

## Interparental Conflict Styles and Parenting Behaviors: Associations With Overt and Relational Aggression Among Chinese Children

Yan Li *DePaul University*

Martha Putallaz *Duke University*

Yanjie Su *Peking University*

This study examined how interparental conflict styles related to Chinese children's overt and relational aggression directly and indirectly through parenting behaviors. Mothers ( $n = 670$ ) and fathers ( $n = 570$ ) reported their overt and covert interparental conflict styles and different parenting behaviors. Children's ( $n = 671$ ) aggression was assessed by peer nominations. Consistent with previous research, coercive control and psychological control showed positive associations with children's overt and relational aggression, which varied by parent-child gender. The significant indirect effects of interparental conflict styles showed that paternal overt conflict was positively related to boys' aggression mediating through paternal coercive control and that maternal covert conflict was positively related to boys' aggression mediating through psychological control. Discussions regarding parent-child gender moderations and implications of the findings in the Chinese cultural context are provided.

Childhood aggression has gained great attention because of its deleterious effects on children's adjustment and developmental trajectories (Coie & Dodge, 1998). Interparental conflict and parenting behaviors have been

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Address correspondence to Yan Li, Ph.D., Department of Psychology, DePaul University, 2219 North Kenmore Avenue, Chicago, IL 60614. Phone: (773) 325-4098. Fax: (773) 325-7888. E-mail: yli34@depaul.edu.

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identified as important familial predictors of child overt aggression (Cummings, Goeke-Morey, & Papp, 2004; Marcus, Lindahl, & Malik, 2001). More recent research has expanded the construct of child aggression to include more covert and subtle forms of aggression, such as relational aggression (e.g., social manipulation, malicious gossip) (Crick & Grotpeter, 1995; for a review, see Archer & Coyne, 2005). Recent research suggests that child relational aggression is subject to the influence of interparental conflict and parenting behaviors (Casas et al., 2006; Nelson, Hart, Yang, Olsen, & Jin, 2006; Underwood, Beron, Gentsch, Galperin, & Risser, 2008).

An important aspect of child socialization is the cultural context (Chen & French, 2008). Cultural context may affect how aggressive behaviors are exhibited and socialized. There is a dearth of knowledge about the familial correlates of child aggression, particularly relational aggression, in non-Western cultures (Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998). Understanding aggression among Chinese children would thus provide useful information regarding how familial systems contribute to the development of childhood aggression in a collectivistic culture and enrich our understanding of socialization in diverse contexts. Although previous research has revealed some important familial factors relating to overt aggression among Chinese children (Chang, Lansford, Schwartz, & Farver, 2004; Chen, Wang, Chen, & Liu, 2002), much research is needed to examine relational aggression and its related familial factors (e.g., interparental conflict) among Chinese children.

The present research draws on the family systems perspective (Cox & Paley, 1997; Parke & Buriel, 1998) to investigate the direct and indirect relations between interparental conflict and overt and relational aggression among Chinese children. In particular, this study incorporates the findings of interparental conflict research by including both overt and covert conflict styles and examines their relations with different forms of child aggression. Considering the types of aggressive exchanges involved in interparental conflict may help inform our understanding of the familial factors related to different forms of child aggression. Guided by the spill-over hypothesis (Erel & Burman, 1995), we are particularly interested in investigating how overt and covert interparental conflicts impact parental control and warmth, which, in turn, are hypothesized to relate to child aggression. The examination of these indirect effects on relational aggression is especially needed given that relatively limited information is available regarding the familial origins of child relational aggression. As suggested by the literature (Davies & Lindsay, 2001; Snyder, 1998), this study takes into consideration the gender variations in the links between interparental conflict and child aggression.

### *Interparental Conflict and Child Aggression*

Interparental conflict has been recognized as a strong factor relating to children's adjustment difficulties, such as externalizing and internalizing problems (Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006; Erel & Burman, 1995; Grych & Fincham, 1990; Krishnakumar & Buehler, 2000). Interparental conflict has been positively related to children's overt aggression at home and at school (Marcus et al., 2001). A few studies have also extended this investigation to relational aggression. Specifically, a positive association has been found between maternal negative conflict strategies (combined verbal and physical aggression, stonewalling, and triangulation) and 9-year-old girls' social and physical aggression (Underwood et al., 2008). Marital conflict (e.g., arguing, verbal hostility, physical abuse) has also been positively related to Russian preschool boys' relational and physical aggression (Hart et al., 1998).

Several theories have been proposed to account for these associations. According to the social learning theory (Bandura, 1973), children may directly learn to behave aggressively through observing the aggression their parents display during interparental conflict. Other theories aim to account for the mechanisms that explain the indirect associations between interparental conflict and child adjustment difficulties. In particular, the family systems perspective posits that interparental conflict may relate to child adjustment indirectly through the disruption of the parent-child relationship and parenting behaviors (Erel & Burman, 1995; Krishnakumar & Buehler, 2000). The cognitive-contextual framework (Grych & Fincham, 1990) emphasizes that children's perceptions and attributions of interparental conflict and the contextual factors may affect child adjustment. The emotional security hypothesis posits that interparental conflict may relate to child aggression through harming children's well-being and emotional regulation (Cummings et al., 2006).

Depending on the types of aggressive strategies that parents use to resolve problems, interparental conflict can be classified as either overt or covert (Buehler et al., 1998). *Overt interparental conflict* involves hostile behaviors and affect that indicate direct manifestations of negativity between parents, such as belligerence, insulting, and hitting. *Covert interparental conflict*, on the other hand, involves hostile behaviors and emotions that reflect indirect manifestations of interparental conflict, including triangulating children (e.g., allying with the child, scapegoating the child) and global covert behaviors (e.g., withdrawal of love or affection, unspoken tension; Buehler et al., 1998). By their indirect nature, the covert interparental conflict strategies involve relational aggression that a parent uses

against the other parent. Although more research has focused on the overt conflict style, increasing attention is being given to the effect of covert conflict on youth adjustment (Bradford et al., 2004).

The distinction between overt and covert interparental conflict styles may be especially meaningful when examining their direct and indirect effects on the overt and relational aggression of children. According to social learning theory (Bandura, 1973), children seeing different types of aggression manifested during interparental conflict may learn to use the observed overt and relational aggression in the peer context. Research has shown that, when witnessing marital conflict, children show immediate aggressivity, which predicts later externalizing symptoms (Cummings et al., 2004). Covert interparental conflict may be relevant to children's relational aggression in that children may observe and experience relationally aggressive strategies that parents use in interparental relationships. Thus, a positive direct association between covert interparental conflict and child relational aggression may be observed. Although these direct associations are plausible, theories that incorporate multiple familial subsystems (e.g., interparental subsystem, parent-child subsystem) may be more explanatory of the impact of interparental conflict on children (Cox & Paley, 1997; Parke & Buriel, 1998). Drawing on the family systems perspective, overt and covert interparental conflict styles may relate positively to both forms of child aggression through increased use of harsh parenting behaviors, such as coercive control and psychological control, and decreased warmth. Limited research has investigated these potential associations for covert marital conflict. Only one published study has examined the association between covert conflict as a separate construct (labeled as marital exclusion that included ignoring, giving the cold shoulder, and withdrawing affection) and relational aggression among Russian preschoolers, but no significant associations were found (Hart et al., 1998). Further investigation regarding the association between covert interparental conflict and children's overt and relational aggression is thus warranted.

Research on interparental conflict and child aggression among Chinese children is limited. However, the available studies show detrimental effects of interparental conflict and marital discord on Chinese children that are similar to those found among Western samples. Low marital quality among Chinese parents has been related to low-quality parent-child relationships (Shek, 2000). Additionally, Chinese children encounter adjustment difficulties when parents have conflict. For instance, interparental conflict has been linked to internalizing behaviors among Chinese children, such as depression (Yu & Seligman, 2002). Furthermore, interparental conflict serves as a contextual factor that influences other child adjustment associations. It

has been found to contribute to the longitudinal linkage between academic performance and depression among Chinese elementary school children (Chen, Rubin, & Li, 1995). In addition, low marital quality has been linked to Chinese children's externalizing behaviors (Chang et al., 2004). Specifically, Chang and colleagues (2004) found that low marital quality reported by mothers was associated with Chinese children's (aged 9–12 years) externalizing behaviors assessed by peer nominations and teacher ratings. In the same study, harsh parenting as reported by mothers also mediated the association between low marital quality and children's externalizing behaviors.

In the Chinese culture, harmonious relationships are valued (Bond & Wang, 1983). To maintain harmonious relationships, subtle, avoidant, and indirect approaches of conflict resolution are preferred (Sue, 1981; Trubisky, Ting-Toomey, & Lin, 1991). Such a general conflict-solving approach may be manifested in the familial context as parental use of covert interparental conflict style and psychological control. These constructs may be especially relevant to investigate the familial factors contributing to aggression among Chinese children. In a study where interparental conflict was examined, both overt and covert interparental conflict positively related to Chinese adolescents' adjustment difficulties (e.g., depression, anti-social behaviors; Bradford et al., 2004). Bradford et al.'s (2004) research also showed that the effect of interparental conflict was indirect via parental psychological control and behavioral control. Nevertheless, little is known regarding how Chinese children's aggression, particularly relational aggression, is related to different types of conflict styles.

### *Parenting Behaviors and Child Aggression*

Previous research has shown that authoritarian parenting style, as well as harsh and coercive parenting behaviors, are positively linked to children's overt aggression, whereas authoritative parenting style, as well as parental warmth and responsiveness, negatively relate to overt aggression (for reviews, see Coie & Dodge, 1998; Rubin, Stewart, & Chen, 1995). Recent research has also found positive associations between relational aggression and authoritarian parenting (Sandstrom, 2007; Underwood, Beron, & Rosen, 2009), as well as coercive control and psychological control (Casas et al., 2006; Hart et al., 1998; Nelson & Crick, 2002). With regard to parenting behaviors, Nelson and Crick (2002) found that both coercive and psychological control were linked to third graders' relational and physical aggression, with the associations varying by parent-child gender. In a younger sample, Casas et al. (2006) found that psychological control

behaviors were related to preschoolers' relational and physical aggression. Similarly, parental coercion and psychological control have also been linked to Russian preschoolers' overt and relational aggression (Hart et al., 1998).

Consistent with the findings in the United States, research on Chinese children shows a positive relation between coercive control (e.g., physical punishment, verbal hostility) and children's overt aggression (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Chen et al., 2002; Lansford et al., 2005). Chang and colleagues (2003) found that harsh parenting positively related to physical aggression and bullying among kindergarten children. Chen and colleagues' (2002) 2-year longitudinal study shows that parental power assertion positively predicted physical aggression among Chinese toddlers 2 years later. However, much less is known regarding which parenting behaviors are associated with relational aggression among Chinese children. A recent study has revealed positive links between coercive/psychological control and relational aggression among younger Chinese children (Nelson et al., 2006). Parental physical coercion was found to be more associated with preschool boys' overt and relational aggression, whereas psychological control was more related to girls' aggression.

To date, we know little about parenting behaviors beyond coercive control and psychological control that may relate to Chinese children's relational aggression. In particular, parenting behaviors that have shown a positive effect on children's development have received little attention. Therefore, this study extends previous research by including parental warmth. Parental warmth reflects parents' accepting, nurturant, and supportive attitudes and behaviors. Consistent with findings in the United States, paternal warmth has been positively linked to well adjustment and negatively related to overt aggression among Chinese children (Chen, Liu, & Li, 2000; Chen et al., 2002). Parental warmth may promote positive perceptions about social relations and emotional regulations and thus may inhibit children's use of aggression.

### *Interparental Conflict, Parenting Behaviors, and Child Aggression*

Drawing on the family systems perspective, interparental conflict may not only have direct effects on children, but may also indirectly link to child aggression via parenting behaviors. Two major hypotheses have been proposed to explain the indirect effect: the spillover hypothesis and the compensatory hypothesis (Erel & Burman, 1995). The spillover hypothesis predicts that interparental conflict relates to low-quality parent-child relationships as well as to harsh and insensitive parenting, such as increased parental negativity/

hostility, and decreased parental warmth/acceptance. As reviewed earlier, recent research also shows that interparental conflict positively relates to psychological control, which, in turn, relates to child adjustment difficulties (Bradford et al., 2004). In contrast, the compensatory hypothesis posits that parents in a poor marital relationship may turn to their children for emotional support, thereby strengthening their parent-child relationship. Although some support was found for the compensatory hypothesis, stronger support was found for the spillover hypothesis (Krishnakumar & Buehler, 2000).

In the present study, we endorse the spillover hypothesis and propose that interparental conflict may relate to child aggression through the increased use of coercive control and psychological control and decreased parental warmth. Furthermore, we propose that the spillover effect on parental control may exhibit *domain* specificity; that is, overt interparental conflict may be more strongly related to coercive control, whereas covert interparental conflict may be more strongly related to psychological control. As reviewed earlier, both overt interparental conflict and coercive control comprise an overtly aggressive orientation toward handling familial issues. Similarly, both covert interparental conflict and psychological control involve a parent's relationally aggressive orientation toward dealing with familial issues. The spillover effects may be stronger within each of these domains. Nevertheless, it should be acknowledged that parents may use both interparental conflict styles and both types of parental control. Therefore, to examine the domain-specific spillover effect, it becomes necessary to control for the associations between the interparental conflict styles and parental control behaviors.

### *Moderating Effect of Parent and Child Gender*

Interparental conflict may impact boys' and girls' adjustment differently (Snyder, 1998). Two theories have been proposed to account for the moderating effect of child gender: the male vulnerability model and the differential reactivity model (Davies & Lindsay, 2001). The male vulnerability model posits that boys are at higher risk of experiencing the negative impact of interpersonal conflict than girls. The differential reactivity model emphasizes that boys and girls experience comparable distress, but manifest maladjustment in different ways, such that boys exhibit more aggression and externalizing behaviors, whereas girls experience more internalizing symptoms. Substantial research supports the male vulnerability model; however, findings in the literature are somewhat inconsistent (Davies & Lindsay, 2001). Given that this research focuses on aggressive behaviors, the male vulnerability model may suggest that Chinese boys are more likely to develop aggression when



encountering interparental conflict either directly or indirectly through parenting behaviors. Hypotheses accounting for the moderations of both parent and child gender have also been proposed (Snyder, 1998). The same-sex modeling hypothesis predicts that children identify with the same-sex parent and are more likely to imitate that parent's behavior. Other evidence seems to support the opposite-sex pathway hypothesis, positing that children are more likely to react to the opposite-sex parent's conflict behaviors.

Little is known about maternal vs. paternal roles in the linkages between familial factors, such as interparental conflict and parenting behaviors, and Chinese children's aggression. The few studies involving interparental conflict focus primarily on maternal reports (e.g., Chang et al., 2004). With regard to parenting behaviors, previous research found parental role differences (Chen et al., 2000). Specifically, Chinese fathers were reported to use more control than mothers and also more with boys than girls, whereas Chinese fathers and mothers were equally warm and indulgent with both boys and girls. Despite these reported parenting differences, it is not clear how maternal and paternal control and warmth relate differently to child aggression. Boys and girls may respond to maternal and paternal coercive control differently (Deater-Deckard & Dodge, 1997). A few studies suggest that paternal warmth is negatively related to children's overt aggression (Chen et al., 2000, 2002). However, how interparental and parenting factors function as subsystems to influence child aggression accounting for both parent gender and child gender remains largely unknown in the Chinese cultural context and warrants investigation. Although, according to the Western literature, the patterns of gender moderations are often complex and inconsistent (Davies & Lindsay, 2001), the current study acknowledges the potential gender moderations by examining associations by parent and child gender.

### *The Present Study*

This study examines how overt and covert interparental conflict styles relate to Chinese children's overt and relational aggression directly and indirectly via parental control and warmth. We hypothesize that child overt and relational aggression will positively relate to both overt and covert interparental conflict. Direct associations between overt conflict and child overt aggression and between covert conflict and child relational aggression may be observed due to observational learning (Bandura, 1973). However, given that other explanatory mechanisms (e.g., spillover effects on parenting behaviors) may play a considerable role, these associations may be overridden by other indirect associations. We expect that parental coercive control



and psychological control will positively relate to Chinese children's overt and relational aggression. Based on previous findings (Nelson et al., 2006), these two types of child aggression are expected to relate similarly to coercive/psychological control. In contrast, parental warmth is expected to negatively relate to child overt and relational aggression.

Drawing on the family systems perspective, we expect that interparental conflict will positively relate to coercive and psychological control, which, in turn, positively relate to child aggression. Stronger associations may be observed between overt interparental conflict and coercive control and between covert interparental conflict and psychological control due to a possible parental preference for using the same type of aggressive strategies (i.e., overtly or relationally aggressive strategies) in dealing with family issues. In contrast, both types of interparental conflict will negatively relate to parental warmth. Considering the inconsistent findings reported previously in the Western literature (Davies & Lindsay, 2001) and the limited information about Chinese children, the investigation of the moderating effects of parent and child gender is exploratory. However, as suggested by the male vulnerability model, we cautiously predict that interparental conflict will be more likely to relate to boys' aggression than that of girls.

## Method

### *Participants*

Participants were children ( $n = 671$ ; 364 girls), their mothers ( $n = 670$ ), and their fathers ( $n = 570$ ) recruited from the third, fourth, and fifth grades of two elementary schools in Beijing, China. The average age of the children was about 10 years (mean = 124.73 months,  $SD = 10.41$ ). The average ages of the mothers and fathers were 37.79 years ( $SD = 2.99$ ) and 40.04 years ( $SD = 3.56$ ), respectively. On average, mothers received 13.50 years ( $SD = 3.18$ ) of education and fathers 13.67 years ( $SD = 3.46$ ). That is, both parties had some post-high school education, such as a college education or technical training after high school. Most children came from dual-parent families (96.3%). The average length of marriage in these families was 13.16 years ( $SD = 2.41$ ). Only children (i.e., children without siblings) constituted 96.8% of the sample.

### *Measures and Procedure*

Letters sent home with the children described the study and invited the participation of both the children and their parents. The study was explained at

school to the children, and those with written parental consent who wished to participate signed an assent form. The participation rate was 75.22%, 75.11%, and 63.90% for children, mothers, and fathers, respectively. Children completed a small packet of questionnaires in one school session. Nonparticipating children had the choice of playing outside the classroom or doing their homework in the classroom. Participating mothers and fathers independently completed a packet of questionnaires at home. Their questionnaires were then sealed in envelopes and brought to school by their children. All measures were translated into Chinese by using the translation and back-translation technique. The reliability of the measures was examined by using the standardized factor loadings of the items in the multigroup (by boys and girls) confirmatory factor analyses (CFAs) for mothers and fathers. Items were used as indicators of a construct if they demonstrated adequate reliability (standardized factor loadings of  $>.40$ ) across mothers and fathers of boys and girls (i.e., mother-son/daughter dyads, father-son/daughter dyads) in the CFA models.

*Overt and relational aggression.* Children's overt and relational aggression was assessed with the overt and relational subscales of the Children's Social Behavior Scale (CSBS; Crick & Grotpeter, 1995). Children were asked to name three classmates for each item. There were four overt aggression items (e.g., "Hits, pushes others") and the three relational aggression items (e.g., "When mad, gets even by keeping the person from being in their group of friends"). These items demonstrated adequate reliability for both boys and girls in the CFA models, with the standardized factor loadings ranging from .57 to .96.

*Overt interparental conflict.* The physical and verbal aggression subscales of the Conflict and Problem-Solving Scales (CPSS; Kerig, 1996) were used to assess parents' overt interparental conflict (e.g., "Push, pull, shove, grab, handle partner roughly" or "Name-calling, cursing, insulting"). Mothers and fathers were asked to report how often they used each strategy on a 4-point Likert-type scale (0 = *never* to 3 = *often*). Five items showed adequate reliability for both mothers and fathers in the two multigroup CFA models and were used as indicators of the overt interparental conflict construct (standardized factor loadings ranging from .69 to .92).

*Covert interparental conflict.* Covert conflict was measured by the Covert Conflict Styles (Buehler et al., 1998) and the stalemate subscale of CPSS (Kerig, 1996) to assess the triangulation dimension (e.g., "Try to get the child to side with one of you") and the global covert behaviors dimension (e.g., "Withdraw love or affection"), respectively. Mothers and fathers independently rated their use of each strategy on a 5-point Likert scale (1 = *never* to 5 = *always*) on the Covert Conflict Styles and a 4-point

Likert-type scale (0 = *never* to 3 = *often*) on the CPSS. Four items in the Covert Conflict Styles and one item from the stalemate subscale of CPSS showed adequate standardized factor loadings (ranging from .49 to .86) for mothers and fathers of boys and girls and thus were used as indicators of the covert interparental conflict construct. A separate model comparison revealed that overt conflict and covert conflict were two distinguishable constructs (mothers:  $\chi^2_{\text{diff}}[1] = 54.90, p < .001$ ; fathers:  $\chi^2_{\text{diff}}[1] = 38.71, p < .001$ ). Therefore, they were retained in the models in order to examine their unique associations.

*Parental coercive control and warmth.* The warmth and coercive control subscales of the Parenting Practice Questionnaire (PPQ) were used (Robinson, Mandleco, Olsen, & Hart, 1995). The PPQ has been used among Chinese children and demonstrated good reliability (Nelson et al., 2006). A sample item for the warmth subscale is "I give comfort and understanding when my child is upset" and, for the coercive control subscale, "I spank my child when he/she is disobedient." Mothers and fathers reported the frequency of their use of each parenting behavior on a 5-point Likert-type scale (1 = *never* to 5 = *always*). The six items for each construct showed adequate standardized factor loadings in both multigroup CFA models (ranging from .47 to .89).

*Psychological control.* The Psychological Control measure (Barber, 1996; Olsen et al., 2002), which has been validated among Chinese parents (Nelson et al., 2006), was used (e.g., "I make our child feel guilty when our child does not meet our expectations") in the current study. Parents rated how often they used the psychological control behaviors on a 5-point Likert scale (1 = *never* to 5 = *always*). Five items with adequate standardized factor loadings across all parent-child gender (ranging from .57 to .74) were used as indicators of psychological control.

### *Analytic Strategies*

To allow the test of associations by parent and child gender, multigroup (by boys and girls) CFA and structural models were conducted for maternal and paternal variables separately by using Mplus (version 5.0). Measurement invariance across the boy and girl groups, or at least partial invariance (Byrne, Shavelson, & Muthén, 1989), was obtained to ensure that the constructs were unbiased for boys and girls in each parent model and to descriptively compare the standardized path coefficients between boys and girls. Both the direct and indirect paths through parenting behaviors were estimated in the structural models, with invariant factor loadings

constrained across child gender. To examine the indirect effects of interparental conflict, the Sobel tests were conducted (Sobel, 1986). Considering that there is a growing consensus on examining indirect effects by using bootstrapping analysis to account for nonnormality issues in the sampling distribution, the 95% bias-corrected bootstrap confidence intervals (95% BC CIs) were obtained for the indirect effects (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008; Shrout & Bolger, 2002). A 95% BC CI that does not contain zero indicates a significant indirect effect. Grade was controlled as a covariate in all models in order to control for the possible effect of the grade level. The ordinal categorical analysis with WLSMV (robust weighted least square parameter estimation with adjusted mean and variance) was used to account for the limited scale options (e.g., a 3-point scale) for some measures. The full-information maximum likelihood was used to account for missing data. Because chi-square values can be artificially inflated by many factors, such as moderate to large sample sizes and parameter constraints (Hu & Bentler, 1995), the comparative fit index (CFI), the Tucker-Lewis coefficient (TLI), and the root mean square error of approximation (RMSEA) were primarily used to interpret the model fit. The model fit is considered acceptable when CFI and TLI are greater than .90 and RMSEA is less than .08 (Kline, 2005).

## Results

### *The Measurement Model*

The parental constructs and child aggression constructs were examined for all four parent-child gender pairs (i.e., mother-son/daughter, father-son/daughter) in two multigroup (boys and girls) CFA models for mothers and fathers, respectively. Each model contained the overt and covert conflict styles, the three parenting behaviors, and two aggression outcomes for boys and girls. Partial invariance was found across child gender (mothers:  $\chi^2_{\text{diff}}[20] = 28.49, p = .10$ ; fathers:  $\chi^2_{\text{diff}}[21] = 21.63, p = .42$ ). All of the factor loadings were invariant across boys and girls in both models except for two overt aggression items. The invariant items were constrained to be equal across child gender in the measurement models and structural models. The model fit for the CFA models was adequate (maternal CFA:  $\chi^2[211] = 415.53, p < .001$ , CFI = .93, TLI = .95, and RMSEA = .05; paternal CFA:  $\chi^2[191] = 349.00, p < .001$ , CFI = .94, TLI = .96, and RMSEA = .05). The significant and adequate standardized factor loadings for items as reported in the Measures and Procedure section

**Table 1.** Means and Standard Deviations of Parental Variables for Mothers and Fathers by Child Gender

	Mother				Father			
	Boy		Girl		Boy		Girl	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Overt interparental conflict	0.34	0.50	0.33	0.50	0.34	0.45	0.36	0.55
Covert interparental conflict	1.28	0.51	1.29	0.58	1.19	0.52	1.23	0.57
Coercive control	2.14	0.62	2.04	0.60	2.09	0.69	1.87	0.62
Psychological control	2.10	0.67	2.17	0.76	2.08	0.76	2.00	0.71
Warmth	3.91	0.67	4.03	0.71	3.71	0.77	3.81	0.70

indicate good reliability of the measures. Table 1 shows the descriptive statistics of parental variables by parent and child gender. The intercorrelations among interparental conflict styles and parenting constructs were generally in the hypothesized directions and demonstrated adequate construct validity (see Tables 2 and 3).

After adequate measurement models were established, the associations among constructs were examined by using the correlations of the latent constructs (see Tables 2 and 3) and the structural paths in the multigroup structural models (see Figures 1 and 2). The structural model fit the data adequately (maternal model:  $\chi^2[211] = 414.39$ ,  $p < .001$ , CFI = .93, TLI = .95, and RMSEA = .05; paternal model:  $\chi^2[191] = 348.75$ ,  $p < .001$ , CFI = .94, TLI = .96, and RMSEA = .05).

### *Parenting Behaviors and Children's Aggression*

Consistent with our hypotheses, both maternal and paternal coercive control and maternal psychological control were positively correlated with boys' overt and relational aggression, whereas paternal coercive control and psychological control were positively correlated with girls' relational aggression (see Tables 2 and 3). Contrary to predictions, paternal warmth was positively correlated with girls' relational aggression.

To account for the intercorrelations among parenting behaviors and examine the unique association of each parenting behavior with child aggression, all parenting behaviors were controlled for one another in the structural models (see Figures 1 and 2). Accounting for other parenting behaviors, maternal psychological control and paternal coercive control were still significantly and positively related to boys' overt and relational aggression but not to girls' aggression. Model comparisons for each

**Table 2.** Estimated Latent Variable Correlations Among the Aggression and Maternal Constructs

	POA	PRA	Overt IPC	Covert IPC	Coercive control	Psychological control	Warmth	Grade
POA	—	.85***	.24***	.20**	.29***	.35***	-.13	.00
PRA	.52***	—	.21**	.16*	.22***	.32***	-.06	-.03
Overt IPC	-.22**	-.08	—	.70***	.46***	.49***	-.17*	.00
Covert IPC	-.13	-.05	.72***	—	.45***	.60***	-.35***	.06
Coercive control	.07	.05	.30***	.28***	—	.70***	-.36***	-.02
Psychological control	.08	-.03	.34***	.44***	.67***	—	-.29***	.02
Warmth	-.02	.03	-.24**	-.22**	-.30***	-.25***	—	-.17**
Grade	-.02	.00	.08	.04	-.11*	.10	-.09	—

*Note.* The correlations for boys and girls are above and below the diagonal, respectively. PRA = peer-nominated relational aggression; POA = peer-nominated overt aggression; IPC = interparental conflict.

\*\*\**p* < .001. \*\**p* < .01. \**p* < .05.

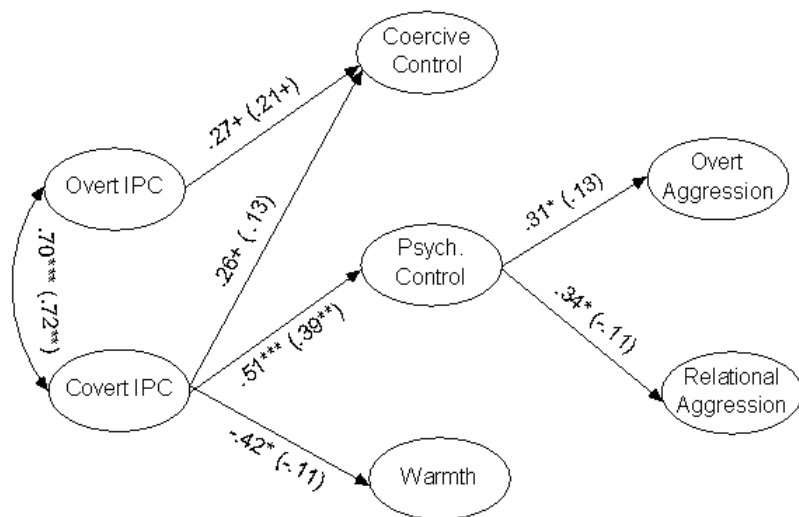
**Table 3.** Estimated Latent Construct Correlations Among the Child Aggression and Paternal Constructs

	POA	PRA	Overt IPC	Covert IPC	Coercive control	Psychological control	Warmth	Grade
POA	—	.85***	.33***	.14	.35***	.14	-.08	.00
PRA	.53***	—	.28**	-.01	.30***	.07	.10	-.03
Overt IPC	-.12	.01	—	.70***	.40***	.30**	-.25*	.13
Covert IPC	-.04	.06	.83***	—	.39***	.52***	-.25**	.00
Coercive control	.09	.15*	.32***	.43***	—	.66***	-.14	-.16*
Psychological control	.09	.24***	.39***	.53***	.72***	—	-.01	-.01
Warmth	.06	.20**	-.20*	-.39***	-.22**	-.19**	—	-.14
Grade	-.03	.00	.00	.00	.10	.10	.01	—

*Note.* The correlations for boys and girls are above and below the diagonal, respectively. PRA = peer-nominated relational aggression; POA = peer-nominated overt aggression; IPC = interparental conflict.

\*\*\*p < .001. \*\*p < .01. \*p < .05.



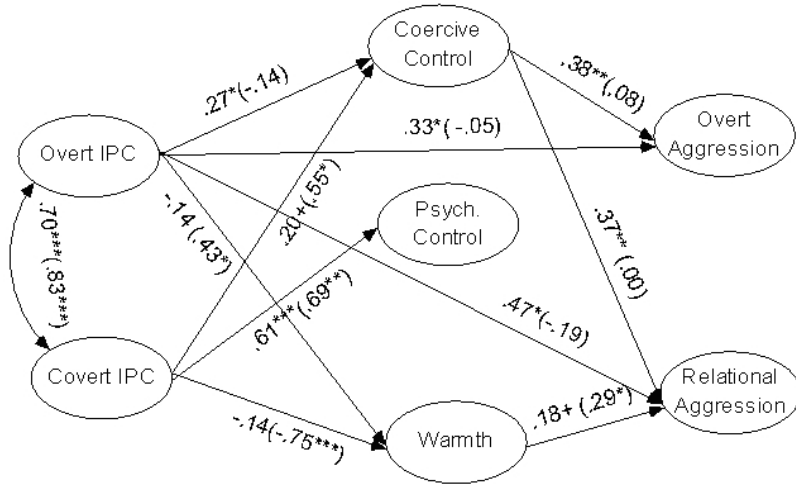


**Figure 1.** Standardized path coefficients for the latent maternal structural model (IPC = interparental conflict; Psych. Control = psychological control). The numbers outside and inside the parentheses represent standardized path coefficients for boys and girls, respectively. To facilitate reading, nonsignificant paths for both boys and girls, the disturbances correlations, and the path coefficients for the grade covariate were omitted. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , +  $p < .10$ .

significant path from parenting behaviors to child aggression showed that the differences in the path coefficients between boys and girls were significant ( $ps < .05$ ). Similar to the correlation results, paternal warmth significantly and positively related to girls' relational aggression and marginally significantly related to boys' relational aggression.

### *Interparental Conflict and Parenting Behaviors*

Consistent with our hypotheses, both overt and covert conflict styles were positively correlated with coercive and psychological control, but negatively correlated with parental warmth (see Tables 2 and 3). To account for the correlation between overt and covert interparental conflict styles and examine their unique associations with parenting behaviors, these two interparental conflict styles were controlled for each other in the structural models. Results (see Figures 1 and 2) show that paternal use of overt aggression in interparental conflict significantly and positively related to paternal use of coercive control with boys but not with girls. Both maternal and paternal covert



**Figure 2.** Standardized path coefficients for the latent paternal structural model (IPC = interparental conflict; Psych. Control = psychological control). The numbers outside and inside the parentheses represent standardized path coefficients for boys and girls, respectively. To facilitate reading, nonsignificant paths for both boys and girls, the disturbances correlations, and the path coefficients for the grade covariate were omitted. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , +  $p < .10$ .

interparental conflict strongly and positively related to parental psychological control for all parent-child gender dyads. Furthermore, fathers' covert interparental conflict style also positively related to paternal coercive control with girls. Additionally, the associations between maternal overt conflict style and maternal coercive control with boys and girls were marginally significant, as well as the relations between covert conflict style and coercive control in both mothers and fathers of boys. As expected, covert interparental conflict style showed negative associations with parental warmth but for cross-gender dyads (i.e., mother-son and father-daughter dyads). Unexpectedly, paternal overt conflict was positively related to paternal warmth with daughters.

### *Direct and Indirect Effects of Interparental Conflict Styles on Children's Aggression*

To examine how interparental conflict related to child aggression, both direct and indirect paths were examined. Fathers' use of overt aggression during interparental conflict directly related to boys' overt and relational

aggression but not to that of girls (see Figure 2). Model comparisons showed that these child gender differences were significant ( $ps < .05$ ). With regard to the indirect effects, the Sobel tests and bootstrapping analyses showed significant results, but only for boys. Specifically, mothers' use of covert interparental conflict style was positively related to their use of psychological control, which, in turn, related to their sons' overt and relational aggression (overt aggression: indirect effect = .21,  $p < .05$ , 95% BC CI: .123–.875; relational aggression: indirect effect = .21,  $p < .05$ , 95% BC CI: .102–.665). With regard to paternal conflict styles, fathers' overt conflict style positively related to their use of coercive control with their sons, which, in turn, positively linked to their sons' overt and relational aggression (overt aggression: indirect effect = .09,  $p < .05$ , 95% BC CI: 0.064–0.343; relational: indirect effect = .08,  $p < .05$ , 95% BC CI: 0.040–0.188).

## Discussion

The current research contributes to our understanding of familial factors related to childhood aggression, especially relational aggression, in the Chinese cultural context. Drawing from the family systems perspective (Cox & Paley, 1997; Parke & Buriel, 1998), this study provides a separate examination of overt and covert interparental conflict styles, which demonstrated unique indirect effects on child aggression. This study also contributes to the body of knowledge regarding familial influences for Chinese children's aggression by taking into account both parent and child gender.

### *Interparental Conflict and Parenting Behaviors*

Supporting the spillover hypothesis (Erel & Burman, 1995; Krishnakumar & Buehler, 2000), this study showed that parents who use overt conflict-solving styles are also likely to use coercive control and psychological control. Consistent with the findings described in Western literature, Chinese parents who use aggressive conflict-solving strategies within interparental relationships also show increased use of harsh parenting. Furthermore, the unique associations in the structural results also suggest that the spillover effects seem to be specific to behavioral domain. The overt conflict was particularly linked to parental coercive control as compared to psychological control, the latter of which was strongly linked to covert conflict style. As reviewed previously, although the function and purpose of the strategies vary, overtly aggressive strategies are typically exhibited in overt conflict style as well as in coercive control with children, whereas relationally aggressive strategies are exhibited in covert conflict style and psychological

control. The domain-specific links may indicate that parents who resort to one type of conflict strategy during interparental conflict are likely to use the same type of conflict strategy in other familial relationships. Additionally, the traditional Chinese culture values social harmony, especially in the family context (Bond & Wang, 1983), and emphasizes using a more indirect approach to solve conflict (Trubisky et al., 1991). Chinese parents who endorse such values may be more likely to use more covert strategies in the interparental conflict, such as siding with the child, and in disciplining their child. The cultural-contextual considerations and the current findings both suggest the importance of separately examining covert conflict style in the research of interparental conflict among Chinese children.

Moreover, the results of this study show that parents who use more covert interparental conflict styles are less warm toward their children, especially their opposite-sex children. Parents experiencing interparental conflict may identify the opposite-sex child with their spouse and exhibit less warmth to the child. Interestingly, this study also found that, instead of showing more coercive control, paternal overt conflict positively related to their warmth toward daughters, which seems to support the compensatory hypothesis (Erel & Burman, 1995). Nevertheless, given that few similar paths were found, it is difficult to conclude that the latter finding is strong evidence for the compensatory hypothesis. More research is needed to examine this hypothesis.

### *Parenting Behaviors and Child Aggression*

Consistent with findings from the United States, China, and other countries (Casas et al., 2006; Chang et al., 2003; Chen et al., 2002; Hart et al., 1998; Nelson & Crick, 2002; Nelson et al., 2006), Chinese parents' use of coercive control and psychological control were positively related to children's use of overt and relational aggression in the peer context. Paternal coercive control showed a positive association with boys' overt and relational aggression. This echoes previous research findings that physical coercion was more associated with Chinese preschool boys' overt and relational aggression (Nelson et al., 2006). These findings partly support the argument that the effects of coercive parenting on children's aggression, especially overt aggression, are most pronounced for same-sex parent-child dyads—in this case, fathers and sons (Deater-Deckard & Dodge, 1997; Snyder, 1998). However, the same effect was not found in mother-daughter dyads. Other mechanisms may exist to explain the associations in other parent-child dyads.

The positive association between maternal psychological control and boys' overt and relational aggression suggests that Chinese boys may learn

to be relationally aggressive in part by observing and/or experiencing psychological control used by their mother. Due to the intrusive nature of psychological control, children may develop difficulties in emotional regulation when they experience parental psychological control and express their anger through aggression in the peer context. Inconsistent with previous findings involving younger Chinese children (Nelson et al., 2006), this study did not find unique associations between parental psychological control and girls' aggression. Although a positive correlation between paternal psychological control and girls' relational aggression was observed, this association failed to remain significant after controlling for other parenting behaviors. Whether the inconsistency is due to age differences between studies is unclear and should be further investigated. However, this finding also suggests that controlling for related parenting behaviors is needed when examining the unique linkages between parenting behaviors and child aggression.

Similar to Chen et al.'s (2000) finding, in this study a negative correlation was found between maternal warmth and boys' overt aggression. However, this negative association failed to remain significant after controlling for other parenting behaviors in the structural model results. Also contrary to our expectations, paternal warmth showed positive associations with children's relational aggression. These findings are contradictory with the finding by Chen et al. (2000) of a negative association between paternal warmth and child overt aggression. One plausible explanation for the current finding is that paternal warmth may boost some aspects of social and cognitive development among girls (e.g., language abilities, social intelligence), which may advance their learning and use of relational aggression. Future research is needed to investigate the facilitating factors of relational aggression that may be related to parental warmth.

### *Interparental Conflict and Aggression*

Supporting the family systems perspective, the current research shows that interparental conflict styles and parenting behaviors work jointly to link to child aggression. Both overt and covert interparental conflict styles were related to children's overt and relational aggression through indirect pathways. Furthermore, these associations varied by parent-child gender. Specifically, paternal overt interparental conflict was positively associated with paternal coercive control and, in turn, related to boys' overt and relational aggression. In contrast, maternal covert interparental conflict was positively associated with maternal psychological control and, in turn,

related to boys' relational aggression. These findings are consistent with findings in the United States and in China that interparental conflict may hinder children's development by increasing harsh and negative parenting (Bradford et al., 2004; Chang et al., 2004; Krishnakumar & Buehler, 2000). Extending previous research on child aggression (Hart et al., 1998), the results of this study suggest that children's relational aggression is associated with both forms of interparental conflict styles and that parental control (both coercive control and psychological control) may serve as a transitive mechanism for these associations. Moreover, the significant indirect effect from covert interparental conflict to relational aggression highlights the importance of including covert interparental conflict in future studies examining child relational aggression.

This study also found that children, especially boys, who witness aggressive behavior used by fathers in interparental conflict are more likely to use overt and relational aggression. As suggested by Cummings and colleagues (2004), witnessing parental aggression increases children's tendency to aggress. However, the linkage between overt conflict and relational aggression also suggests that the social learning theory cannot fully explain the associations. Factors at the intrapersonal level, such as cognitive and emotional reactivity and regulations, may help explain how children regulate their aggressive tendencies and choices of aggressive strategies (Cummings et al., 2006; Grych & Fincham, 1990).

Supporting the male vulnerability model (Davies & Lindsay, 2001), the findings from the current research suggest that Chinese boys are more susceptible to the harmful effect of interparental conflict in terms of developing aggression. Boys who witness parental aggression toward a spouse and/or who are being triangulated in interparental conflict may be more likely to express their distress through anger, aggression, and externalizing behaviors. In contrast, no significant associations were found between interparental conflict and girls' aggression in the structural model results. Instead, the correlation results suggest some negative associations between maternal conflict styles and girls' overt aggression. Previous research showed that Chinese girls generally have a higher level of internalizing problems than do boys, as reported by parents and teachers (Liu et al., 2001). Although this study did not assess internalizing behaviors, Chinese girls might encounter different types of adjustment difficulties, such as internalizing problems (e.g., withdrawal and anxiety), when experiencing interparental conflict, as suggested by the differential reactivity model (Davies & Lindsay, 2001). Future research may include a wider range of adjustment outcomes to fully investigate gender differences in maladjustment related to interparental conflict among Chinese children.

*Limitations and Future Directions*

Several limitations of this study should be noted along with future directions. Although peer nomination is a commonly used and valid methodology to assess aggression, a multi-informant approach to assess child aggression would be more informative. Child aggression reported by different informants may differ substantially, especially for covert forms of aggression (e.g., relational, social, and indirect aggression; Archer, 2004; Putallaz et al., 2007). A combination of methodologies would provide a more robust assessment of children's aggression. Likewise, only self-reports were used to assess both interparental conflict and parenting behaviors, which may be a concern in terms of shared method variance and social desirability. Therefore, it would be useful to also include the spouse report and/or the child report to fully assess interparental conflict and parenting in future studies. Nevertheless, this study employed multiple informants (e.g., mothers, fathers, and children) to examine the associations between parental variables and child aggression and thus provided a valid investigation of these associations.

Furthermore, the associations found in this study should be interpreted with caution because of the cross-sectional design. Causal inference cannot be made regarding the relations among interparental conflict, parenting behaviors, and child aggression. The effects among these factors might be bidirectional; for instance, that child aggression contributes to negative parent-child interactions and/or interparental conflict. Longitudinal studies can be conducted in the future to clarify the direction of influence as well as to investigate the long-term effects of familial factors on children's development of aggressive behaviors. Finally, the elementary school sample used in this study was recruited from Beijing, one of the largest urban cities in mainland China. The findings may not be readily generalizable to children living in rural areas or other socially and politically different Chinese societies (Chen, Wang, Wang, & Chen, 2009). Future studies may include more representative samples to fully examine the associations proposed by the current research. Finally, this study consists mostly of only children, adding a unique dimension to the cultural context. Parents of only children give more attention to their child and hold gender views that are more egalitarian (Tsui & Rich, 2002; Yu, Yu, & Mansfield, 1990). Considering that boys and girls may use different aggressive strategies (Archer, 2004), it may be useful to investigate the implication of changes in gender socialization associated with the one-child policy on Chinese children's aggression development. Additionally, the familial interaction dynamics are likely to differ between families with only children and those with multiple



children. Future research may examine the differences in the familial correlates of child aggression in these two types of families.

In summary, this study contributes to our understanding of familial origins of childhood aggression. The knowledge regarding relational aggression gained in this study is a useful addition to the literature. This study highlights the importance of investigating culturally specific parenting behaviors, as well as employing a family systems approach to examine familial factors relating to child aggression in different cultural contexts.

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