Journal of Abnormal Psychology
1996, Vol. 105, No. 3, 369-380

0021-843X/96/$3.00

Prospective Prediction of Husband Marital Aggression Within Newlywed Couples

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This study prospectively examined a social interactional model of husband marital aggression. Young couples were assessed at the time of their 1st marriage with respect to marital conflict styles, alcohol consumption, hostility, gender identity, perceived power inequity, and history of family violence. Couples were reassessed at their 1-year anniversary, and information concerning marital aggression was collected. Most of the constructs were prospectively related to husband aggression, but these relationships were largely mediated through marital conflict styles and husband alcohol consumption, which in turn were influenced by husband's hostility, gender identity, and perceived power inequity.

Research over the past 20 years has documented that the prevalence of marital aggression, considered both in terms of lifetime and in a 1-year period, is far more common than previously believed. For example, Straus, Gelles, and Steinmetz (1980) used data collected from the 1975 National Violence Survey and reported that the lifetime prevalence of marital aggression was approximately 30%, with 15% reporting aggression in the preceding year. Among general population samples, the 1-year prevalence of husband-to-wife violence has been estimated between 11% (Kennedy & Dutton, 1987) and 22% (Meredith, Abbott, & Adams, 1986).

Although the overall prevalence of marital aggression is high, the rates among younger, newly married adults may be several times as large. For example, Cazenave and Straus (1990) reported that 14% of husbands between 18 and 29 years old had slapped their spouses in the preceding year; the rate was only 2% in husbands over 55 years old. O'Leary, Barling, Arias, and Rosenbaum (1989) found that 27% of husbands reported husband-to-wife marital aggression at 18 months after marriage. Integrating husband and wife reports led to estimates approximately 10% higher. We found that 35% of couples reported husband-to-wife aggression before marriage in a more diverse sample of newlyweds (McLaughlin, Leonard, & Senchak, 1992). These rates among newlywed couples are much higher than estimates among general population samples. In a considerable amount of research, the correlates of husband-to-wife aggression have been examined in the hopes of identifying causal factors. As is true in many clinical research arenas, much of the early literature was anecdotal and descriptive in nature, with the attendant methodological limitations (e.g., absence of appropriate comparison groups, inadequate assessments of both predictor and criterion variables). Furthermore, these early investigations were rarely guided by theory or were guided by simplistic, unifactorial models. As more systematic, methodologically sound research has accumulated, several factors have been consistently associated with marital aggression. These factors, in turn, have served as the basis for multifactorial, integrative models (e.g., Dutton, 1988; Stith & Farley, 1993).

The theoretical model guiding the present investigation (Figure 1) draws from a number of these models, but in particular from the social learning model described by O'Leary (1988). According to our model, marital aggression arises in the context of the verbally aggressive or coercive conflict behaviors used by the couple. These conflict behaviors are viewed as arising from stable dispositional characteristics such as hostility, gender roles, and power beliefs that develop prior to the relationship. Childhood experience with violence, a very common correlate of marital violence, is seen as affecting the dispositional characteristics from which the hostile–coercive interaction styles emerge. Finally, this model attempts to integrate another common correlate of marital violence, alcohol use. The present model proposes that alcohol use, particularly on the part of the husband, is related to marital aggression through its association with hostile dispositions and possibly by influencing marital conflict styles.

Conflict Behavior and Marital Aggression

The link between marital aggression and conflict behaviors has very strong empirical support. Gryl, Stith, and Bird (1991) reported that couples in violent dating relationships were more likely than couples in nonviolent relationships to use confrontation and experience negative affect in dealing with unresolved arguments. Focusing on newly married couples, Murphy and O'Leary (1989) reported that psychological aggression (verbal

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This research was supported by National Institute on Alcohol Abuse and Alcoholism Grant R01-AA07183. We would like to thank Lalee Backus for preparing the manuscript and Rob Marczynski for graphics support. We also gratefully acknowledge the cooperation of the Buffalo City Clerk's Office and Staff.

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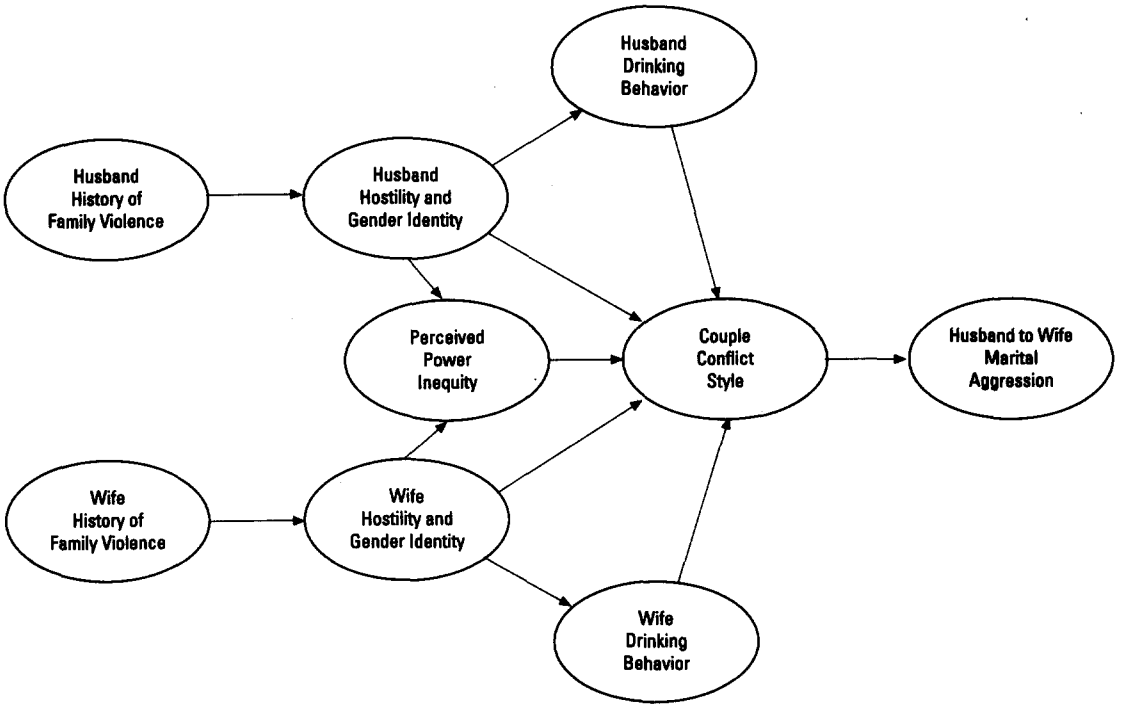

Figure 1. Heuristic model of marital violence.

and indirect aggression) was predictive of subsequent physical aggression. Recent observational studies have reported higher levels of aversive interpersonal behavior among maritally aggressive couples than among control couples. For example, in a series of analyses presented by Margolin and her colleagues (Burman, Margolin, & John, 1993; Margolin, John, & Gleberman, 1988), maritally aggressive men and their spouses displayed more negative behaviors than did couples in which the husband reported primarily withdrawal or verbal aggression in conflict situations. Similarly, Jacobson and his colleagues (Cordova, Jacobson, Gottman, Rushe, & Cox, 1993; Jacobson et al., 1994) observed that both violent husbands and their wives displayed more negative behavior and more angry and belligerent affect than did either distressed nonaggressive or happily married couples.

Although much of the research concerning conflict styles has focused on verbally aversive behaviors, other conflict behaviors, such as withdrawal and facilitative behaviors, may also be important. In the Gryl et al. (1991) study, violent couples were more likely to use avoidance to cope with unresolved arguments than were nonviolent couples. Babcock, Waltz, Jacobson, and Gottman (1993) found that domestically violent couples were more likely to report husband demand–wife withdraw sequences than were distressed or happy couples. Cordova et al. (1993) reported fewer facilitative behaviors among violent couples than among either the distressed or the happily married couples. Thus, a pattern of high verbal aggression, high withdrawal, and low facilitation is associated with marital aggression. However, with the single exception of O'Leary's research (e.g., Murphy & O'Leary, 1989), the extent to which these characteristic conflict behaviors are longitudinally predictive of marital aggression is unclear.

Dispositional Characteristics, Conflict Behavior, and Marital Aggression

According to the hypothesized model, conflict behaviors mediate the relationship between marital aggression and hostility, gender roles, and power beliefs. In general, the research literature has demonstrated that each of these constructs is associated with marital aggression. However, evidence that conflict behavior mediates these relationships is sparse. The strongest evidence for this mediational path is for the construct of hostility. Research with maritally aggressive men has consistently demonstrated that they report more anger and hostility than do controls (Barnett, Fagan, & Booker, 1991; Maiuro, Cahn, Vitaliano, Wagner, & Zegree, 1988). Additionally, hostility has been related to behavior in marital conflict situations. Smith, Sanders, and Alexander (1990) found that both husband and wife scores on the Cook–Medley Hostility Scale were related to hostile behavior in a high-conflict marital discussion. Thus, it is clear that hostility is related to both marital aggression and conflict behavior. One study has provided more direct support for the hostility → conflict behavior → marital aggression hypothesis. O'Leary, Malone, and Tyree (1994) assessed a number of the constructs (family history of violence, hostility, marital discord, and psychological aggression) within a longitudinal study of newlywed couples. The results suggested that hostility was associated with husband-to-wife violence and that this effect was mediated by psychological aggression, a construct reflecting verbal and passive aggressive behavior.

One of the major themes that recurs throughout both the psychological and sociological literatures on marital violence is the importance of gender roles. However, the empirical literature has provided contradictory findings for this assertion. Burke, Stets, and Pirog-Good (1989) reported that "males and females with more feminine gender identities [were] likely to inflict and sustain . . . physical abuse" (p. 87). They argued that emotional excitability, associated with the feminine gender identity, may operate as a precursor to aggression for both men and women. However, Boye-Beaman, Leonard, and Senchak (1993) found that husband femininity seemed to temper aggression, but only among White couples. Others have argued that the lack of masculinity rather than femininity per se is important. Rosenbaum (1986) found that male batterers scored significantly lower on masculinity scales than men in comparison groups. He argued that these men used aggression in an attempt to act in the way they believe society prescribes men to behave. In contrast, Finn (1986) found that men with more traditional beliefs about gender role were more likely to support the use of aggression within intimate relationships. A similar degree of inconsistency is seen in the few studies of the relationship between gender roles and conflict behavior (Burger & Jacobson, 1979; Sayers & Baucom, 1991). Thus, although many authors agree that gender roles are important, the interrelationship of gender roles, conflict behavior, and marital aggression remains unclear.

The construct of power inequity is closely related to the construct of gender roles and has been commonly linked to marital aggression. Basically, the belief that husbands and wives have or should have equal power in a relationship appears to be a protective factor against marital violence. For example, Straus et al. (1980) found higher rates of violence in couples in which either the husband or wife dominated in decision making. Coleman and Straus (1986) replicated this finding and reported that couples in which the decision making is divided (i.e., husbands have decision-making power in some areas, wives have power in other areas) also evidenced higher rates of marital aggression. In a disconfirming report, Babcock et al. (1993) found no evidence for differential decision-making power between violent couples. However, these authors examined the relative power of husband versus wife and did not specifically examine whether patterns of egalitarian versus nonegalitarian power were important.

Development of Dispositional Characteristics Involved in Marital Aggression

Researchers have often observed a continuity between an individual's experience with violence in his or her family of origin and the likelihood that the individual will be violent within his or her own family. Individuals who observe parental violence or experience parent-to-child violence are more likely to be physically aggressive within their marriage (Carroll, 1977). Furthermore, research has indicated that the experience of violence within the family of origin is more common among maritally violent than maritally dissatisfied men (Rosenbaum & O'Leary, 1981) and more common among maritally violent men than among men who are violent outside of the family (Barnett et al., 1991). In general, these findings are viewed as supporting the view that children learn to be aggressive by observing and modeling their parents. Consequently, one might expect that hostility would mediate the relationship between a history of family violence and marital aggression. In the O'Leary et al. (1994) study, parental violence was associated with the measures of an aggressive disposition. However, aggressiveness did not completely mediate the relationship. Parental violence continued to be related to marital violence after controlling for this dispositional factor.

Observing and experiencing parental violence may have an impact on other characteristics that are predictive of marital aggression. It seems reasonable that gender roles and beliefs about power within marital relationships may develop quite differently depending on the manner in which parents interact with each other around conflictual issues. In one of the few studies to address this, Stith and Farley (1993) found that the observation of marital violence was negatively associated with sex-role egalitarianism and positively associated with approval of marital violence. Sex-role egalitarianism and approval of marital violence were the only unique predictors of severe marital aggression. Taken together, these studies lead to the hypothesis that a family history of violence has an impact on hostility, gender roles, and beliefs about power and that these account for its relationship with marital aggression.

Role of Heavy Alcohol Consumption

Over the past two decades, research examining wife abuse has consistently suggested that patterns of husband heavy drinking are associated with the occurrence or severity of marital violence. Early research focused simply on the prevalence of problem drinkers or alcoholics among the batterer population. Reviews of this literature suggest that approximately 50% of husbands of battered wives had alcohol problems (Hilberman & Munson, 1978; Roy, 1982). Many of the methodologic problems associated with this literature have been addressed in recent years. This recent research has supported the basic conclusion that excessive alcohol consumption is associated with marital aggression (for reviews, see Hotaling & Sugarman, 1986; Leonard, 1993; Leonard & Jacob, 1988). Although this association continues to be supported in the research literature, explanations of the processes underlying the relationship remain controversial (see Flanzer, 1993; Gelles, 1993).

Heavy alcohol use has been viewed as a potential outcome of observing or experiencing violence (Holmes & Robins, 1988; Miller, 1993) and has also been linked to hostility (Leonard & Senchak, 1993). Consequently, spurious factors may, in part, account for the relationship. However, several studies have reported a significant relationship between alcohol use and domestic violence after controlling for potentially spurious factors. O'Leary (1988) and Leonard and Jacob (1988) have suggested that heavy alcohol use may have an impact on conflict behaviors. Consequently, we predicted a relationship between alcohol use and marital violence, mediated by the relationship between alcohol use and conflict behaviors.

The purpose of the present study was to examine a social interactional model of husband-to-wife marital aggression. Although this study developed independently and concurrently with the research conducted by O'Leary and his colleagues (O'Leary et al., 1989; O'Leary et al., 1994), it is very similar in

many respects: its focus on the early years of marriage, the use of a couple report of husband violence, the choice of constructs to assess, and the longitudinal design. It differs from O'Leary's work in several important respects. First, the current study used a more heterogeneous urban sample that was recruited as they applied for their marriage license. Second, the present study included measures of alcohol use, gender roles, and power inequity, as well as measures of hostility, family history of violence, and conflict behavior, constructs that have been linked fairly consistently to marital aggression. Finally, our analyses assess the joint influence of husband and wife variables in the prediction of husband-to-wife marital aggression.

Method

Participants

Participants in the present study were drawn from the Buffalo Newlywed Study (BNS), a 3-year prospective study of newly married couples. Couples who indicated that they were in the first marriage for both husband and wife and that the husband was between the ages of 18 and 29, inclusive, were eligible to participate. This analysis focuses on 541 couples that completed a premarital assessment (T0), and, at minimum, completed an interview at the time of their first anniversary (T+1) concerning husband-to-wife marital aggression during the first year of marriage. At the time of the marriage, the average age of the sample was approximately 1 year lower than the average age of couples at marriage nationally (perhaps because first marriages involving men over 30 years were excluded). Husbands were approximately 24.2 (SD = 2.76) years old at the time they married, and wives were 23.3 (SD = 3.31) years old. Reflecting the urban area in which the couples reside, 73% of the husbands and 75% of the wives were White. Approximately one fifth of the sample was Black (22% of husbands and 21% of wives). The educational level was also fairly diverse; 10% of husbands and 8% of wives did not graduate from high school, and 29% of husbands and 22% of wives were high school graduates with no further education. At the time of marriage, 29% of the couples already had a child. At the 1-year follow-up, 42% of the sample had children and 14% of the women were pregnant.

Procedures

Couples were approached at the city courthouse after they had applied for a marriage license and were recruited for a paid interview ($5). Those who initially refused were asked to participate in a very brief interview that collected sociodemographic information and to complete a supplemental questionnaire at home that covered the remaining interview information. Over the course of the study, 1,415 eligible couples were approached and 1,082 couples (76%) were successfully interviewed. Couples were then recruited for the longitudinal study and informed that each would receive $25 for participating. Only 10% refused to participate. Participating husbands and wives were each given an identical questionnaire and a separate postage-paid envelope with which to return the questionnaire. They were asked to complete the questionnaires privately within 2 weeks and not to discuss the contents until both had returned the questionnaires. Questionnaires were returned by both husband and wife in 646 couples (76% of those who agreed to participate).

Couples completed the same questionnaire packet approximately 1 year after they were married. These questionnaires were completed separately at the Institute. Then, each member of the couple was interviewed by a same-gender interviewer concerning the occurrence and circumstances of any marital aggression in the first year of marriage. Couples that resided outside of a 1-hr radius of the Institute were sent questionnaires by mail and participated in an abbreviated phone interview focusing primarily on the occurrence of husband-to-wife aggression. This latter procedure was also used in instances in which the couple refused to come to the Institute and for couples that missed five scheduled appointments. Overall, 541 of the 646 couples completed an interview concerning husband-to-wife aggression (82% completion); for 355 couples, both interviews were conducted in person (66%), whereas for 186 couples, at least one interview was conducted by phone (34%).

Instruments

There were 10 domains of independent variables assessed at T0: (a) Perceived Power Imbalance, (b) Marital Conflict Styles, (c) Husband History of Family Violence, (d) Husband Hostility, (e) Husband Gender Identity, (f) Husband Alcohol Use, (g) Wife History of Family Violence, (h) Wife Hostility, (i) Wife Gender Identity, and (j) Wife Alcohol Use. Each domain consisted of between one and six scales. The reliability of the scales and the intercorrelations among these scales are presented in Table 1. In addition, sociodemographic factors and premarital aggression, which were used primarily as control variables, were also assessed at T0, during the brief courthouse interview. Marital aggression was assessed at T+1 during the interviews with the husbands and wives.

The specific sociodemographic variables used in this study are described below, as are the individual scales that comprised the domains of interest.

1. Sociodemographic and background variables. Sociodemographic measures were assessed in the courthouse interview. Among the factors assessed were age, education, and occupation of the husband and the wife. Other factors included race–ethnicity, religion, and employment situation (full time, part time, unemployed, student, housewife, military) and whether the couple already had children or were expecting a child.

2. Alcohol use. Two aspects of alcohol consumption were assessed in the questionnaire battery. First, couples were asked quantity–frequency questions (Cahalan, Cisin, & Crossley, 1969) with respect to the past year to compute an average daily volume of alcohol consumption (ADV). We also administered the Alcohol Dependence Scale (ADS; Skinner & Allen, 1982), focused on the preceding year. This 25-item scale includes items concerning the loss of behavioral control (e.g., blackouts, gulping drinks), obsessive–compulsive drinking style (e.g., sneaking drinks, always having a bottle handy), and psychoperceptual and psychophysical withdrawal (e.g., hangovers, hallucinations). The scores observed in the present study were well below the mean for men seeking outpatient alcoholism treatment. Consequently, higher scores do not reflect alcoholism, but rather would reflect a very heavy drinking style marked by occasional blackouts and passing out. The ADS was transformed with a square root transformation to improve its distributional characteristics.

3. Hostile disposition. The Spielberger Trait Anger Scale (Anger) was used as a measure of hostile affect. This 10-item scale has extensive norms and excellent psychometric properties (Spielberger et al., 1979). The 10-item Assault subscale of the Buss–Durkee Hostility Inventory (Buss & Durkee, 1957) was used to assess the individual's report of his or her behavioral tendencies with respect to actual physical aggression.

4. Gender identity. Gender identity was measured using the Masculinity (M) and Femininity (F) subscales of the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Stapp, 1974). Respondents rated themselves on a 5-point scale for each of 16 (stereotypical positive) personal characteristics, with higher scores indicating greater perceived levels of masculinity (instrumentality) or femininity (expressiveness).

Table 1
Intercorrelations and Reliabilities of Predictor Variables

Variable and reliability	1	2	3	4	5	6	7	8	9	10	11
1. Verbal aggression	—	.44	−.23	.05	.05	−.18	.33	.21	−.10	.08	.10
2. Withdrawal	.45	—	−.15	.01	.06	.24	.16	.17	−.06	−.09	.05
3. Problem solving	−.31	−.31	—	−.08	−.04	−.16	−.12	−.04	.17	.07	−.02
4. Alcohol Dependence Scale	.14	.16	−.12	—	.33	.09	.17	.16	−.12	−.17	.09
5. Average alcohol consumption	.12	.08	−.13	.38	—	.02	.07	.08	.04	−.01	−.02
6. Perceived power	.15	.06	−.10	.19	.14	—	.25	.29	−.08	−.13	.08
7. Anger	.33	.10	−.17	.27	.20	.20	—	.43	−.15	−.14	.16
8. Assault	.23	.10	−.12	.26	.24	.19	.50	—	.04	−.20	.23
9. Masculinity	.03	−.02	.05	−.11	−.09	−.01	−.06	.08	—	.23	.03
10. Femininity	−.24	−.17	.14	−.16	−.11	−.19	−.23	−.22	.22	—	−.04
11. History of family violence	.21	.10	−.08	.13	.10	.21	.21	.20	.09	−.09	—
Reliability											
Husband versions	.68	.68	.67	.80	NA	.64	.87	.81	.68	.75	.79
Wife versions	.73	.62	.68	.79	NA	.62	.88	.78	.69	.73	.79

Note. Intercorrelations among husband scales appear below the diagonal. Intercorrelations among wife scales appear above the diagonal. NA = not applicable. For $rs \geq .12$, $p < .01$.

5. Perceived power imbalance. A 6-item scale based on the work of Blood and Wolfe (1960) and used by Straus and his colleagues (Coleman & Straus, 1986) was used in the present study. These items asked "who has the final say" for 6 issues. The response options were "husband only," "husband more than wife," "husband and wife exactly the same," "wife more than husband," and "wife only." Given the results of Coleman and Straus (1986), each item was scored as the absolute difference between the individual's response and an egalitarian response, and the items were summed separately for husband and wife. Thus, low scores reflect an egalitarian relationship, whereas high scores reflect husband dominance, wife dominance, or divided power.

6. History of family violence. An eight-item scale that assessed the extent to which the individuals saw physical aggression between their parents and were the target of physical aggression from their parents was administered to both husbands and wives (Malone, Tyree, & O'Leary, 1989).

7. Marital conflict styles. The Conflict Inventory (Margolin, 1980) is a 26-item scale that measures typical behavioral responses to marital conflict. Each individual rated the frequency with which his or her partner engaged in various behaviors in the context of a "difference of opinion." On the basis of preliminary factor analyses (see Roberts, Leonard, & Senchak, 1991), three subscales of conflict behavior were derived for each spouse: Problem-Solving (5 items), Verbal Aggression (4 items), and Withdrawal (5 items).

8. Premarital and marital aggression. Husband premarital aggression was assessed at T0 in the interview or in the supplemental questionnaire. Given the context of the assessment, the verbal aggression items and two physical aggression items ("pushed, grabbed, or shoved," and "slapped or hit") from the Conflict Tactics Scale (CTS; Straus, 1979) were used. Husband and wife were asked these items with respect to husband's behavior over the course of the relationship. These four items were summed and formed a reliable scale ($\alpha = .79$) of premarital aggression. The scale was transformed with a lognormal transformation to improve its distribution.

A modified version of the CTS was administered to both members of the couple at the T+1 interview to assess husband aggression. The version included moderate (e.g., "push, grab, or shove," "slap") to severe items (e.g., "hit with fist," "beat up") but not the very severe items (e.g., use of weapons). Two scales were created by summing the frequency of moderate and severe items separately for husband report of his behavior and for wife report of her husband's behavior. Although these two scales were reliable ($\alpha = .67$ for husband and .87 for wife) and correlated ($r = .46$), we used the maximum score as the dependent measure in accordance with research recommending the use of a couple report to obviate the underreporting of marital aggression. A lognormal transformation of the scale was done to improve its distribution qualities.[1]

Results

Attrition Bias

Couples that completed the 1-year follow-up ($n = 541$) were compared with couples that either refused or could not be located ($n = 105$) with respect to premarital (T0) characteristics. Husbands in complete couples were older than dropouts, $F(1, 644) = 4.92$, $p < .05$. Complete couples were also better educated; husband's education, $F(1, 644) = 19.18$, $p < .001$, and wife's education, $F(1, 644) = 21.94$, $p < .001$; less likely to have a child before marriage, $\chi^2(1, N = 636) = 14.69$, $p < .01$; and less likely to belong to a minority ethnic status, $\chi^2(1, N = 646) = 10.44$, $p < .01$, than were dropouts. Wives in complete couples were also more likely to be employed, $\chi^2(1, N = 646) = 8.21$, $p < .01$. In short, the follow-up of lower socioeconomic status couples was not as successful as the follow-up of higher status couples, $F(1, 643) = 20.71$, $p < .001$. With respect to substantive variables, wives in complete couples reported marginally higher marital satisfaction, $F(1, 644) = 3.54$, $p < .10$, and significantly lower hostility at the time of marriage, $F(1, 643) = 9.94$, $p < .01$. Husbands in complete couples tended to have lower levels of hostility than husbands in incomplete couples, $F(1, 642) = 2.82$, $p < .10$. These differences were not significant after controlling for demographic differences. Moreover, the complete couples and dropouts did not differ on alcohol use or premarital aggression ($Fs < 1$).

Type of Interview

As described above, about one-third of the follow-up interviews were conducted by phone. We examined whether the

[1] The untransformed violence variable had a kurtosis of 57.00 and a skewness of 6.86. In contrast, the transformed variable had a kurtosis of 2.68 and a skewness of 1.75.

couples differed with respect to sociodemographic factors or husband aggression as a function of the type of interview. Couples interviewed in person were more likely to report wife employment, $\chi^2(1, N = 537) = 7.38, p < .01$, and a current pregnancy, $\chi^2(1, N = 535) = 4.95, p < .05$. Couples who were interviewed by phone reported significantly lower levels of marital aggression, $F(1, 539) = 4.76, p < .05$, than did couples interviewed in person. Consequently, the type of interview was used as a control variable in subsequent analyses.

Prevalence of Husband Marital Aggression

Husband aggression in the first year of marriage was reported by 28% of husbands and 29% of wives. Additionally, 15% of both husbands and wives indicated the occurrence of 2 or more separate episodes of marital aggression during this time. The estimate of prevalence on the basis of a positive report by either husband or wife was 38%, with 28% of the couples reporting 2 or more episodes of aggression. With respect to the more severe items, 17% of couples indicated at least 1 episode of severe aggression, and 10% indicated 2 or more episodes of severe aggression.

Prediction of Premarital and Marital Aggression

To examine the prediction of premarital and marital aggression, we conducted multiple regression analyses with sets of independent variables (Cohen & Cohen, 1983). As noted previously, there were 10 separate sets assessed: (a) Perceived Power Imbalance, (b) Marital Conflict Styles, (c) Husband History of Family Violence, (d) Husband Hostility, (e) Husband Gender Identify, (f) Husband Alcohol Use, (g) Wife History of Family Violence, (h) Wife Hostility, (i) Wife Gender Identity, and (j) Wife Alcohol Use. For both premarital and marital aggression, we examined two regression models. In the first step of Model 1, any sociodemographic factor that was significantly associated with the dependent measure was entered into the regression equation. Then, the significance of each variable set was assessed after controlling just for these sociodemographic factors. In Model 2, the significant sociodemographic variables were entered in Step 1. Then, the unique contribution of each set was assessed with all of the other sets entered in the equation. Finally, the sets that were significant in Model 2 were entered in the equation, and the coefficient of each variable within the set was tested for significance.

Cross-Sectional Prediction of Premarital Aggression

Most of the sets of variables manifested significant relationships with husband premarital aggression in Model 1 analyses (column 1, Table 2). Four sets provided significant unique predictions of premarital aggression in Model 2 (Marital Conflict Styles, Husband Alcohol Use, Wife Hostility, and Wife Gender Identity), and one set approached significance (Perceived Power). The standardized regression coefficients associated with the significant sets of variables in Model 2 are displayed in the first column in Table 3. Premarital aggression was uniquely associated with low wife education, non-White race, high husband and wife verbal aggression, high husband alcohol use (both average consumption and ADS scores), low wife masculinity scores, and high wife assault scores.

Longitudinal Prediction of Husband Marital Aggression

Similar to the analysis of premarital aggression, most variable sets were related to marital aggression in the Model 1 analysis, but only a few sets contributed unique variance in Model 2. Furthermore, three of these unique predictor sets were identified as unique predictors of premarital aggression in the cross-sectional analyses, Marital Conflict Styles, Husband Alcohol Use, and Wife Hostility. The standardized regression coefficients associated with the significant sets of variables in Model 2 are displayed in the second column of Table 3.

Several sociodemographic and control variables were significant predictors of Husband Marital Aggression. Specifically, low wife education and non-White race were significantly associated with higher marital aggression. As noted earlier, the type of interview was also significantly associated, with marital aggression with couples who participated in the face-to-face interviews reporting higher levels of marital aggression. Within the domain of conflict resolution styles, both husband and wife verbal aggression were significant predictors of marital aggression. Somewhat surprisingly, high levels of husband problem solving and low levels of husband withdrawal were also significantly related to marital aggression. The two remaining scales were of marginal significance but suggested that marital aggression may be associated with low levels of wife problem solving and low levels of wife withdrawal. Husband drinking was also significantly and uniquely related to marital aggression. The individual betas indicated that the husband's score on the ADS was a significant predictor, and the husband's average daily consumption was marginally significant. Finally, low levels of husband femininity and high levels of wife assault were related to high levels of marital aggression.

The significant predictors of marital aggression may have emerged because these factors were related to premarital aggression, and premarital aggression predicted marital aggression. Consequently, a third set of analyses was conducted controlling for premarital aggression. These results are displayed in columns 5 and 6 of Table 2. We focused on the unique contributions of the sets of variables (Model 2) and noted that controlling for premarital aggression tended to reduce the unique variance attributed to each variable set. However, Marital Conflict Styles, Husband Alcohol Use, and Wife Hostility continued to account for significant unique variance in the prediction of marital aggression. The husband's Gender Identify, significant in the previous analyses, approached significance in the current analyses. The standardized regression coefficients for the prediction of marital aggression controlling for premarital aggression are displayed in column 3 of Table 3. Once again, relative to the previous analyses, the coefficients for the individual scales are somewhat reduced, and a few that had been marginally significant are no longer significant. However, the predictors of marital aggression remained significant after controlling for premarital aggression.

Table 2
Change in R^2 in Prediction of Aggression For Each Variable Set in Model 1 and Model 2

Variable set	Premarital aggression		Marital aggression		Marital aggression controlling for premarital	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Perceived power	.015*	.007†	.018**	.000	.007†	.000
Marital conflict styles	.214***	.104***	.132***	.060***	.037***	.026**
Husband						
History of Family Violence	.015**	.000	.021**	.002	.010**	.003
Hostility	.062***	.000	.024***	.002	.005	.001
Gender Identity	.048***	.005	.039***	.009*	.010*	.005†
Alcohol Use	.084***	.034***	.045***	.022***	.009*	.009*
Wife						
History of Family Violence	.001	.000	.006†	.001	.005*	.001
Hostility	.053***	.007*	.053***	.014**	.020***	.009*
Gender Identity	.016**	.011*	.007	.002	.003	.000
Alcohol Use	.014*	.000	.010*	.000	.004	.000
Multiple R		.61		.57		.62
Adjusted R^2		.35		.29		.35

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Cross-Sectional Predictions of Conflict Styles and Husband Alcohol Use

Because both Marital Conflict Styles and Husband Alcohol Use at T0 were uniquely predictive of husband aggression, we conducted separate regression analyses examining the unique predictors of these constructs. Two composite variables, one representing Conflict Styles and one representing Husband Alcohol Use, were used as the dependent measures in these analyses. The Conflict Styles variable was calculated by weighting standardized scores of the husband and wife scales of Verbal Aggression, Problem Solving, and Withdrawal by the associated standardized regression coefficients in the Model 2 prediction of husband aggression. High scores on this composite would be indicative of a conflict style predictive of physical aggression and are thereby considered to be dysfunctional. The Husband Alcohol Use variable made use of the standardized regression coefficients for the husband ADS and the husband ADV.[2] In the first step of the regressions, any sociodemographic factor that was significantly associated with the composite was entered into the regression equation. Then, the unique contribution of each set was assessed after the remaining sets were included in the regression. Given our heuristic model, Husband Alcohol Use was used to predict Conflict Styles, but Conflict Styles was not used to predict Husband Alcohol Use. After the significant sets were identified, they were included in the regression, and the individual regression coefficients associated with the significant sets were tested for significance.

The first column of Table 4 presents the unique contribution of the variables sets for the prediction of Conflict Styles. As suggested by our model, the sets of Perceived Power Imbalance, husband and wife Hostility, and husband Gender Identity were uniquely associated with the Conflict Style composite. However, neither husband nor wife Alcohol Use nor wife Gender Identity were significantly related to the composite. Although not predicted by the model, the husband's History of Family Violence was also related to Conflict Styles. The first column of Table 5 identifies the individual scales within sets that were significantly predictive of Conflict Styles. The most noteworthy of these concerns the Perceived Power set. For this set, only the husband's perception of power appears to be relevant. Deviations from an egalitarian power structure by husband report were associated with more dysfunctional conflict styles. High husband and wife anger and low husband femininity were also significantly related to dysfunctional conflict styles.

The prediction of husband Alcohol Use identified three unique predictor sets: Perceived Power, husband Hostility, and husband Gender Identity. The contributions of these sets are displayed in column 2 of Table 4, and the unique contributions of the components of each set are displayed in column 2 of Table 5. Both components of husband Hostility were significantly related to husband Alcohol Use. As with the prediction of Conflict Styles, husband's Perceived Power, but not wife's, was related to husband Alcohol Use. Finally, low levels of masculinity were significantly related to husband Alcohol Use.

Prediction of Husband Perceived Power

Perceived Power, as predicted by the heuristic model, was uniquely associated with marital conflict styles. However, only husband perceived power was uniquely associated with conflict styles. As a result, one final regression was conducted using husband perceived power as the criterion variable. As with the other analyses, the unique contribution of variable sets were examined after significant sociodemographic factors had been included in the model. The following sets were involved in this regression: (a) husband Hostility; (b) husband Gender Identity; (c) husband History of Family Violence; (d) wife Hostility; (e) wife Gender Identity; and (f) wife History of Family Violence. The results of this analysis are displayed in column 3, Table 4

[2] These composites were based on the regression equations predicting marital aggression without controlling for premarital aggression.

Table 3
Significance of Variables in Model 2 for the Prediction of Premarital and Marital Aggression

Variable	β		
	Premarital	Marital	Marital controlling for premarital
Premarital aggression			.29***
Interview[a]	.10**	−.10**	−.10**
Wife education	−.14***	−.12**	−.07†
Husband race	.13***		
Wife race		.20***	.17***
Husband age		−.07†	−.07†
Wife age			
Husband verbal aggression	.29***	.20***	.11*
Husband problem solving	.05	.11**	.10*
Husband withdrawal	−.03	−.08*	−.08*
Wife verbal aggression	.24***	.19***	.12**
Wife problem solving	−.01	−.07†	−.06†
Wife withdrawal	−.05	−.08†	−.06
Husband ADS	.13**	.11**	.08*
Husband ADV	.13***	.07†	.04
Wife masculinity	−.12**		
Wife femininity	.05		
Wife anger	−.02	.02	.02
Wife assault	.09*	.13**	.11**
Husband masculinity		.05	.03
Husband femininity		−.09*	−.08*

Note. ADS = Alcohol Dependence Scale; ADV = average daily volume of alcohol consumption.
[a] Premarital aggression was more likely to be reported in the supplemental questionnaire as opposed to the courthouse interview. Marital aggression was more likely to be reported in the face-to-face interview as opposed to the phone interview.
† $p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

and in column 3, Table 5. All of the significant sets were based on husband variables. Hostile, low feminine husbands with a history of family violence were less likely to report egalitarian relationships.

Family History of Violence and Individual Difference Factors

Most of the individual difference factors for both husband and wife were important contributors to marital violence, either directly or indirectly through associations with Marital Conflict Styles, husband Alcohol Use, or husband Perceived Power. To examine the relationship between Family History of Violence and the Individual Difference factors, we calculated simple correlations among the component scales in these sets. Given that the components within the specific sets did not act uniformly across the different regressions, these separate correlations were viewed as more appropriate than correlations among some composites. These correlations appear in Table 1. In general, the Family History of Violence was significantly related to Hostility for both husbands and wives (*r*s = .21 and .20 for husband Anger and Assault and *r*s = .16 and .23 for wife Anger and Assault, $p < .01$). For husbands, there were significant but very modest associations between History of Family Violence and high levels of Masculinity ($r = .09$, $p < .05$), low levels of Femininity ($r = -.09$, $p < .05$), and high levels of Perceived Power ($r = .21$, $p < .01$).

Discussion

In general, the findings were supportive of the social interactional model of husband marital aggression that we and others have suggested. A summary of significant relationships is depicted in Figure 2. Several aspects of the results should be noted. First, marital conflict styles and husband alcohol use were strongly and consistently related to husband-to-wife aggression, both premaritally and during the first year of marriage. Second, although husband femininity and wife hostility were unique predictors of marital aggression, the impact of the individual difference factors was primarily indirect through relationships with conflict styles and alcohol use. Third, the prediction of husband marital aggression involved primarily husband variables, although several wife variables were significant.

Conflict behavior proved to be a very potent predictor of husband marital aggression. Although previous investigators have used measures of conflict or measures of psychological aggression, we used a measure that assessed verbal aggression, problem solving, and withdrawal from the spouse's perception. It was expected that poor conflict skills, consisting of high verbal aggression, high withdrawal, and low problem solving would predict marital aggression. The results were somewhat more complex. Overall, a constellation of high husband and wife verbal aggression, high husband problem solving and low husband withdrawal proved to be significantly predictive of marital aggression. Although not uniquely predictive, low wife withdrawal and low wife problem solving were nearly significant. As we anticipated, husband and wife verbal aggression was strongly

Table 4
Unique Contributions of Variable Sets to Prediction of Conflict Styles, Husband Alcohol Use, and Husband Perceived Power

Variable	ΔR^2		
	Marital conflict styles	Husband alcohol use	Husband perceived power
Perceived Power Imbalance in relationship	.010*	.010*	
Husband			
History of Family Violence	.008*	.003	.016**
Hostility	.030***	.068***	.013*
Gender Identity	.020***	.018**	.020**
Alcohol Use	.000		
Wife			
History of Family Violence	.004	.000	.005
Hostility	.060***	.001	.001
Gender Identity	.002	.005	.003
Alcohol Use	.000		
Multiple *R*	.51	.40	.36
Adjusted R^2	.26	.14	.11

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5
Significance of Variables in Predictions of Conflict Styles, Husband Alcohol Use, and Husband Perceived Power

Variable	β		
	Marital conflict styles	Husband alcohol use	Husband perceived power
Sociodemographic			
SES	.21***		
Husband education	−.03	−.01	
Wife			
Age	−.09*		
Race			.13**
Education			−.06
Perceived Power Imbalance			
Husband	.10*	.10*	
Wife	.02	.02	
Husband Hostility			
Anger	.19***	.13**	.09†
Assault	.01	.21***	.05
Husband Gender Identity			
Masculinity	.03	−.12**	−.00
Femininity	−.16***	−.04	−.15***
Wife Hostility			
Anger	.22***		
Assault	.09†		
History of Family Violence			
Husband	.09*		.13**
Wife	.00		.08†

Note. SES = socioeconomic status.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

predictive of later husband aggression. This finding replicates the results of O'Leary et al. (1994). It seems clear that a relationship marked by high levels of husband and wife verbal hostility has a strong potential for the occurrence of marital aggression.

Although problem solving is commonly viewed as beneficial and withdrawal as detrimental to marital functioning, the results were at odds with this perspective. In interpreting these results, it is important to note that husband problem solving and husband withdrawal were predictive of husband marital aggression only after husband and wife verbal aggression were entered into the model. The simple bivariate relationships between husband problem solving and withdrawal and marital aggression were not significant. This raises the possibility that the meaning of problem solving and withdrawal may be different after taking into account verbal aggression.

After controlling for verbal aggression, withdrawal appeared to serve a protective function. Withdrawal was assessed with such items as "keep distant until you both cool down," "get involved in physical activity or work to cool down his/her emotions," "leave the room or walk away in the middle of a discussion," and "give in to avoid an argument." Perhaps withdrawal is a coping strategy that prevents escalations, allows for a cooling off period, and minimizes marital aggression. However, it may have other deleterious effects on other aspects of the couple's functioning.

The relationship between problem solving and marital aggression is particularly intriguing. It could be that after controlling for verbal aggression and the poor communication styles it reflects, problem solving reflects dominance. That high husband problem solving was significant whereas low wife problem solving was marginally significant would be consistent with this pattern suggesting a husband-dominated relationship. This would also be consistent with models suggesting that physical aggression is an attempt to gain compliance when problem solving and persuasion are insufficient. Thus, the combination of verbal aggression and dominance may be critically important in the development of marital aggression.

As predicted, the perception of one's relationship as egalitarian was univariately related to husband marital aggression. This replicates the findings of Coleman and Straus (1986) within a longitudinal design. However, this perception was not uniquely related to marital aggression; rather, it was related through its association with conflict styles and husband alcohol use. Also, the husband's view of power in the relationship, but not the wife's view, was of critical importance. This pattern of findings suggests that men who do not believe in egalitarian relationships engage in behaviors reflecting high verbal aggression, low withdrawal, and high problem solving. This tends to support our suggestion that the conflict styles predictive of marital aggression may be a mixture of hostility and dominance.

The nature of the husband's premarital drinking was also a strong prospective predictor of husband marital aggression. Although the model as proposed suggested that this relationship would be indirect and mediated by conflict styles, the results indicated that husband alcohol use was uniquely predictive of his marital aggression. This finding supports a large body of research indicating that alcohol consumption patterns are related to relationship violence (Leonard, 1993). Furthermore, it demonstrates the relationship in a prospective design controlling for numerous variables that could have produced a spurious relationship. This finding replicates and strengthens the recent report by Heyman, O'Leary, and Jouriles (1994) that alcohol variables were longitudinally predictive of marital aggression at 6 and 18 months into marriage. In contrast, the alcohol use of the wife was univariately predictive but only because it correlated with the alcohol use of the husband.

Although the relationship between alcohol use and husband marital aggression was significant, the processes linking these two variables remain to be fully investigated. The findings indicate that heavy drinkers engage in marital aggression to a greater extent than men who do not drink in this manner. Although we have examined many of the most theoretically relevant constructs, the possibility of a spurious relationship cannot be entirely discounted. However, the relationship could reflect a causative influence in which very heavy alcohol consumption leads to or exacerbates marital aggression, either because of the alcohol-induced cognitive disruption or because of the presence of intoxication as an excuse for aggression. It could also reflect the impact of the behavioral or neuropharmacologic sequelae of heavy alcohol consumption (e.g., hangovers, sleep deprivation, hypoglycemia). Research focused on the proximal predictors of marital aggression is of critical importance in disentangling these possibilities.

Many of the husband factors that have been previously identified as related to marital aggression were found to be significant in the present study. At the univariate level, husband hos-

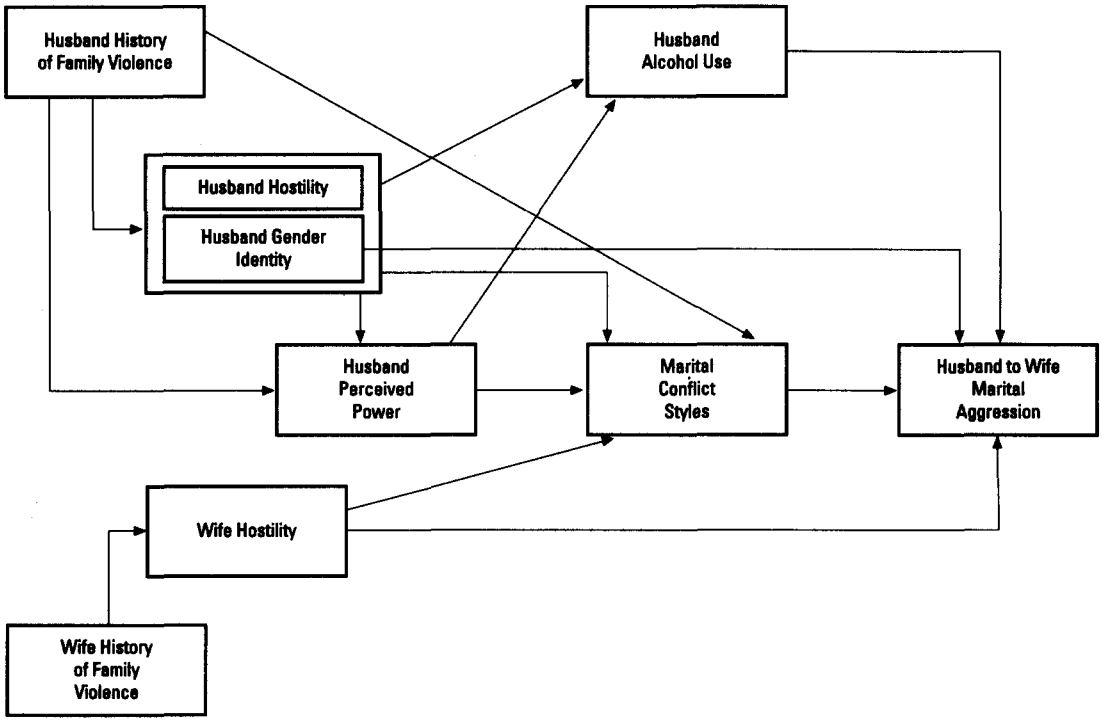

Figure 2. Summary of significant associations.

tility, gender identity, and history of family violence were longitudinally predictive of husband marital aggression. However, only husband femininity was uniquely (negatively) predictive of subsequent marital aggression. Femininity was assessed with the *F* scale of the PAQ and appears to assess an interest in and value of relationships. For example, the scale includes items such as "very gentle," "very helpful to others," and "very aware of the feelings of others." This construct of femininity shares much with constructs of interpersonal warmth and empathy. Viewed in this way, this finding supports recent research concerning the role of empathy in aggressive behavior and extends its importance to the domestic violence literature (Richardson, Hammock, Smith, Gardner, & Signo, 1994).

Overall, fewer wife constructs than husband constructs were involved in the prediction of marital aggression or in the model as a whole. Furthermore, the wife constructs that were of importance were very specific in the manner in which they were involved in the model. The wife's score on the Assault subscale of the Buss–Durkee Hostility Scale was uniquely predictive of marital aggression. This finding was unanticipated and disquieting but is consistent with findings reported by Feld and Strauss (1990). To the extent that this scale reflected actual physical aggression, this relationship could indicate that physical aggression on the part of the wife may, in some couples, initiate an aggressive exchange, or (if in response to husband's aggression) it may exacerbate his ongoing aggression. Although high scorers on this scale indicate a willingness to resort to physical aggression, we have limited information as to whether the women were actually aggressive toward their husband. We only assessed wife-to-husband aggression among the couples who completed an interview in person, and even among these couples, we do not know the sequence of physical aggression. Consequently, any interpretations must remain speculative and in need of further exploration. Moreover, although this relationship was significant with 525 individuals, it accounted for less than 1.5% unique variance. In contrast, husband factors accounted for twice as much variance (3.1%), and conflict style accounted for 4 times as much variance (6%). Conflict style, in turn, was primarily influenced by husband factors. Thus, whatever the interpretation of the relationship between wife Buss-Durkee scores and marital aggression, it needs to be viewed within the context of a behavior that is predominantly influenced by husband factors.

Although the domains covered by the model predicted marital aggression, the overall amount of variance accounted for was only moderate. Without considering premarital aggression, the model accounted for 29% of the variance in marital aggression. This includes approximately 13% that was predicted on the basis of sociodemographic factors. Clearly, there may well be other factors that would improve the prediction of marital aggression.

Although not a specific focus of the present analyses, the demographic predictors of marital violence warrant consideration. The present study found that both education and minority status were significant predictors of marital aggression. These findings are generally consistent with Cazenave and Straus (1990), who found that socioecomonic status and race were significant predictors of marital violence. After controlling for income, only Black, working-class individuals reported more aggression than Whites. They suggest that other differences between Blacks and Whites in this income class (discrimination, stress) could account for the results. Clearly, more systematic research is needed to understand the processes

that result in these racial and socioeconomic class differences in marital aggression.

Several limitations of the study should be considered in evaluating the generalizability of these findings. It is of critical importance to recognize that the nature of the sample (young, first marriages) places some restrictions on the generalizability of the findings. More importantly, the limited range of violence assessed and actually observed in this study places important restriction on generalizing the present findings to clinical samples of batterers. A second limitation concerns the level of participant involvement. Although participant attrition was relatively low at each point in the design, overall the loss of participants was quite significant. A third limitation concerns the necessity of using telephone interviews and the lower rate of marital aggression observed in these couples. These results suggest that more valid reports of marital aggression could be achieved through the use of face to face as opposed to phone interviews. Given that many influential studies of marital aggression have been conducted with phone interviews, the implications of this finding for future studies is considerable.

Finally, it is important to recognize that the model developed in this study represents a distal model of husband aggression. Consequently, we can conclude that couples characterized by verbal aggression, husband problem solving and low withdrawal, and heavy drinking by the husband experience higher levels of husband-to-wife aggression in the first year of marriage than other couples. Furthermore, this study does not address whether an individual episode of violence occurred in the presence of verbal aggression, problem solving, or heavy drinking. Other designs are necessary to investigate the episodic determinants of marital aggression.

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Received July 8, 1994
Revision received October 9, 1995
Accepted January 3, 1996 ■