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Abstract

Past research has documented the positive association between parental hostility and offspring involvement in intimate partner violence. Researchers, practitioners, and parents typically adopt the standpoint that parental warmth may counter these negative lessons. However, Straus and colleagues argue that parents foster IPV to the extent that they teach their child that verbal and physical aggression are a normal and legitimate component of loving relationships. A strict interpretation of social learning theory would suggest that these lessons are more, not less, likely to occur when parental hostility is interspersed with displays of affection. The present study tests this idea using data from 2,088 undergraduate students from a large university in the Southeast. Consistent with Straus' arguments, findings suggest that, rather than attenuating the negative effects of hostility, supportive interactions seem to amplify the probability that offspring will emulate aggressive behaviors in their own romantic relationships. The same is true for the effects of harsh parenting for women. It seems that the best way parents can avoid contributing to their child's chances of being in a violent dating relationship is to eschew family interaction involving verbal and physical aggression.

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intergenerational transmission of violence, intimate partner violence, harsh parenting

Physical aggression occurs in a substantial proportion of dating, cohabitating, and married relationships (Archer, 2000; Shorey, Cornelius, & Bell, 2008; Straus & Gelles, 1990). Longitudinal studies indicate that partner aggression often begins during courtship and persists following marriage (O'Leary et al., 1989). Estimates of dating violence vary depending on the characteristics of the sample and instrument used. However, studies consistently have shown that between 18% and 45% of high school and college students experience dating violence (Cascardi, Avery-Leaf, O'Leary, & Slep, 1999; Malik, Sorenson, & Aneshensel, 1997; O'Keefe & Treister, 1998; Silverman, Raj, Mucci, & Hathaway, 2001; White & Koss, 1991). Although early research suggested that women were more likely to be the victims of dating violence than men (Bergman, 1992; Roscoe & Kelsey, 1986), a wealth of more recent studies have reported that men and women experience roughly comparable rates of common couple violence (Archer, 2000; Capaldi, Kim, & Shortt, 2007; Moffitt, Caspi, Rutter, & Silva, 2001; Straus, 2009).

Research has investigated a number of factors that might increase the risk of dating violence, but exposure to parental hostility has received the most attention (Black, Sussman, & Unger, 2010; Carr & Van Deusen, 2002; Foshee, Bauman, & Linder, 1999; Hendy et al., 2003; Kwong, Bartholomew, Henderson, & Trinke, 2003; Lewis & Fremouw, 2001; Simons, Burt, & Simons, 2008; Tschann et al., 2009). This pattern is consistent with the most widely accepted explanation for intimate partner violence (IPV): the intergenerational transmission hypothesis. According to this perspective, growing up in a violent family increases an individual's risk of later becoming involved in a physically aggressive romantic relationship (O'Leary, 1988). Research has examined the effects of two types of parental aggression: interparental hostility and hostile parenting. Interparental hostility refers to conflict between parents involving verbal and physical aggression, whereas hostile parenting entails verbally and physically aggressive parenting practices toward offspring. Both of these types of parental hostility have been shown to increase the probability that a child will grow up to engage in dating violence. Furthermore, research has established that childhood exposure to these two types of parental aggression also increase the chances that a young adult will be the victim of dating violence.

Although a number of studies have supported the intergenerational transmission hypothesis, a meta-analysis of these studies indicated that the magnitude of

the association between family of origin violence and subsequent IPV is quite modest (Stith et al., 2000). This may be, at least in part, because researchers have failed to take into account the way that other dimensions of parental behavior, such as parental love and support, may moderate the effects of parental hostility. Interparental violence, for example, sometimes occurs within the context of a cold and rejecting marital relationship whereas, in other instances, it takes place within a marital relationship that is also often warm and supportive (Johnson et al., 2005). Similarly, some hostile parents are rather consistently cold and rejecting whereas others may intersperse their harsh parenting with displays of warmth and support (Maccoby & Martin, 1983, Simons & Conger, 2007). The lessons learned by the child are likely to differ depending on the relational context within which parental hostility is exhibited.

At first glance, one might assume that warmth and support would operate to attenuate the relationship between parents' hostility and dating violence. Most investigations of the intergenerational transmission of violence use a social learning explanation based on imitation and modeling (Bandura, 1979, 1986). Using this perspective, one might conclude that parents who sometimes model warmth and support may counter the negative lessons conveyed by their hostile behavior. To the extent that this is the case, IPV is less likely to be seen as normal if it occurs within a broader context of warmth and support. Although this would seem to be the simple or straightforward understanding of how parental support might moderate parents' hostility, the arguments of Straus and his colleagues might be interpreted as suggesting a very different view.

Straus & Gelles (1990) and Straus & Smith (1990) have argued that parenting behavior, like the marital relationship, teaches children lessons regarding how people treat those they love. Thus, both interparental violence and harsh parenting teach children that it is usual or acceptable for individuals to hit or be hit by those they love (Straus & Gelles, 1990; Straus & Smith, 1990). In other words, children learn that verbal and physical aggression is a normal part of intimate relationships. This belief, in turn, increases the probability that the child will grow up to both perpetrate as well as tolerate being the victim of dating violence.

An implication of Straus' argument may be that parental hostility (whether toward a spouse or child) that occurs within a context of apathy or rejection would provide little information about how to treat those they love. The parent, in such instances, does not appear to have deep feelings of love for the target/victim of his or her hostility. Indeed, a relationship that is consistently hostile or aggressive might be considered a model of a rejecting or distant relationship rather than of an intimate or romantic one. In such cases, the parents may be communicating to their children the lesson that it is alright to

hit those for whom you have little regard. Such information is apt to be perceived as irrelevant for serving as a guide to behavior in romantic relationships. Conversely, if the parent displays hostility within a relational context of warmth and support, he or she might be seen as clearly communicating that aggression is a normal part of a loving intimate relationship. Stated differently, when parents demonstrate warmth and support in addition to hostility, they increase the probability that the child will perceive the relationship as a legitimate model of an intimate relationship. If this is the case, one would expect parental warmth and support to amplify, rather than attenuate, the relationship between parental hostility and dating violence.

In addition to this argument, there is also a second reason for believing that hostility is more likely to affect dating relationships when it occurs within a context of support. A host of studies have shown that imitation is more likely to occur when the observer likes or identifies with the person exhibiting the behavior (Bandura, 1977, 1986). This suggests that parents may increase the influence of their marital and parenting behaviors when they exhibit enough warmth that their children feel a bond or attachment to them. In contrast, children would be less apt to emulate the behavior of parents whom they fear, feel distant from, or disrespect.

Using a sample of roughly 2,000 college students, the present study tests the following hypotheses regarding the effects of parents' marital interaction and parenting practices on dating violence. First, we expect to find that interparental hostility and harsh parenting are related to both perpetrating and being the victim of dating violence. Second, we predict that this deleterious effect of interparental hostility and harsh parenting will be amplified by warmth and support. More specifically, we hypothesize that respondents with parents who are high on both interparental hostility and interparental support are at greater risk for either perpetrating or being the victim of dating violence than those with parents who are high on interparental hostility but low on interparental support. Similarly, we posit that respondents whose parents engage in both harsh and supportive parenting practices will report greater involvement in dating violence, whether as a perpetrator or a victim, than those whose parents display high rates of harsh parenting but low levels warmth and support.

Method

Sample

Data were collected from 2,088 undergraduates (314 men and 1,774 women) enrolled in introductory family studies and sociology courses at a large state

university during the 2007-2008 academic year. After eliminating outliers and cases with missing data, complete data were available for 2,065 (309 men and 1,756 women) subjects. Approximately 90% of the respondents were White with an average age of 19.5 years. The majority of respondents were in their sophomore or junior year of college. In terms of living situation, 48% of the respondents lived off campus, 30% lived in dorms, and 22% lived in fraternity or sorority housing. Seventy-five percent of the respondents indicated that their parents were married to each other at the time of study participation. Median family income was between US\$50,000 and US\$70,000.

Procedure

The study was explained to prospective subjects several days in advance of administering the survey. Students were told that the survey focused on issues associated with dating, sex, and family relationships and that some items were of a personal nature. Participation was voluntary and subjects could discontinue taking the survey at any time if they became uncomfortable with the questions. Pencil and paper surveys were administered during a regular class session and, because of the sensitive nature of some items, completion of the survey was proctored like an exam. The response rate was nearly 100%.

Measures

Questions focused on issues related to the family of origin including parent's marital interactions, parent-child interactions, current and past relationship experiences, and other issues salient to college students. Several of the scales had to be modified in two respects. First, the number of items in the scales had to be reduced. This had to be done to ensure that students would be able to complete the survey within the allotted class period. Second, the time frame asked about was changed for the parenting and marital interaction scales.

Response categories for all of the items were as follows: 4 = *always*, 3 = *fairly often*, 2 = *about half the time*, 1 = *not too often*, and 0 = *never*. For all measures, the items were summed to form a scale. Family of origin items such as parental warmth and hostility were phrased to refer to the respondent's adolescent years as was as interparental warmth and hostility. All items that address IPV perpetration and victimization referred to the past year.

Perpetration of IPV. A seven-item scale adapted from the Conflict Tactics Scale (Straus, 1990) was used to assess this construct. Respondents were asked to report how often they had engaged in the following aggressive acts

with a romantic partner: “shout or yell at him or her,” “insult or swear at him or her,” “call him or her bad names,” “threaten to hit him or her,” “hit, push, shove, or grab him or her,” “hit him or her with an object or throw an object,” and “threaten to use a gun or knife.” High scores on all items indicated aggressive behavior toward the partner. Coefficient alpha for the scale formed by the summed items was .72 for men and .68 for women.

IPV victimization. This construct was assessed using the same items and response categories as those in the perpetration scale except that they were reworded so that respondents reported on whether they had been a victim rather than a perpetrator of each of the seven acts. High scores on these items represented increased victimization. Coefficient alpha for scale was .88 for men and .87 for women.

Interparental interaction. This construct was assessed using items adapted from the harsh and supportive marital interaction scales developed by Conger and Elder (1994). These scales have been used in numerous studies and have been shown to correlate with observational assessments of marital interaction (Conger & Elder, 1994; Cui, Lorenz, Conger, Melby, & Bryant, 2005; Donnellan, Assad, Robins, & Conger, 2007). Thus, interparental hostility was measured using a six-item scale that asked respondents to report how often during their adolescent years that their parents engaged in various hostile behaviors when interacting with each other. The items ask the respondent to indicate how often the parents “got angry with each other,” “criticized each other’s ideas,” “shouted or yelled at each other because they were mad,” “got into a fight/argument,” “insulted or swore at each other,” and “hit, shoved, or grabbed each other.” A higher score indicated a higher level of hostile interparental behavior. Coefficient alpha for the scale was .69 for men and .67 for women. Interparental warmth was assessed using a four-item scale that asked respondents to report how often their parents “listened carefully to each other,” “acted in a loving and affectionate way toward each other,” “laughed about something funny with each other,” and “said I love you to each other.” Higher scores indicated a higher level of interparental warmth. Coefficient alpha for the scale was .82 for men and .86 for women.

Parenting. The behaviors displayed by parents toward the respondent were assessed separately for mothers and fathers using items adapted from instruments developed for the Iowa Youth and Families Project (IYFP; Conger & Elder, 1994; Conger, Elder, Lorenz, Simons, & Whitbeck, 1992). These parenting measures have been shown to have high validity and reliability. For example, analyses from IYFP have shown that parent reports on these instruments correlate with child reports and with observer ratings (Conger et al., 1992; Simons & Johnson, 1996), and they predict various dimensions of

child behavior across a several year period (Simons, Chao, Conger, & Elder, 2004; Simons, Johnson, Conger, & Elder, 1998). Maternal hostility was assessed using a four-item scale that asked respondents to report how often during their adolescent years that their mother shouted or yelled at them, criticized their ideas, called them bad names, or insulted or swore at them. Higher scores indicated a higher level of maternal hostility. Coefficient alpha for the scale was .69 for men and .71 for women. The same items were used to assess paternal hostility. Coefficient alpha for the scale was .78 for men and .79 for women.

Maternal warmth was assessed using a five-item scale that asked respondents to report how often during their adolescent years that their mother listened carefully to their point of view, helped them with something important, acted loving and affectionate toward them, had a good laugh with them about something that was funny, and told them that she or he loves them. Higher scores indicated higher levels of warmth. Coefficient alpha for the scale was .78 for men and .84 for women. The same items were used to assess paternal warmth. Coefficient alpha for this scale was .87 for men and .86 for women.

Analytic Strategy

Two separate sets of regression equations were computed in which perpetration of IPV and victimization served as the dependent variables, respectively. As each dependent variable displayed a strong positive skew, they were transformed using log transformation ($\ln [x + 1]$) to meet the assumption of linearity for ordinary least squares (OLS) regression (Cohen & Cohen, 1983). All independent variables were standardized ($M = 0$ and $SD = 1$) before the interaction terms were calculated. The outliers in the dependent variable were defined by the $1.5 \times IQR$ criterion and were omitted from the final analysis. Some advantages of using standardized scores in the interaction models include making coefficients easier to interpret, reducing multicollinearity, and making the simple slope easier to test (Dawson & Richter, 2006).

For all analyses we used *Mplus* 6.1 (Muthen & Muthen, 2010). Parameters in the hierarchical regression models were examined by using maximum likelihood estimation (MLE) with robust standard errors. We included six models for each dependent variable. The analyses were performed separately for men and women given the possibility that the impact of parental behavior might differ by gender. Independent and moderating variables were entered into the regression model in the following steps: (a) the main effect model, which was used to estimate the effects of the interparental or parenting variables on the dependent variables; (b) the main effect with a moderating

variable, which was used to test our moderating hypotheses; and (c) main effect with moderating and other independent variables, which tested the interaction effects while controlling for all independent variables. Finally, when interaction effects were present, post hoc analyses were conducted using a simple slope test with the pick-a-point approach (Aiken & West, 1991). This procedure identified significant points for interactions between the independent variable and moderator.

Results

Initial Findings

A substantial minority of men and women engaged in the perpetration of various acts of verbal and physical aggression toward a partner. For example, during half or more of their interactions, 31% of men and 21% of women indicated that they shouted or yelled at their partner, 23% of men and 14% of women insulted or swore at their partner, and 20% of men and 9% of women called their partner bad names. Approximately 10% of both men and women reported that they threatened to hit their partner about half the time or more, and 10% of men and roughly 3% of women indicated that they actually hit, push, or grab their partner half the time or more.

Regarding victimization, verbal and physical aggression rates reported were generally higher, suggesting that respondents may have been more willing to report victimization than perpetration. During half or more of their interactions with their partner, nearly 43% of men and women indicated that their partner shouted or yelled at them, 40% of the men and 30% of women have been the victim of insults and swearing, 32% of men and 20% of women reported having been called bad names. Thirteen percent of men and 8% of women reported that they had been hit, pushed, or grabbed about half the time or more while interacting with their partner.

A substantial proportion of respondents also indicated that their parents had engaged in high levels of aggressive behavior. Roughly 30% of both men and women reported that their parents yelled at each other whereas 22% of men and 16% of women indicated that their parents insulted or swore at each at least half the time when they interacted. Seven percent of men and 4% of women indicated that their parents hit, pushed, or grabbed each other at least half the time when interacting with each other. Similarly, the proportion of respondents who reported that their mother and father had engaged in acts of hostile parenting at least half the time varied from 30% for shouted and yelled to 6% for insulted and swore.

The correlations among the study variables are presented in Table 1. As expected, there are substantial correlations among the various measures of

Table 1. Correlation Matrix for Study Variables by Gender

	1	2	3	4	5	6	7	8	M	SD
1. Interparental hostility	—	-.61***	.38***	.38***	-.29***	-.35***	.17***	.16***	6.29	4.59
2. Interparental warmth	-.45***	—	-.25***	-.22***	.41***	.55***	-.07***	-.12***	10.72	3.97
3. Maternal hostility	.38***	-.17***	—	.38***	-.46***	-.22***	.20***	.18***	2.48	2.47
4. Paternal hostility	.36***	-.17***	.50***	—	-.23***	-.37***	.16***	.13***	2.15	2.63
5. Maternal warmth	-.20***	.27***	-.38***	-.23***	—	.42***	-.08***	-.10***	16.99	3.51
6. Paternal warmth	-.23***	.46***	-.16***	-.29***	.41***	—	-.08***	-.10***	15.28	4.69
7. Aggression toward partner	.29***	-.08	.29***	.19***	-.27***	-.08	—	.55***	2.46	3.33
8. Victimization by partner	.22***	-.11*	.28***	.22***	-.27***	-.16***	.68***	—	4.34	4.62
M	6.95	10.05	3.51	3.45	16.42	13.28	4.45	5.81		
SD	4.95	3.80	3.11	3.31	3.26	5.15	4.94	5.51		

Note: Correlations for women (*n* = 1,756) displayed above the diagonal; correlations for men (*n* = 309) displayed below the diagonal.

p* < .10. *p* ≤ .05. ****p* ≤ .01. (two-tailed tests).

parenting, and between these measures and the interparental hostility and warmth scales. More importantly, however, in most cases the parenting variables and the interparental interaction variables are correlated with reports of both perpetrating and being the victim of dating violence. For women, all of the parenting variables and both of the interparental interaction variables are significantly correlated with perpetration and victimization. For men, interparental hostility, but not interparental warmth, is correlated with perpetration and victimization. Paternal and maternal hostility as well as maternal warmth are also related to men’s reports of both perpetration and victimization, whereas paternal warmth is not. In addition, for models for both men and women, the parenting variables and the interparental interaction variables are highly intercorrelated. Therefore, to reduce the problem of multicollinearity, separate regression models were run for the parenting and the interparental variables. However, to examine the stability of our findings, we also analyzed models that included both the parenting and interparental variables in the same model.

Does Interparental Warmth Amplify the Effects of Interparental Hostility?

Perpetration. Table 2 presents the results of the regression analyses where each dating violence measure was predicted from the interparental and parenting variables. Models I through VI show the results using aggression toward partner as the dependent variable. Model I shows that interparental hostility has an effect on perpetration for both men and women. Model II adds the multiplicative interaction term formed by multiplying interparental hostility by interparental warmth. This interaction is significant for both men and women. Model III shows that this interaction term remains significant even after controlling for paternal and maternal parenting practices. The main effect of interparental hostility, however, also remains significant. This pattern of findings suggests that interparental hostility increases the probability of perpetration regardless of the level of interparental warmth, but the effect of interparental hostility is amplified when it occurs within the context of interparental warmth.

This interpretation is supported by the graph in Figure 1 which depicts the interaction of interparental hostility with interparental warmth for men. The regression line depicting the association between interparental hostility and perpetration of dating violence is significantly steeper for individuals whose parents are also high on interparental warmth ($b = .32, p < .01$) than for those whose parents are low on interparental warmth ($b = .12, p > .05$). Based on a simple slope test with a pick-a-point approach, the difference in dating violence between those exposed to high versus those who experienced low interparental warmth becomes significant when interparental hostility is greater than two standard deviations above the mean ($b = .23, p < .01$). Approximately 4.5% of men in our sample scored above two standard deviations on interparental hostility and at least one standard deviation on interparental warmth.

Figure 1 also shows the pattern of findings for women. The line depicting the association between interparental hostility and perpetration is steeper for those high on interparental warmth than for those low on interparental warmth. Using the simple slope procedure, the difference in dating violence between those exposed to high versus those who experienced low interparental warmth becomes significant when interparental hostility is greater than one standard deviation above the mean ($b = .07, p < .01$). About 3% of women in our sample scored above one standard deviation on both interparental hostility and interparental warmth. Overall, the graphs and regression post hoc tests provide strong support for the hypothesis that the effect of interparental hostility on perpetration of dating violence is amplified by interparental warmth.

Table 2. Hierarchical Regression Analysis Depicting the Results of Main and Moderating Effects Using IPV Perpetration as the Outcome

	Model I		Model II		Model III		Model IV		Model V		Model VI	
	Main Effect		Main + Interaction Effects		Main + Parenting + Interaction Effects		Main Effect		Main + Interaction Effects		Main + Interparental + Interaction Effects	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Intercept	1.32*** (.05)	.90*** (.02)	1.38*** (.05)	.93*** (.02)	1.37*** (.05)	.92*** (.02)	1.32*** (.05)	.90*** (.02)	1.31*** (.05)	.93*** (.02)	1.32*** (.05)	.93*** (.02)
Main effect												
Interparental hostility	.23*** (.06)	.16*** (.03)	.29*** (.05)	.19*** (.03)	.22*** (.06)	.14*** (.04)					.16*** (.06)	.11*** (.03)
Interparental warmth	.04 (.05)	.02 (.02)	.05 (.05)	.02 (.03)	.04 (.06)	.03 (.03)					.04 (.06)	.04 (.03)
Maternal hostility					.05 (.07)	.11*** (.03)	.11 (.07)	.13*** (.02)	.10 (.07)	.14*** (.02)	.06 (.07)	.12*** (.02)
Maternal warmth					-.14** (.06)	.02 (.03)	-.14** (.06)	.02 (.03)	-.13** (.06)	-.01 (.02)	-.13** (.06)	-.01 (.03)
Paternal hostility					.07 (.06)	.03 (.03)	.11* (.06)	.06** (.03)	.12* (.06)	.09** (.03)	.09 (.06)	.06* (.03)
Paternal warmth					.10 (.06)	-.02 (.03)	.07 (.06)	-.03 (.02)	.08 (.06)	-.03 (.02)	.08 (.06)	-.03 (.03)
Two-way interaction												
Interparental hostility x warmth			.12*** (.05)	.05*** (.02)	.10** (.05)	.04** (.02)						
Interparental warmth x hostility												
Maternal hostility x warmth												
Maternal hostility x Paternal warmth									-.05 (.05)	.03** (.01)	-.05 (.05)	.03** (.01)
Paternal hostility x Paternal warmth									.03 (.05)	.05** (.02)	.03 (.05)	.04** (.02)
Adjusted R ²	.05	.03	.07	.04	.10	.05	.07	.04	.07	.05	.09	.06
R ² increase due to interaction			.02***	.01***	.01***	.01***	.00	.01**	.00	.01**	.00	.02**

Note: This table shows, separately for men and women, perpetration toward a partner regressed on interparental hostility, the parenting behaviors, and the interaction of interparental hostility with interparental warmth as well as the interaction of harsh parenting with parental warmth (Men = 309; Women = 1,756). Unstandardized coefficients are shown with robust standard errors in parentheses; all independent variables are standardized by z-transformation ($M = 0$ and $SD = 1$).

* $p < .10$. ** $p < .05$. *** $p < .01$. (two-tailed tests).

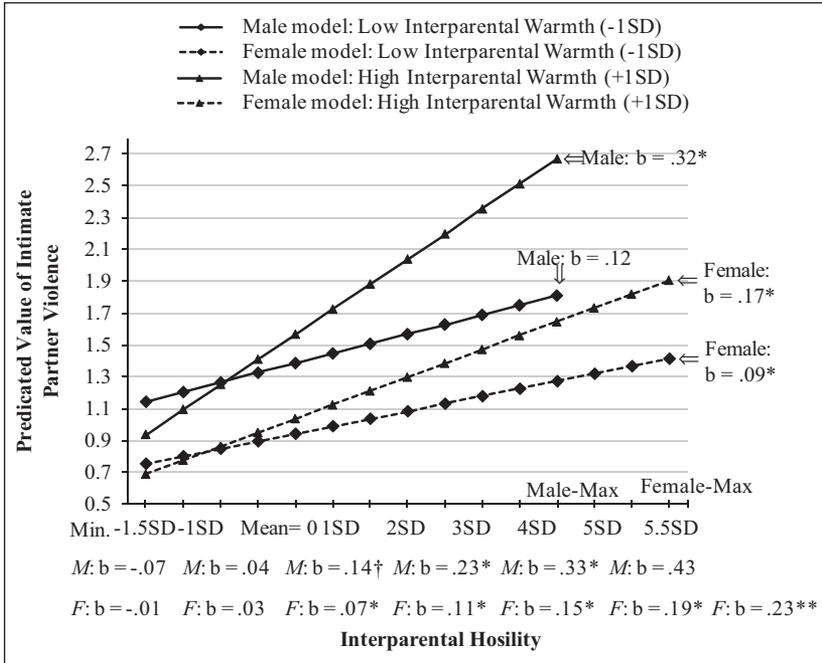


Figure 1. The association between interparental hostility and respondent's aggression toward an intimate partner moderated by level of interparental warmth

Victimization. Turning to victimization, Models I through III in Table 3 show a pattern of results very similar to those just discussed for perpetration. Model I shows that interparental hostility has an effect on perpetration for both men and women. The findings presented in Model II indicate that there is a significant interaction of interparental hostility and interparental warmth in predicting victimization, but that the main effect of interparental hostility remains significant after taking into account this interaction term. Finally, Model III shows that these results hold even after controlling for paternal and maternal parenting. This is true for both men and women. These findings suggest that interparental hostility increases the probability of victimization regardless of the level of interparental warmth, but that the effect of interparental hostility is amplified when it occurs within the context of interparental warmth.

Although not shown for reasons of parsimony, the graphs for these interactions indicate a pattern virtually identical to those depicted in Figure 1. Regardless of gender, the regression line depicting the association between

Table 3. Hierarchical Regression Analysis Depicting the Results of Main and Moderating Effects Using IPV Victimization as the Outcome

	Model I		Model II		Model III		Model IV		Model V		Model VI	
	Main Effect		Main + Interaction Effects		Main + Parenting + Interaction Effects		Main Effect		Main + Interaction Effects		Main + Interaction + Interaction Effects	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Intercept	1.49*** (.06)	1.25*** (.02)	1.59*** (.06)	1.30*** (.03)	1.57*** (.06)	1.29*** (.03)	1.49*** (.06)	1.25*** (.02)	1.50*** (.06)	1.29*** (.03)	1.49*** (.06)	1.29*** (.03)
Main effect												
Interparental hostility	.16** (.07)	.17*** (.03)	.26*** (.06)	.22*** (.03)	.19*** (.07)	.15*** (.04)	.13* (.08)	.16*** (.03)	.10 (.08)	.19*** (.03)	.08 (.08)	.16*** (.03)
Interparental warmth	-.04 (.07)	-.01 (.03)	-.01 (.06)	-.01 (.03)	.07 (.07)	-.01 (.04)	.09 (.07)	-.01 (.04)	-.13** (.06)	-.02 (.03)	-.13** (.06)	-.02 (.03)
Maternal hostility			-.13** (.06)	.02 (.03)	-.13** (.06)	.02 (.03)	.09 (.07)	.06** (.03)	.13* (.07)	.08** (.04)	.11* (.07)	.05 (.04)
Paternal hostility			.06 (.06)	.03 (.03)	.06 (.07)	-.01 (.03)	.01 (.07)	-.04 (.03)	.02 (.07)	-.04 (.03)	.04 (.07)	-.02 (.03)
Paternal warmth			.06 (.07)	-.01 (.03)	.06 (.07)	-.01 (.03)	.01 (.07)	-.04 (.03)	.02 (.07)	-.04 (.03)	.04 (.07)	-.02 (.03)
Two-way interaction												
Interparental hostility x Interparental warmth			.22*** (.05)	.08*** (.02)	.19*** (.06)	.07*** (.02)						
Maternal hostility x Maternal warmth									-.03 (.05)	.06*** (.02)	-.03 (.05)	.06*** (.02)
Paternal hostility x Paternal warmth									.07 (.06)	.04** (.02)	.07 (.07)	.04** (.02)
Adjusted R ²	.02	.03	.07	.04	.09	.05	.06	.04	.06	.05	.05	.06
R ² increase due to interaction			.05**	.01**	.04***	.01**			.00	.01**	.00	.02**

Note: This table shows, separately for men and women, victimization by partner regressed on interparental hostility, the parenting behaviors, and the interaction of interparental hostility with interparental warmth as well as the interaction of harsh parenting with parental warmth (Men = 309; Women = 1,756). Unstandardized coefficients are shown with robust standard errors in parentheses; all independent variables are standardized by z-transformation (M = 0 and SD = 1). *p < .10, **p < .05, ***p < .01, (two-tailed tests).

interparental hostility and perpetration of dating violence was significantly steeper for individuals whose parents were also high on interparental warmth than for those whose parents were low on interparental warmth. Based on a simple slope test with a pick-a-point approach, the difference in the probability of victimization between those exposed to high versus those who experienced low interparental warmth becomes significant when interparental hostility is greater than two standard deviations above the mean. These results support the hypothesis that the effect of interparental hostility on victimization by a partner is amplified by interparental warmth.

Does Warm Parenting Amplify the Effects of Hostile Parenting?

Perpetration. Model IV in Table 2 shows that maternal warmth is negatively related to perpetration of dating violence for men, and the effect of paternal hostility approaches significance. Both maternal and paternal hostility show significant effects for women. Model V enters the interaction of Maternal hostility \times Maternal warmth and of Paternal hostility \times Paternal warmth. Neither of these interactions is significant for men, whereas they are both significant for women. Model VI shows that these interaction terms remain significant after controlling for interparental hostility and interparental warmth. The main effect of maternal hostility remains significant after introducing these controls, and the main effect of paternal hostility approaches significance. These findings suggest that for women, but not for men, maternal and paternal hostility increases perpetration and that these effects are amplified by maternal and paternal warmth, respectively. This interpretation is supported by the graphs presented in Figure 2.

Figure 2 shows that the regression line depicting the association between maternal hostility and perpetration of dating violence is significantly steeper for women whose mothers were also high on parental warmth. The difference in dating violence between those exposed to high versus those who experienced low maternal warmth becomes significant when maternal hostility is greater than two standard deviations above the mean. Although not presented for the purpose of brevity, the graph of the interaction of paternal hostility and perpetration of dating violence by level of paternal warmth is almost identical to the pattern in Figure 2. Both of these graphs are consistent with the hypothesis that parental warmth amplifies the chances that parental hostility will lead to dating violence. Approximately 5.5% of women in our sample scored two deviations above the mean on maternal hostility and at least one standard deviation on maternal warmth.

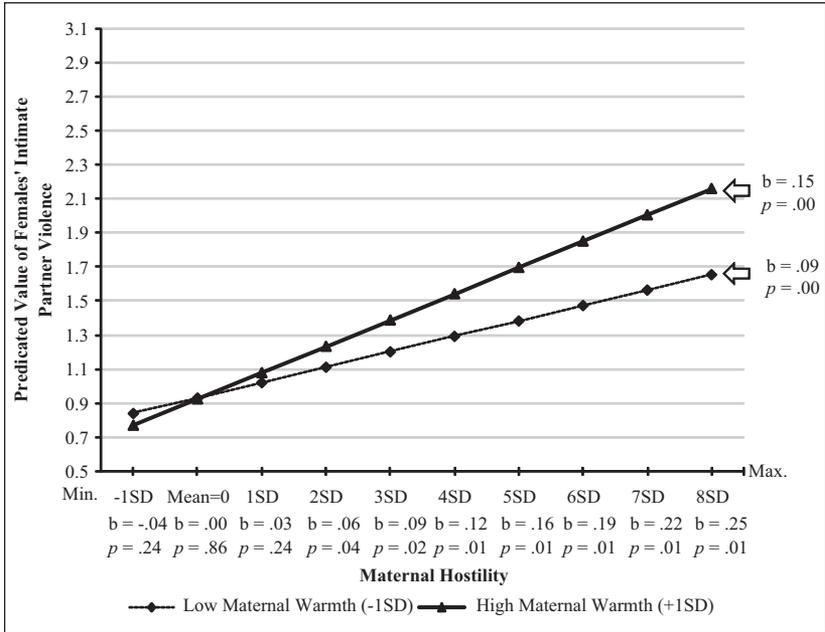


Figure 2 .The association between maternal hostility and women’s aggression toward an intimate partner moderated by level of maternal warmth

Victimization. Shifting the focus to victimization, Table 3 shows a pattern of findings that are very similar to those found for perpetration. Model IV shows that the effect of maternal warmth significantly predicts men’s reports of having been victimized by a partner, and the effect of maternal hostility approaches significance. Both maternal and paternal hostility have a significant effect for women. Model V enters the interaction of Maternal hostility × Maternal warmth and the interaction of Paternal hostility × Paternal warmth. The results revealed that these two interaction effects were significant for women but not for men. Model VI shows that these interaction terms remain significant for women after controlling for interparental hostility and interparental warmth. The main effect of maternal hostility remains significant after introducing these controls, although the main effect of paternal hostility does not. This finding suggests that for women, maternal hostility increases victimization risk, and that these effects are amplified by maternal warmth.

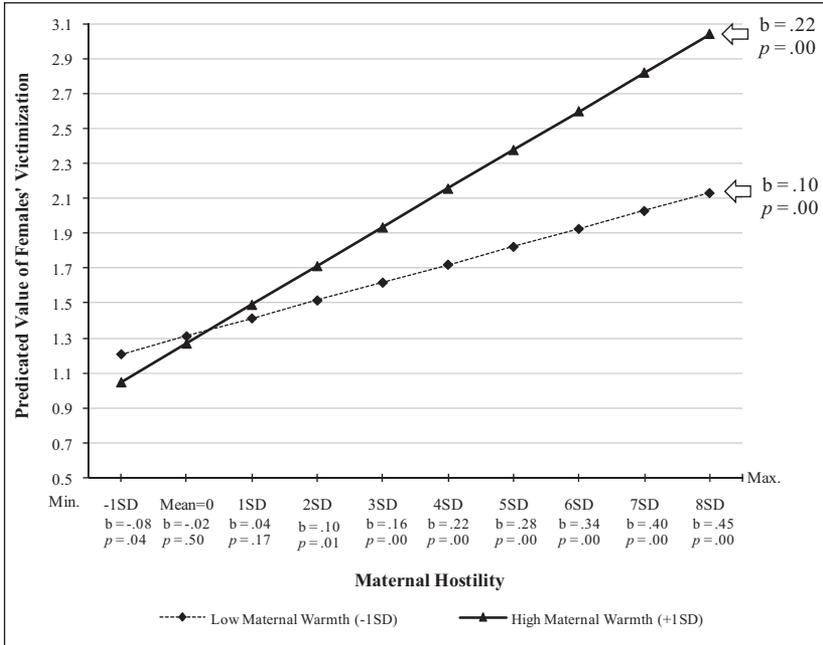


Figure 3. The association between maternal hostility and women's victimization by an intimate partner moderated by level of maternal warmth

These interpretations were supported by the graph of the interactions presented in Figure 3. Conversely, the absence of a main effect for paternal hostility suggests that paternal hostility only increases women's risk for victimization when it is coupled with paternal warmth.

Figure 3 shows that the regression line depicting the association between mothers' hostile parenting and being the victim of dating violence is significantly steeper for women whose mothers are also high on warm parenting ($b = .22, p < .05$) than for those whose mothers are low on warm parenting ($b = .10, p < .05$). Using a simple slope test with the pick-a-point approach, the difference in victimization between those exposed to high versus those who experienced low maternal warmth becomes significant at two standard deviations above the mean. This is consistent with the idea that, for women, maternal warmth amplifies the effect of maternal hostility. Although not presented here for the purpose of brevity, the graph of the association between paternal hostility and victimization by level of paternal warmth is almost

identical to the pattern in Figure 3. The results, however, indicate that the association between paternal hostile parenting and victimization was not significant at low levels of paternal warmth but was significant at high levels of warmth. The difference between the two slopes is significant at three standard deviations above the mean. This suggests that for women, paternal hostility only increases the chances of victimization when it is combined with paternal warmth.

Are There Significant Gender Differences in the Effects of Parental Hostility and Warmth on Perpetration and Victimization?

The model comparison procedure in Structural Equation Modeling (SEM) was used to test the statistical significance of the difference in paths between the models for women versus men. This approach entailed stacking the models for women and men and testing for differences in chi-square between models that constrained associations between variables to be identical for the two groups versus models that freed a particular path between an interaction term and an outcome to differ between groups. All six interaction effects were examined. These analyses indicated that there were no gender differences in the effect of interparental hostility with interparental warmth on perpetration or victimization. Conversely, a multigroup comparison revealed that the effects for the parenting variable interactions, for both perpetration and victimization, were significantly higher for women than men.

Discussion

A wealth of studies has reported that child and adolescent exposure to either interparental hostility or harsh parenting increases the chances that an individual will grow up to engage in dating violence as an adult (Stith et al., 2000). Social learning theory suggests that, through modeling, when parents are hostile to each other they increase the chances that their offspring will be aggressive toward their dating partners and will tolerate being the recipient of such aggression. Consistent with this idea, we found that exposure to interparental hostility was related to both perpetration of IPV and IPV victimization. This association held for both men and women.

Straus and colleagues (1990a, 1990b) argue, however, that parenting behavior also provides relevant information regarding how people treat those they love. Consistent with this idea, past research has reported an association

between having experienced harsh parenting and engaging in dating or marital violence (Stith et al., 2000). Unfortunately, these studies often fail to control for the effects of interparental aggression. In the present study, there were significant simple correlations between paternal and maternal hostility and dating violence (perpetration and victimization) for both men and women. After controlling for interparental aggression, however, only maternal hostility was related to dating violence for women and only maternal warmth was associated with the dating violence of men. Thus, at least in our data, parenting practices appear to be a less consistent predictor of dating violence than interparental hostility.

Although these findings regarding the effect of interparental behavior and parenting practices on dating violence are interesting, they were not the main focus of the present study. Rather, we were concerned with the largely neglected issue of how interparental warmth might moderate the effect of interparental hostility and how warm parenting practices might moderate the effect of harsh parenting. We expected to find that respondents with parents who display high levels of both interparental hostility and interparental warmth would be at greater risk for perpetrating and being the victim of dating violence than those with parents high on interparental hostility but low on interparental support. Similarly, we posited that respondents whose parents engage in both harsh and supportive parenting practices would report greater involvement in dating violence, whether as perpetrator or a victim, than those whose parents exhibit high rates of harsh parenting but low levels warmth and support. Our findings corroborated the first hypothesis but provided mixed support for the second.

For men and women, interparental hostility interacted with interparental warmth to predict dating violence. This was true whether perpetration or victimization was used as an outcome. Graphing these interaction terms showed that the association between interparental hostility and both indicators of dating violence was significantly stronger when the parents also exhibited interparental warmth. These findings indicate that, as hypothesized, individuals who grow up with parents who engage in interparental hostility combined with interparental warmth are at highest risk for both perpetrating and being the victim of dating violence.

The findings regarding parenting practices, however, showed different patterns for women and men. For women, maternal warmth moderated the effect of maternal hostility on dating violence such that the association between maternal hostility and both indicators of dating violence (perpetration and victimization) was significantly stronger when the mother also exhibited warmth. The same pattern of moderation was also evident for fathers'

parenting. In contrast, these interaction terms did not approach significance for men. Thus the hypothesis that parental warmth amplifies the association between parental hostility and dating violence held only for women.

It is not clear why such gender related patterns might exist. Why is the dating violence of both men and women influenced by the quality of the parents' marital relationship, whereas the quality of the parent-child relationship only affects the dating violence of women? We speculate that the parents' marital relationship clearly provides relevant information to both men and women regarding the nature of romantic relationships. Men and women are motivated to learn about and become involved in romantic relationships. Hence they may orient to the norms implicit in the interaction of the couples that they observe, especially their parents. However, women also may be more family oriented and concerned with children than men. Thus it may be that, based on marital interactions and parenting practices in their family of origin, they develop schemas about how family members treat each other (i.e., they develop notions about what is acceptable behavior between people who love each other). Young men, who are less concerned with family processes and children, may develop a romantic relationship schema based on their parents' marital interaction and a separate parenting schema based on how they were parented. To the extent that this argument is true, the correlation between spousal and child abuse should be higher for women than men. Further, both parents' marital interaction and parenting practices should predict a woman's violence toward both her romantic partners and children, whereas for men only parents' marital interaction should predict IPV, and only quality of parenting in the family of origin should predict their harsh parenting. These are intriguing hypotheses for future research.

It is important to interpret the results of this study in terms of several limitations. First, the findings need to be replicated as they appear to be the first to document such amplification effects. Second, modification of established measures may have had an impact on construct validity. However, a consequence of reduced reliability and/or validity is that that one may be less likely to detect the association that exists between variables. Yet we found consistent support for our predictions across several regressions. Third, the findings reflect limitations in our research methods. Chief among these was the use of a single reporter to assess both the measures of parental behavior and dating violence. It is probably the case that some of our respondents may have underreported their involvement in dating violence. It should be noted, however, that it is unlikely that such under-reporting accounted for the significant associations found in our analyses as measurement error tends to attenuate the relationship between variables. Our use of retrospective reports

to assess past interparental interaction and parenting practices raises a different type of measurement issue. One might argue that individuals involved in violent dating relationships are apt to be aggressive individuals who possess a biased memory of their parents as having been hostile. Although this may be true, it cannot explain why respondents with the highest levels of dating violence also remember their parents as often being warm and supportive. Therefore, although our approach certainly would have been strengthened by using longitudinal data and multiple reporters, it does not appear that the pattern of findings obtained can simply be interpreted as an artifact of our research design.

The conclusions and implications of our findings for researchers as well as practitioners are quite straightforward. First, our findings suggest that parents who direct verbal and physical abuse toward one another increase the probability that their sons and daughters will grow up to view violence as a normal and legitimate component of intimate relationships. Children exposed to such behavior are more likely to both perpetrate and tolerate being the victim of dating violence. Second, when aggressive spouses display warmth and support toward one another they do not reduce the negative consequences of their aggressive interactions. Indeed, supportive interactions seem to amplify the probability that offspring will emulate any aggressive interparental behaviors in their own romantic relationships. It may be the case that parents feel that they can counteract any negative messages that are a result of hostile or aggressive marital interactions by also demonstrating warm, loving behaviors toward their partner in front of their child. Our results indicate that the opposite is true. Not only are their offspring likely to see aggression toward an intimate as normalized, but they may also view it as a normal part of loving relationships. In the case of women, parental warmth appears to have this same effect. That is, harsh parenting in the context of an otherwise warm, loving relationship may lead to an increased risk dating violence.

Of course, parents should never be discouraged from engaging in warm and supportive interactions with each other or their children. Such behavior is desirable for a number of reasons. Unfortunately, however, it does not have the benefit of countering or compensating for the model of romantic relationships that parents convey with their aggressive behavior. Marital interaction provides critical and salient information to offspring regarding how to relate to one's romantic partner. As the romantic relationships of offspring are similar to marriage in that both tend to involve emotional and sexual intimacy, the observation of interparental conflict is particularly consequential (Cui & Fincham, 2010). Conflict between partners is unavoidable; therefore, control of the emotional tenor of marital disagreements is critical to offsprings' likelihood

of developing a romantic relationship free of aggression and violence. Perhaps the most important implication for practitioners is that the best way for parents to avoid contributing to their child's chances of being in a violent romantic relationship is to eschew family interaction involving verbal and physical aggression.

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