perception of parental hostility, and adolescent psychological distress (measured at two separate points in time). We used multiple indicators to measure each of the exogenous and endogenous latent constructs included in the model. All questionnaire items used in the construction of latent constructs were coded so that a high score represented high levels of the quality indexed by the measure.

Marital conflict. We measured marital conflict with information from two different sources. First, spouses were each asked to rate 11 questions regarding the partner's level of hostility within the marriage during the past month. The husband's and wife's reports were then combined to create a parents' self-report indicator of marital conflict ($\alpha = .92$). Second, observer ratings of husband's and wife's hostility, on the basis of the videotaped data, were used as an indicator of marital conflict. Two independent observers reported on a 5-point scale from *low* to *high* whether the husband or wife in the task demonstrated hostile, angry-coercive, reciprocal negative (called transactional conflict), or antisocial behavior toward their spouse. These separate ratings were summed to create an indicator of interparental hostility ($\alpha = .80$ for fathers to mothers; $\alpha = .84$ for mothers to fathers). The same tapes for 12% of the tasks were independently coded and showed acceptable interrater reliability ($\alpha = .72$; Mitchell, 1979).

Parent hostility toward the adolescent. The mother and father were each asked to respond to four items that indicated how often, during the past month, she or he had responded in the following ways toward the adolescent, "got angry at him or her," "criticized him or her for his or her ideas," "shouted or yelled at him or her because you were mad at him or her," and "argued with him or her whenever you disagreed about something." Mother's and father's reports were combined to create a parental report indicator ($\alpha = .82$). To obtain a second indicator of parents' hostility toward the adolescent, observer ratings of mother's and father's hostile, angry-coercive, reciprocal reactivity, and antisocial behavior were combined ($\alpha = .89$). Interobserver reliability was again found to be acceptable ($\alpha = .71$).

Adolescent awareness of conflict frequency. This construct was measured using two questionnaire items. The adolescent responded to the questions "how often do your parents argue about not having enough money" (range from 1, *always*, to 5, *never*), and "thinking about your parents, how often would you say they argue or disagree with each other" (range from 1, *often*, to 4, *never*). These items were significantly correlated with each other ($r = .46, p < .001$). This measure assessed the frequency with which marital conflict occurs as perceived by the adolescent and thus taps the process dimension of conflict as emphasized by Cummings and Cummings (1988).

Adolescent's perception of parent hostility. To assess perceived parental hostility, the adolescent indicated how often during the past month each parent had behaved in a hostile, coercive, or angry manner toward him or her. The adolescent's reports of mother's hostility ($\alpha = .83$) and father's hostility ($\alpha = .82$) were then used as separate indicators rather than as a combined single indicator.

Adolescent adjustment. Internalizing symptoms were measured using two subscales of the Symptom Distress Checklist-90—Revised (Derogatis, 1983). The Depression subscale ($\alpha = .89$) comprises 12 items (e.g., "feeling blue," "feeling lonely"), and the Anxiety subscale comprises 10 items (e.g., "feeling fearful," "trembling").

Externalizing symptoms were measured with Elliot, Huizinga, and Menard's (1989) Delinquency subscale of the Delinquency Checklist adapted from the National Youth Survey and Buss and Durkee's (1957) Antisocial subscale of the Buss and Durkee Hostility-Guilt Inventory. The Delinquency subscale (22 items; $\alpha = .77$) includes behaviors such as "driven a car when drunk," "run away from home." Seven items make up Buss and Durkee's Antisocial subscale (e.g., "When I get mad, I say nasty things;" $\alpha = .85$).

Separate analyses were conducted for boys and girls. A number of earlier studies that specifically examined the effects of marital conflict on child adjustment found that such conflict was more closely linked to behavior problems in boys than in girls (e.g., Johnson & O'Leary, 1987). One explanation offered for this difference is that girls are more likely to be shielded from conflict than are boys. However, recent investigations have concluded that a significant association exists between marital conflict and girl's adjustment, suggesting that both boys and girls are adversely affected by exposure to overt marital conflict (Osborne & Fincham, 1996).

Results and Discussion

Correlations for all study variables are provided in Table 3. Girls' results appear above the main diagonal, with boys' results appearing below. In general, the correlations among the construct indicators are consistent with the hypothesized theoretical model (see Table 3; e.g., parents' self-report of marital conflict and hostility toward the adolescent, $r = .31, p < .01$). The validity of each of the major constructs included in the theoretical model can be demonstrated by noting the magnitude of specific correlations between construct indicators. For example, parent's self-reports of marital conflict and parent-child hostility were derived from items developed for the IYFP. Whether the measures are valid estimates of what they are intended to represent can be answered by noting the magnitude and level of statistical significance of each self-report measure and its associated, independently measured, observer estimate (e.g., parent's and observer's reports of marital conflict, $r = .44, p < .01$; parent's and observer's reports of hostility toward the adolescent, $r = .40, p < .01$). With regard to the adolescent perceptions of the frequency of marital conflict, there should be a significant association between the observer reports of marital

Table 3
Intercorrelations for All Indicators of Constructs for Girls and Boys

Construct indicator	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Parent's marital conflict, self-report	—	.40**	.29**	.10**	.41**	.47**	.22**	.11	.08	.07	-.02	.07	.06	.06	.05	.02
2. Parent's marital conflict, obs. report	.44**	—	.24**	.34**	.31**	.31**	.23**	.18**	.04	.07	.16*	.13	-.02	.03	.06	.01
3. Parent's hostility toward adolescent, self-report	.24**	.16*	—	.53**	.06	.03	.45**	.35**	.03	.03	-.03	.07	.10	.08	-.01	.08
4. Parent's hostility toward adolescent, obs. report	.24**	.16*	.40**	—	.17*	.15*	.30**	.34**	.04	.13	.12	.23**	.07	.15*	.21**	.19**
5. Adolescent perceptions of marital conflict (finances)	.38**	.21**	.20*	.09	.52**	—	.26**	.27**	.15*	.07	.03	.17**	.08	.07	.16*	.09
6. Adolescent perceptions of marital conflict (arguing)	.29**	.17*	.32**	.33**	.42**	.47**	—	.66**	.30**	.25**	.14*	.21**	.15*	.19**	.08	.16*
7. Adolescent perception of father's hostility	.19**	.14	.32**	.32**	.41**	.42**	.71**	—	.35**	.36**	.19**	.25**	.33**	.31**	.15*	.28**
8. Adolescent perception of mother's hostility	.06	-.04	.12	.06	.30**	.31**	.23**	.35**	—	.76**	.37**	.26**	.49**	.48**	.08	.26**
9. Adolescent depression, Time 1	.05	-.04	.05	-.01	.24**	.31**	.20**	.32**	.71**	—	.47**	.29**	.47**	.64**	.28**	.31**
10. Adolescent anxiety, Time 1	.03	.03	.14*	.11	.15*	.20*	.20**	.26**	.21**	.17*	—	.35**	.07	.23**	.40**	.27**
11. Adolescent delinquency, Time 1	.18**	.19**	.15*	.19**	.25**	.32**	.43**	.31**	.25**	.17*	.37**	—	.23**	.31**	.33**	.66**
12. Adolescent antisocial, Time 2	.00	-.03	.11	.07	.08	.15*	.21**	.28**	.48**	.45**	.17*	.17*	—	.75**	.29**	.39**
14. Adolescent anxiety, Time 2	.02	.02	.11	.11	.16*	.24**	.28**	.35**	.37**	.42**	.10	.12	.71**	—	.46**	.44**
15. Adolescent delinquency, Time 2	.02	.01	.10	.11	.11	.22**	.23**	.36**	.20**	.27**	.57**	.29**	.23**	.25**	—	.44**
16. Adolescent antisocial, Time 2	.16	.13	.24	.13	.17	.21**	.32**	.34**	.06**	.09	.30**	.64**	.25**	.25**	.38**	—

Note. For girls, $N = 202$, above the diagonal; for boys, $N = 178$, below the diagonal. Obs. = observer.
* $p < .05$. ** $p < .01$.

conflict and adolescent reports of conflict frequency (because of the overt rather than covert nature of this conflict), which was indeed found ($r = .21$ for boys, $r = .31$ for girls, $p < .05$). Similarly, the association between adolescent appraisals of parent-child hostility and independent observer ratings of such hostility are statistically significant (e.g., fathers-boys, $r = .33$; mothers-girls, $r = .34$, $p < .05$).

Structural Equation Modeling

We used structural equation modeling (LISREL 7.20; Jöreskog & Sörbom, 1989) based on maximum likelihood estimation to test the validity of the hypothesized theoretical model. The hypothesized relationships outlined in Figure 3 were estimated separately for boys and girls. Because estimates of relationships between constructs measured by reports from a single informant may be upwardly biased, error terms for parent's self-reports of marital conflict and hostility toward the adolescent and adolescent reports of psychological adjustment (e.g., adolescent depression measured in 1990 and the same indicator measured in 1991) were allowed to covary (Thomson & Williams, 1984). In separate analyses, we also looked at the reciprocal relations between both adolescent perceptual measures to more clearly locate the causal relationship between these measures hypothesized in our theoretical model. The results obtained from this analysis provided support for the direction of effects proposed in the model.¹

A stacked modeling procedure (Bollen, 1989) indicated that subgroup comparisons showed no significant gender differences in the model predicting externalizing problems. However, for the model involving internalizing symptoms, the link between adolescent perceptions of conflict frequency and adolescent adjustment measured in 1990 differed significantly for boys and girls.

¹ To establish the causal link hypothesized in this study, we estimated a model that included bidirectional effects between the adolescent perceptual measures. Central to the argument proposed in Study 2 is that children's perceptions of the frequency of marital conflict will have an impact on their perceptions of parent-child hostility. In a two-step process, we tested this hypothesis further. First, we reversed the causal direction of the association between these two constructs. The magnitude of this reversed path appeared significant for each outcome and each subgroup considered ($\beta = .42$ to $.47$, $p < .01$). Next, we examined a reciprocal effects model, in which bidirectional effects were estimated between perceptions of conflict frequency and perceptions of parent hostility. When both paths were estimated simultaneously within the overall model system, for girls, the path from perceptions of hostility to perceptions of conflict frequency was statistically insignificant for both outcome measures ($\beta = .124$, $p > .10$); for boys, this path was significant ($\beta = .324$, $p < .01$, internalizing; $\beta = .306$, $p < .01$, externalizing). However, it did not differ significantly from the path hypothesized in the theoretical model. Also, when a model including reciprocal effects between these key constructs was compared with the theoretically proposed model, there was no improvement in the fit of the model, $\Delta\chi^2/\Delta df < 3.86$. It is important to note that reciprocal effects were not hypothesized as part of our initial model. As should be the case with all causal modeling analysis, the direction of each proposed link in the model should be specified a priori. However, these additional analyses were useful in that they more clearly establish the direction of effects proposed in Study 2.

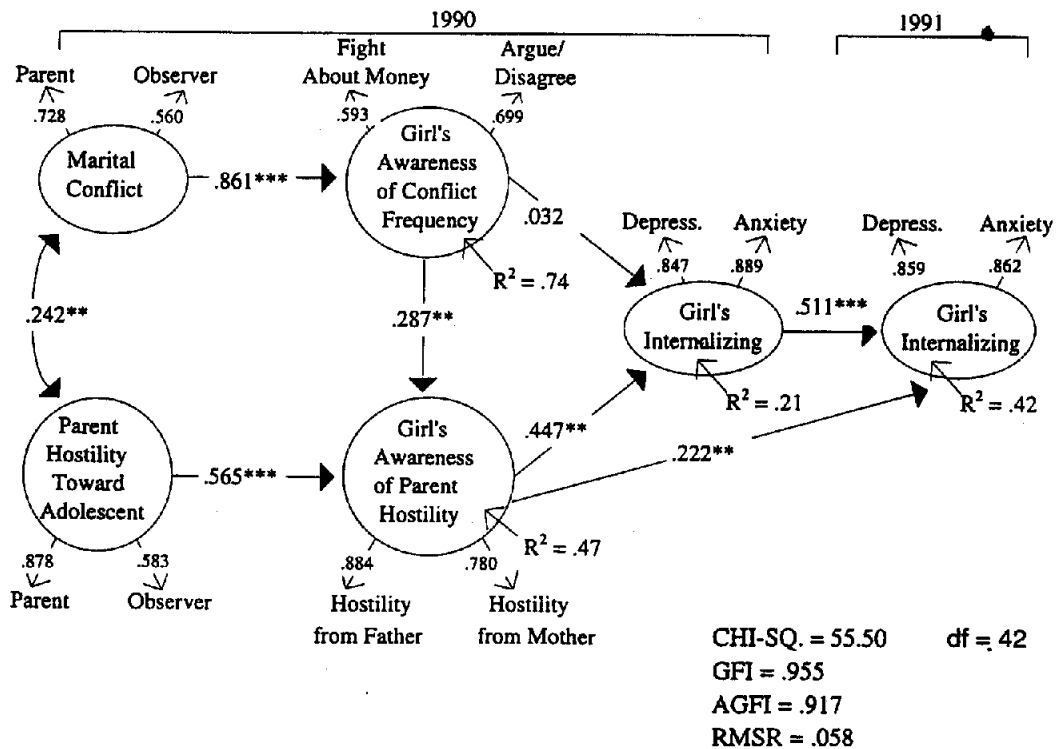
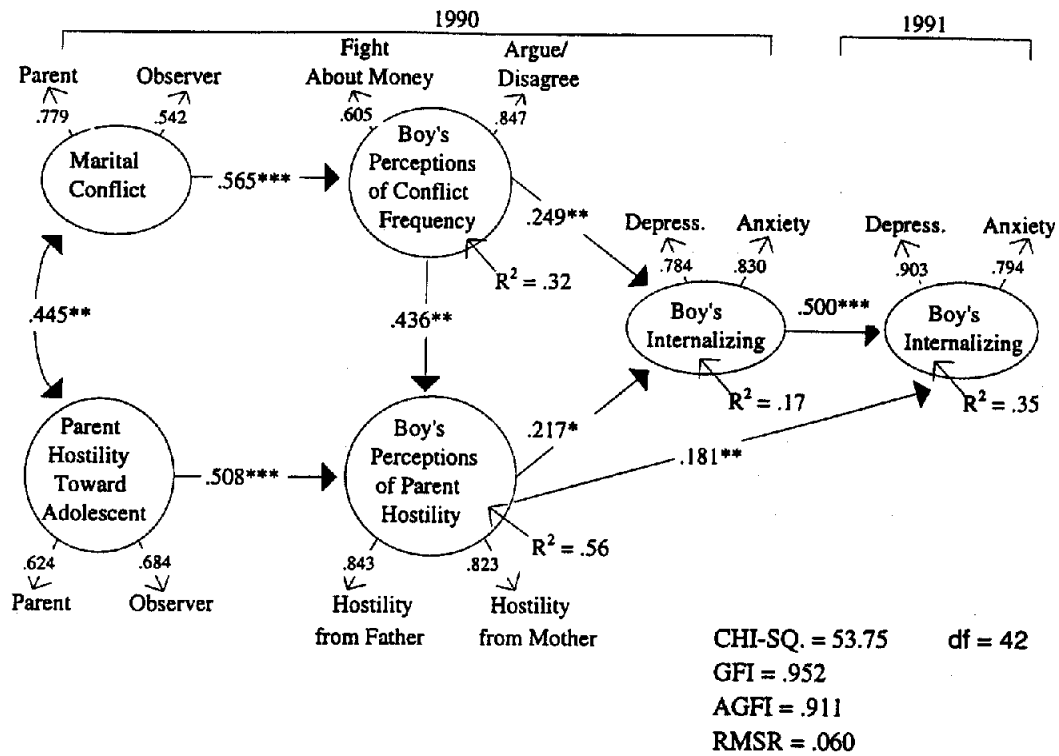


Figure 4. Maximum likelihood estimation of the conceptual model for boys' (Top) and girls' (Bottom) internalizing behavior. **p* < .10. ***p* < .05. ****p* < .01. Depress. = depression; GFI = goodness-of-fit indices; AGFI = adjusted goodness-of-fit indices; RMSR = root mean square residuals.

Internalizing Behavior

Figure 4 (Top) contains the results for the model predicting boys internalizing symptoms. The standardized coefficients indicate that marital conflict was significantly associated with parents' hostility toward the adolescent ($r = .445, p < .05$). Each of these two constructs was significantly and independently related to boys' perceptions of associated parental behavior ($b = .565, p < .01$, for marital conflict to boys' perceptions of the frequency of such conflict, and $b = .508, p < .01$, for parent hostility to adolescent perception of parent hostility). Boys' perceptions of conflict frequency were significantly related to boys' perceptions of parent hostility ($b = .436, p < .01$). Each of these constructs significantly predicted the level of adolescent reported concurrent internalizing symptoms ($b = .249, p < .05$, for perception of marital conflict; $b = .217, p < .10$, for perception of parent hostility). However, consistent with the hypothesized theoretical model, only parental hostility reported by the adolescent significantly predicted internalizing behaviors 1 year later ($b = .181, p < .05$); the adolescent's perception of mistreatment increased his degree of psychological distress not only in 1990, but also in 1991. As expected, the temporally ordered measures of adolescent internalizing symptoms were significantly related ($b = .500, p < .01$). With regard to the measurement portion of the model, indicator loadings for each of the study constructs were statistically significant and respectably high (loadings ranged from .542 to .900). The chi-square for this model, $\chi^2(42, N = 178) = 53.75$, and goodness of fit indices (GFI = .952; AGFI = .911; RMSR = .060) suggest that this model fits the data reasonably well.

For the girls' model (Figure 4, Bottom), most of the coefficients are similar to those for boys. However, although a number of coefficients differ in terms of magnitude, only in the case of the association between adolescent perceptions of conflict frequency and concurrently reported internalizing symptoms was there a statistically significant difference for boys and girls ($b = .249, p < .05, b = .032, p > .10$, respectively). Thus, the influence of girls' perceptions of conflict on internalizing problems appears to be indirect through perceived hostility. The chi-square value, $\chi^2(42, N = 202) = 55.50$, and goodness of fit indices (GFI = .955; AGFI = .917; RMSR = .058) suggest that the model fits the data as well as the boys' model. With regard to the measurement portion of this model, indicator loadings were similar to those reported for the boy's model (loadings ranged from .563 to .889).

Externalizing Behaviors

Figure 5 (Top and Bottom) contains the results for the models predicting externalizing behaviors. As noted earlier, the model predicting externalizing behavior did not differ significantly by gender. Generally speaking, the magnitude of each of the hypothesized relationships is similar to those presented for the models containing internalizing symptoms, with one important difference. Adolescent perceptions of parent hostility did not predict later adolescent externalizing symptoms for boys ($b = .065, p > .10$). Although not statistically significant, gender differences in the magnitude of paths originating from the adolescent perceptual measures were also found. The magnitude of the paths

linking adolescent perception of conflict frequency to adolescent perception of parent hostility ($b = .441, p < .01$, for boys; $b = .286, p < .05$, for girls) and from adolescent perception of parent hostility to externalizing behavior measured in 1990 ($b = .508, p < .05$, for boys; $b = .417, p < .05$, for girls) was larger for boys compared with girls. This suggests that in the presence of independently measured marital conflict and parent-child hostility, a child's perception of the frequency of marital conflict indirectly leads to an increase in concurrent externalizing behavior as a function of perceived parental mistreatment. As before, all indicators were significantly related to their latent constructs (loadings ranged from .552 to .890). Both models provide an adequate fit to the data, $\chi^2(42, N = 178) = 57.96$ (GFI = .950; AGFI = .907; RMSR = .048) for boys; $\chi^2(42, N = 202) = 60.38$ (GFI = .951; AGFI = .910; RMSR = .055) for girls; see Figure 5, Top and Bottom.

The theoretical model guiding this research hypothesizes a linking process through which marital conflict and parental hostility indirectly affect concurrent and longitudinal levels of adolescent psychological adjustment. In the presence of weak associations between marital conflict, parental hostility, and both concurrent and longitudinal adolescent adjustment when estimated alone (β ranged from .200 to .243, $p < .05$), support for a linking mechanism between these exogenous constructs and each outcome measure is provided by the presence of a significant indirect effect between these constructs through adolescent perceptions of conflict frequency and parent-child hostility on concurrent adjustment (β ranged from .296 to .321, $p < .05$). Significant indirect effects were also found for longitudinal levels of psychological adjustment (β ranged from .152 to .163, $p < .05$).

Analysis of Competing Models

To examine the appropriateness of the hypothesized model, we conducted an analysis of hierarchically related (nested) models. Table 4 presents the results of a series of nested modeling comparisons, beginning with a fully recursive model and moving to a restricted baseline model. The relationships between these models are shown schematically in Figure 6 (with boys' internalizing behavior as an example). Each model in Figure 6 shows a theoretically interesting situation. However, the change in chi-square as we move through each of these competing models suggests that the theoretical model (5b) provides the best fit to the data. The chi-square statistic, $\chi^2(42, N = 178) = 53.8$, associated with this model is not significantly different from its preceding nested comparison, $\Delta\chi^2 = 2.0, \Delta df = 1$. This is a favorable result because we can conclude that the theoretical model fits the data as well as each preceding model yet is more parsimonious in terms of the number of parameters available to explain the amount of variance available in the data. This is not the case for Model 5a, which includes a direct path from perceptions of conflict frequency to Time 2 adjustment but excludes the longitudinal link between perceptions of parental hostility and later adjustment estimated in our theoretical model. Also, and equally important for the purposes of a successful nested modeling comparison, the theoretical

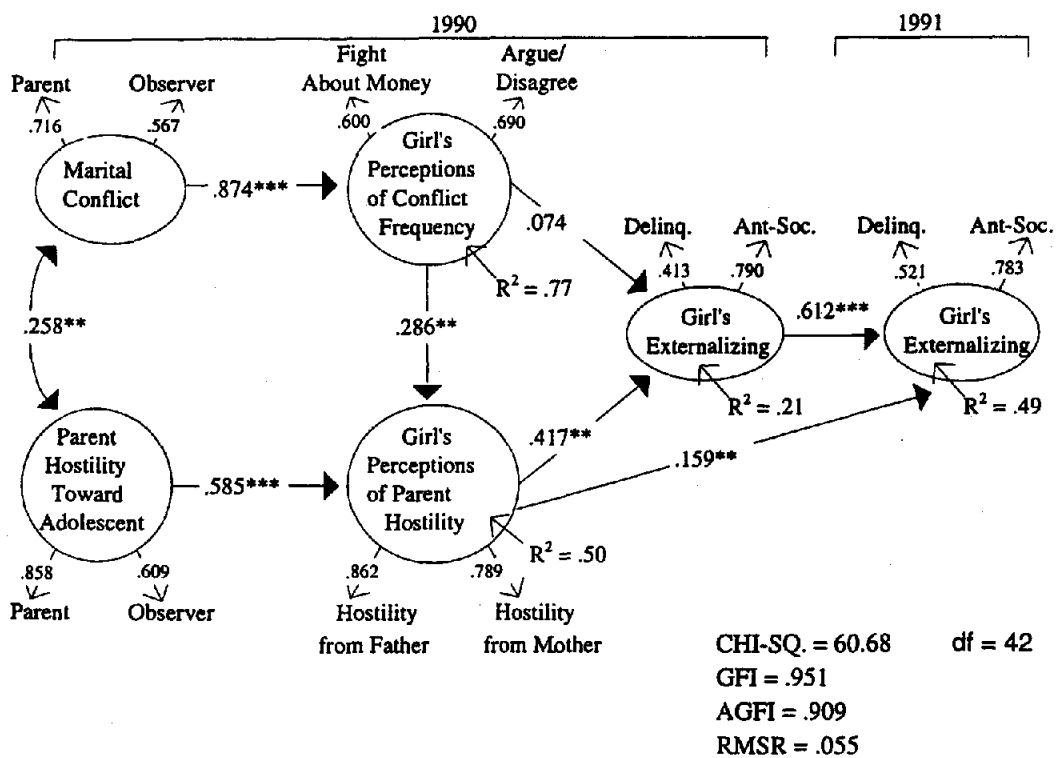
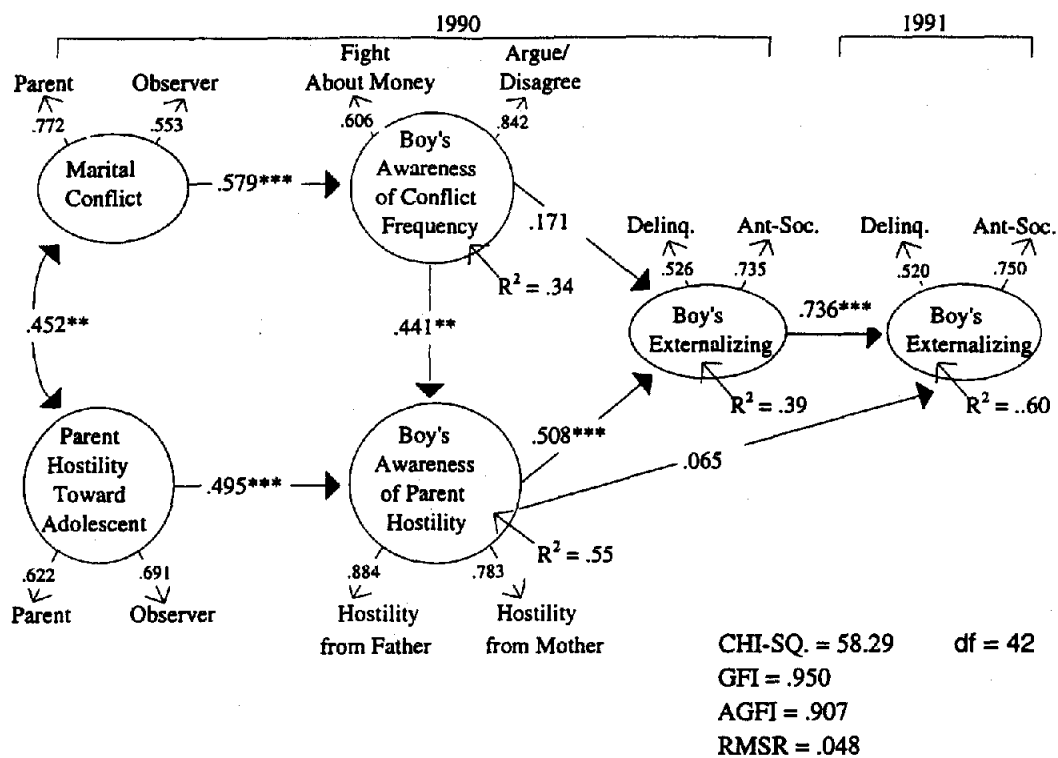


Figure 5. Maximum likelihood estimation of the conceptual model for boys' (Top) and girls' (Bottom) externalizing behavior. * $p < .10$. ** $p < .05$. *** $p < .01$. Delinq. = delinquent; Ant-Soc. = Antisocial; GFI = goodness-of-fit indices; AGFI = adjusted goodness-of-fit indices; RMSR = root mean square residuals.

Table 4
 Comparison of Boys' ($N = 178$) and Girls' ($N = 20$) hierarchically Nested Models in Study 2

Estimated Model	Comparison of hierarchically nested models											
	Internalizing						Externalizing					
	Boys			Girls			Boys			Girls		
	χ^2	df	$\Delta\chi^2$	χ^2	df	$\Delta\chi^2$	χ^2	df	$\Delta\chi^2$	χ^2	df	$\Delta\chi^2$
Model 1 (fully recursive)	44.4	35	—	41.3	35	—	52.4	35	—	51.9	35	—
Model 2	44.6	37	0.2	42.0	37	0.6	52.7	37	0.3	52.8	37	0.9
Model 3	47.4	39	2.8	49.4	39	7.4	52.8	39	0.1	53.7	39	0.9
Model 4	51.8	41	4.4	54.1	41	4.7	56.2	41	3.6	57.3	41	3.6
Model 5a	56.9	42	5.1 ^a	63.6	42	9.5 ^a	56.9	42	0.7	60.5	42	3.2
Model 5b ^b	53.8	42	2.0	55.5	42	1.4	58.3	42	1.4	60.7	42	0.2
Model 6 (baseline)	79.7	44	25.9 ^a	41.3	44	23.8 ^a	80.7	44	22.4 ^a	72.6	44	11.9 ^a

Note. Dashes refer to a number that is not relevant; that is, there is zero change in chi-square in Model 1.
^a = Statistically significant change in chi-square ($\Delta\chi^2/\Delta df$). ^b = Hypothesized theoretical model.

model is significantly different from the theoretically uninteresting baseline model, $\Delta\chi^2 = 27.9$, $\Delta df = 2$.²

Conclusion

Tests of the model examined in Study 2 supported the hypothesis that marital conflict is associated with a "spillover" effect in the form of increased hostility toward the adolescent. They also showed that parent and observer reported interparental conflict and parent-child hostility were positively associated with the level of marital conflict and parental hostility perceived by the adolescent. Moreover, the adverse influence of marital conflict and parental hostility on current and future adolescent distress was completely accounted for by the adolescents' perceptions of these negative parental behaviors.

It is interesting that support was provided for the direct effect of adolescent perceptions of conflict frequency on current psychological distress in the case of boy's internalizing symptoms only. In contrast, for both outcome and gender, there was support for indirect effects of adolescent perceptions of conflict frequency through perceived parental hostility on current adjustment.

Support for the hypothesis that adolescent perceptions of parental hostility have a direct effect on concurrent and longitudinal adolescent-reported psychological distress was provided for both boys and girls in the case of internalizing symptoms. However, when externalizing behaviors were examined, a direct effect existed only in the case of concurrently measured perceptions of hostility and behavioral adjustment.

General Discussion

Rationale and Results of the Studies

An important goal of the present studies was to examine simultaneously direct and indirect effects of marital conflict on child adjustment. This starting point reflected a recognition of the need to move beyond the question of whether marital conflict or parent-child relations lead to child adjustment problems and gain an understanding of how marital conflict and parent-child

relations are related to each other and to child adjustment. Toward this end, we obtained several findings that advance our understanding.

First, direct effects of marital conflict on adjustment appear to be limited to concurrent internalizing problems. The direct effect found in Study 1 was replicated in Study 2 for boys, but not for girls. This gender related finding is consistent with a number of previous studies on the association between family relationships and children's adjustment. For example, Emery and O'Leary (1982) suggested that family relationships have more negative consequences for boys than for girls. Cummings et al. (1994) went a step further by proposing two hypotheses related to this gender difference: (a) boys are more reactive to family conflict than girls, and (b) boys are less shielded from family conflict than girls. These authors concluded that very little support has been provided for the former hypothesis, but there is evidence to support the latter hypothesis (Grych &

² Using LISREL notation, the sequence of nested models is based on the following latent construct order and parameter estimation: ζ_1 = marital conflict, ζ_2 = parent hostility toward the adolescent; η_1 = adolescent perception of conflict frequency, η_2 = adolescent perception of parent hostility, η_3 = adolescent adjustment (Time 1), η_4 = adolescent adjustment (Time 2). The nested model comparison proceeded in the following manner. Paths removed from one model are not estimated in each succeeding model. Those paths that are removed in a systematic manner also appeared nonsignificant within the preceding model. Model 1: All paths are freely estimated (structural portion of the model). Model 2: Direct paths between marital conflict, parent's hostility, and Time 2 adolescent adjustment are removed. Model 3: Direct paths between marital conflict, parent's hostility, and Time 1 adolescent adjustment are removed. Model 4: Direct paths between marital conflict, parent's hostility, and each of the adolescent perceptual measures are removed. Model 5a: The direct effect between adolescent perceptions of parent's hostility and Time 2 adolescent adjustment is removed. Model 5b: The direct effect between adolescent perceptions of conflict frequency and Time 2 adolescent adjustment is removed (theoretical model). Model 6: Theoretically uninteresting—baseline model. The outcome of this nested modeling comparison is described in the text and shown schematically in Figure 6.

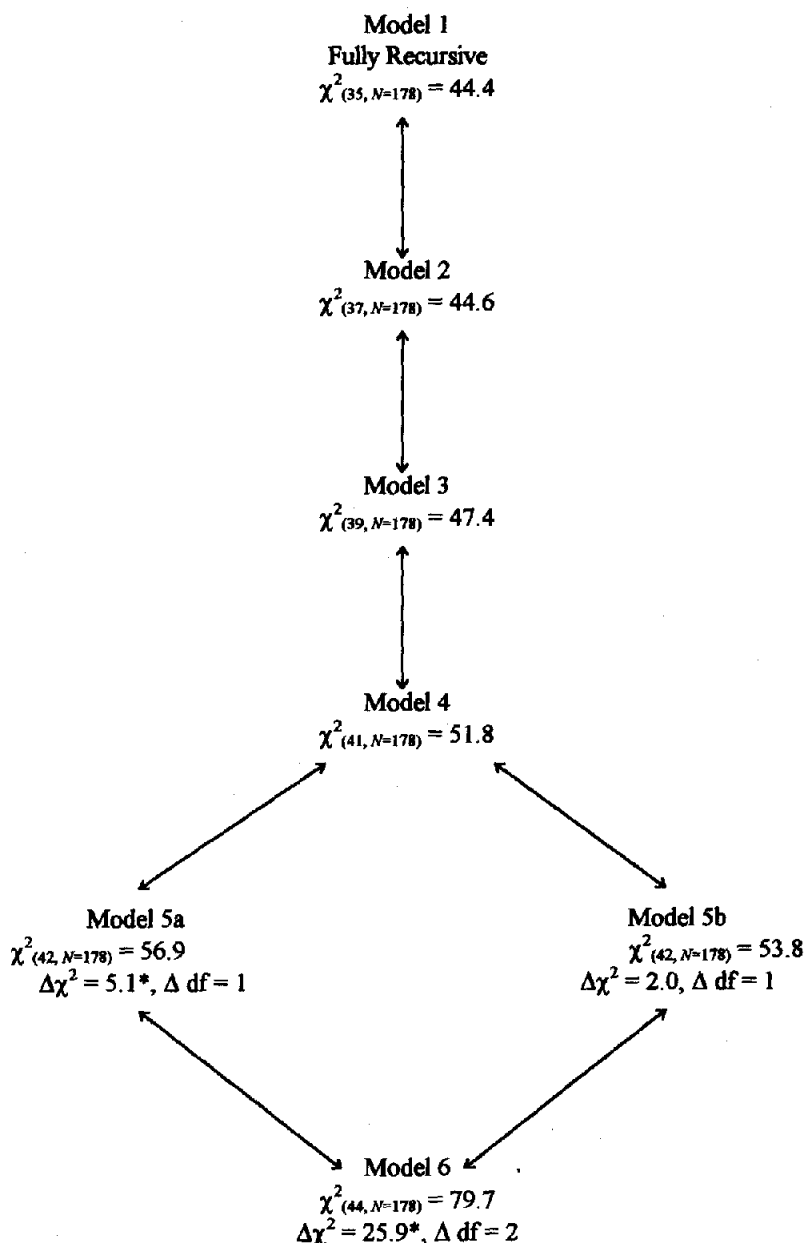


Figure 6. Schematic representation of hierarchically related modeling for boys' internalizing symptoms (for further elaboration, see footnote 2).

Fincham, 1990). It is possible that boys in this study were less shielded than girls from conflicts between their parents, thus producing a greater reaction to expected "spillover" effects from perceived marital conflict that expressed itself through internalizing symptoms. Whatever the reason for this gender difference, the specific mechanisms that might account for it will need to be identified in future research.

Second, adolescent appraisals of marital conflict appear to be important for understanding adolescents' perceptions of parent-child relations. In both studies, the hypothesis that marital conflict influences perceptions of parent-child relationships was

consistently supported. Specifically, children who have witnessed interparental hostility appear to interpret parent-child conflict as more hostile or threatening than children who have not witnessed such conflict. As Cummings and Davies (1994) suggested, children who witness hostile exchanges between their parents may feel less secure in their own relationship with their parents, believing that at least some of that conflict may be directed at them.

Third, the studies support the utility of examining children's appraisals of marital conflict and of parent-child relations. Theoretically meaningful results were obtained with such appraisals

in Study 1 and Study 2, showing that they have clear external referents. Moreover, the findings of Study 2 are consistent with the view that adolescents' appraisals of marital conflict and parent-child hostility mediate the impact of actual interparental hostility and parent-child relations on adolescent distress. These findings add to a growing number of studies that document increased understanding of the association between marital conflict and child adjustment through the study of children's appraisals (e.g., Cummings et al., 1994; Grych et al., 1992).

Fourth, these data are among the first to show that adolescent appraisals predict later adjustment. Specifically, adolescent appraisals of parent hostility were directly related to later internalizing symptoms, controlling for earlier depressed and anxious mood. Perceptions of marital conflict were indirectly related to later internalizing symptoms through appraisals of parental hostility. It is not clear why investigation of externalizing symptoms failed to yield similar findings. One possible reason may be the well-documented stability of externalizing symptoms over time. The higher path coefficients found between the two measures of externalizing symptoms, compared with those for internalizing symptoms, indicate that there was less variance to be explained by the appraisal measures.

Limitations and Qualifications

Although simultaneous estimation of model parameters and the inclusion of longitudinal data confer important advantages for furthering our understanding of the mechanisms through which marital conflict is related to child adjustment, the limitations of these two studies must be acknowledged. Foremost among these is the use of correlational data to examine causal mechanisms, which means that the studies are subject to all the criticisms that can be made of nonexperimental research. Second, the models tested were guided by a particular theoretical perspective and are necessarily a small subset of the possible models that could be examined. Third, all variables were not measured at each time point in our longitudinal study. This leaves open the possibility, for example, that adolescent appraisals are a function of earlier adolescent adjustment. Fourth, the interval between assessments in the longitudinal study was arbitrarily chosen so that stronger or weaker effects may emerge over different time intervals. Finally, like many prior studies, ours are based on community samples rather than clinical samples. In this research, adaptation psychopathology is viewed as a continuum, and no attempt is made to determine whether findings hold for both nonclinical and clinical cases. Clearly, this genre of research is relevant to clinically significant disorders but needs to be replicated on clinical populations before the results can be generalized. An important limitation of Study 2 suggests caution when interpreting the relative importance of direct and indirect effects of marital conflict on adolescent adjustment. Because the latent construct of marital conflict was measured with only two items as indicators, we did not examine the full range of perceptions (e.g., frequency, intensity, and resolution) contained within a more fully developed measure of adolescent perceptions of interparental behavior such as the CPIC scale (Grych et al., 1992). Use of a more complete measure of perceived marital conflict may have yielded stronger

direct as well as indirect effects between such perceptions and adolescent adjustment in the models tested.

Implications for Theory and Research

The primary implications of the present studies are fourfold. First, the evidence obtained for direct and indirect effects suggests that the time has come to focus on how marital conflict and parent-child relations interact to influence child adjustment. Given the documented association between marital conflict and parenting (e.g., Conger et al., 1992, 1993; Fauber & Long, 1991), it is possible that particular aspects of conflict produce particular changes in parenting. Determining the components of marital conflict that map onto components of parenting would improve greatly our understanding of the role of direct and indirect effects in accounting for the link between conflict and adolescent adjustment. After all, parenting is, in part, a response to child behavior and will always covary more with child behavior than other factors (e.g., marital conflict) that may also potentially explain child behavior but that are not direct responses to it. A change in the focus of discussion highlights the need for further theoretical development concerning the relationship between marital conflict and parenting. We now need to move beyond the observation that the marital relationship provides support for parenting and determine which aspects of marital dysfunction relate to which aspects of parenting. Three aspects of parent-child interaction have been identified as particularly important for understanding how marital conflict may influence parenting, namely, discipline, parent-child aggression, and the affective quality of the parent-child relationship (see Fincham et al., 1994). The relative lack of discussion on the effect of the child in generating and influencing marital conflict and parenting underscores the need for further theoretical development.

A second implication of these two studies concerns gender. When gender was examined in Study 2, several important gender differences emerged. Yet, with a few notable exceptions (Kerig et al., 1993; Osborne & Fincham, 1996), little attempt has been made to determine how gender might advance our understanding of the marital conflict-child adjustment association. Because children are more likely to identify with the same sex parent, the behavior of mothers and of fathers in marital conflict is likely to be important in understanding fully the impact of the conflict for boys and girls. Consideration of each parent's behavior during conflict and of the child's individual relationship to each parent may therefore be critical to gaining a complete picture of the relation between interparental conflict and child adjustment.

Third, our studies suggest that marital conflict may play a differential role in accounting for disturbances in children's internalizing and externalizing behaviors. Support for indirect effects only was found for externalizing behavior. This suggests that the effects of marital conflict on a child's behavioral well-being are entirely mediated through a disturbance in the parent-child relationship. As Berkowitz (1989) has pointed out, contexts that stimulate angry cognitions also increase the incidence of aggression. In the context of marital conflict, parental aggression may lead to a more hostile parent-child relationship and more externalizing responses by children, thereby accounting for the indirect effect that was found.

In contrast, support for both direct and indirect effects was obtained for internalizing behaviors. As in the case of externalizing behaviors, marital conflict may adversely affect the parent-child relationship and lead to increases in internalizing symptoms. However, as Cummings and Davies (1994) suggested, children who witness hostile exchanges between their parents may feel less secure (anxious) in their own relationships with their parents, thereby accounting for the direct effect that was found.

These results provide important insight into the possible differential role of marital conflict in accounting for disturbances in internalizing versus externalizing behaviors. In future research, it would be useful to test models for children who have mainly internalizing problems, mainly externalizing problems, or a combination of the two (Zahn-Waxler, personal communication).

Finally, this research underscores the need for longitudinal studies. In view of the significant investment of time and resources required by such research and the risk that the issues investigated become outdated before the study is completed, the lack of longitudinal studies is perhaps not surprising. One means of minimizing risk is to ensure that the research is firmly grounded in theory. Toward this end, a recent analysis has been offered of the theoretical and practical problems encountered in longitudinal research on the association between marital conflict and child adjustment, together with suggestions for conducting more informative longitudinal studies (Fincham et al., 1994).

Conclusion

Documentation of an association between marital conflict and child adjustment has led to the question of why such an association exists. Our data address this question and suggest the need for a more sophisticated approach that integrates direct and indirect effects, includes examination of parent and child gender, and examines this association over time. Although more complex and demanding, such research is necessary if we are to further our understanding of the impact of marital conflict on child adjustment.

References

- Achenbach, T. M. (1991a). *Manual for Teacher's Report Form and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Achenbach, T. M. (1991b). *Manual for the Child Behavior Checklist 4-18 and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Achenbach, T. M. (1991c). *Manual for the Youth Self-Report and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Barron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin*, *106*, 59-73.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Bureau of the Census. (1991). *Statistical abstract of the United States*. Washington, DC: U.S. Department of Commerce.
- Buss, A., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology*, *21*, 343-349.
- Compas, B. (1987). Coping with stress during childhood and adolescence. *Psychological Bulletin*, *101*, 393-403.
- Conger, R. D., Conger, K. J., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). Linking economic hardship to marital quality and instability. *Journal of Marriage and the Family*, *52*, 643-656.
- Conger, R. D., Conger, K. J., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1993). Family economic stress and adjustment of early adolescent girls. *Developmental Psychology*, *29*, 206-219.
- Conger, R. D., & Elder, G. H., Jr. (1994). *Families in troubled times: Adapting to change in rural America*. New York: De Gruyter.
- Conger, R. D., Ge, X., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development*, *65*, 541-561.
- Cummings, E. M., & Cummings, J. L. (1988). A process-oriented approach to children's coping with adult's angry behavior. *Developmental Review*, *8*, 296-321.
- Cummings, E. M., & Davies, P. T. (1994). *Children and marital conflict: The impact of family dispute and resolution*. New York: Guilford Press.
- Cummings, E. M., Davies, P. T., & Simpson, K. S. (1994). Marital conflict, gender, and children's appraisals and coping efficacy as mediators of child adjustment. *Journal of Family Psychology*, *8*, 141-149.
- Cummings, E. M., Vogel, D., Cummings, J. S., & El-Sheikh, M. (1989). Children's responses to different forms of expression of anger between adults. *Child Development*, *60*, 1392-1404.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, *116*, 387-411.
- Derogatis, L. R. (1983). *SCL-90-R administration, scoring, and procedures manual II*. Towson, MD: Clinical Psycho-metric Research.
- Dickstein, S., & Parke, R. D. (1988). Social referencing in infancy. *Child Development*, *59*, 506-511.
- Elliott, D. S., Huizinga, D., & Menard, S. (1989). *Multiple problem youth: Delinquency, substance use, and mental health problems*. Beverly Hills, CA: Sage.
- Emery, R. E. (1988). *Marriage, adjustment, and children's adjustment*. Newbury Park, CA: Sage.
- Emery, R. E., Fincham, F. D., & Cummings, E. M. (1992). Parenting in context: Systemic thinking about parental conflict and its influence on children. *Journal of Consulting and Clinical Psychology*, *60*, 909-912.
- Emery, R. E., & O'Leary, K. D. (1982). Children's perceptions of marital discord and behavior problems of boys and girls. *Journal of Abnormal Child Psychology*, *10*, 11-24.
- Engfer, A. (1988). The interrelatedness of marriage and the mother-child relationship. In R. A. Hinde & J. Stephenson-Hinde (Eds.), *Relationships within families* (pp. 104-118). Oxford, England: Clarendon Press.
- Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin*, *118*, 108-132.
- Fauber, R. L., Forehand, R., Thomas, A. M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parenting. *Child Development*, *61*, 1112-1123.
- Fauber, R. L., & Long, N. (1991). Children in context: The role of the family in child psychotherapy. *Journal of Consulting and Clinical Psychology*, *59*, 813-820.
- Fincham, F. D. (1994). Understanding the association between marital conflict and child adjustment: Overview. *Journal of Family Psychology*, *2*, 123-127.
- Fincham, F. D., Grych, J. H., & Osborne, L. (1994). Does marital con-

- flict cause child maladjustment? Directions and challenges for longitudinal research. *Journal of Family Psychology*, 8, 128–140.
- Fincham, F. D., & Osborne, L. (1993). Marital conflict and children: Retrospect and prospect. *Clinical Psychology Review*, 13, 75–88.
- Grych, J. H., & Fincham, F. D. (1990). Marital conflict and children's adjustment: A cognitive-contextual framework. *Psychological Bulletin*, 108, 267–290.
- Grych, J. H., & Fincham, F. D. (1993). Children's appraisals of marital conflict: Initial investigations of the cognitive-contextual framework. *Child Development*, 64, 215–230.
- Grych, J. H., Seid, M., & Fincham, F. D. (1992). Assessing marital conflict from the child's perspective: The Children's Perception of Interparental Conflict Scale. *Child Development*, 63, 558–572.
- Harold, G. T., & Conger, R. D. (in press). Marital conflict and adolescent distress: The role of adolescent awareness. *Child Development*.
- Johnson, P. L., & O'Leary, K. D. (1987). Parental behavior patterns and conduct disorders in girls. *Journal of Abnormal Child Psychology*, 15, 573–581.
- Jöreskog, K. G., & Sörbom, D. (1989). *LISREL 7: A guide to the program and applications*. Chicago: Statistical Package for the Social Sciences.
- Jouriles, E. N., Farris, A. M., & McDonald, R. (1991). Marital functioning and child behavior: Measuring specific aspects of the marital relationship. In J. P. Vincent (Ed.), *Advances in family intervention, assessment, and theory* (pp. 25–46). London: Jessica Kingsley.
- Jouriles, E. N., Murphy, C. M., & O'Leary, K. D. (1989). Interspousal aggression, marital discord, and child problems. *Journal of Consulting and Clinical Psychology*, 57, 453–455.
- Katz, L. F., & Gottman, J. M. (1993). Patterns of marital conflict predict children's internalizing and externalizing behaviors. *Developmental Psychology*, 29, 940–950.
- Kerig, P. K., Cowan, P. A., & Cowan, C. P. (1993). Marital quality and gender differences in parent-child interaction. *Developmental Psychology*, 29, 931–939.
- Kovacs, M. (1981). Rating scales to assess depression in school-aged children. *Acta Paedopsychiatrica*, 46, 305–315.
- Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology*, 33, 472–476.
- Mitchell, S. K. (1979). Interobserver agreement, reliability, and generalizability of data collected in observational studies. *Psychological Bulletin*, 86, 376–390.
- O'Brien, M., Margolin, G., John, R. S., & Krueger, L. (1991). Mother's and son's cognitive and emotional reactions to simulated marital and family conflict. *Journal of Consulting and Clinical Psychology*, 59, 692–703.
- O'Leary, K. D. (1984). Marital discord and children: Problems, strategies, methodologies, and results. In A. Doyle, D. Gold, & D. S. Moskowitz (Eds.), *Children in families under stress*. San Francisco: Jossey-Bass.
- Osborne, L. N., & Fincham, F. D. (1996). Marital conflict, parent-child relations and child relations: Does gender matter. *Merrill Palmer Quarterly*, 42, 48–75.
- Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practices and delinquency. *Child Development*, 55, 1299–1307.
- Prinz, R. J., Foster, S. L., Kent, R. N., & O'Leary, K. D. (1979). Multivariate assessment of conflict in distressed and non-distressed mother-adolescent dyads. *Journal of Applied Behavior Analysis*, 12, 691–700.
- Reid, W. J., & Crissafulli, A. (1990). Marital discord and child behavior problems: A meta-analysis. *Journal of Abnormal Child Psychology*, 18, 105–117.
- Reynolds, C. R. (1980). Concurrent validity of what I think and feel: A revised measure of children's anxiety. *Journal of Consulting and Clinical Psychology*, 48, 774–775.
- Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's anxiety. *Journal of Abnormal Child Psychology*, 6, 271–280.
- Reynolds, C. R., & Richmond, B. O. (1979). Factor structure and construct validity of "what I think and feel": The Revised Children's Manifest Anxiety Scale. *Journal of Personality Assessment*, 43, 281–283.
- Robin, A. L., & Foster, S. L. (1984). Problem solving communication training: A behavioral-family systems approach to parent-adolescent conflict. In P. Karoly & J. J. Steffen (Eds.), *Adolescent behavior disorders: Foundations and contemporary concerns*. Lexington, MA: Heath.
- Robin, A. L., & Foster, S. L. (1989). *Negotiating parent-adolescent conflict*. New York: Guilford Press.
- Rutter, M. (1983). Stress, coping, and development: Some issues and some questions. In N. Garnezy & M. Rutter (Eds.), *Stress, coping, and development in children* (pp. 1–41). New York: McGraw-Hill.
- Schumm, W. R., & Bagarozzi, D. A. (1989). The Conflict Tactics Scales. *American Journal of Family Therapy*, 17, 165–168.
- Strauss, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family*, 41, 75–88.
- Thomson, E., & Williams, R. (1984). A note on correlated measurement error in wife-husband data. *Journal of Marriage and the Family*, 46, 643–649.
- Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review*, 96, 234–254.

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