

Negative Reciprocity and Communication in Couples With a Violent Husband

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To better understand the relationship dynamics of couples experiencing husband-to-wife violence, the interaction patterns of 29 domestically violent (DV), 15 distressed but nonviolent (DNV), and 13 happily married (HM) couples were examined using the Marital Interaction Coding System and lag sequential analyses. DV spouses were generally more often aversive and less often facilitative than nonviolent couples. DV couples were significantly more likely to engage in negative reciprocity than their DNV or their HM counterparts. DV wives were as likely as their husbands to reciprocate negative behavior. Furthermore, no support was found for a negative reinforcement hypothesis that husbands' aversiveness was shaped or maintained by wives' capitulation.

There have been few systematic efforts to study the interaction patterns of physically abusive husbands and their wives. However, the study of these interaction patterns through current observational methods promises to provide a unique and invaluable source of information in our continuing efforts to understand and treat domestic violence. To date, the only published research using observational measures with violent couples is the work of Margolin and her associates (e.g., Burman, John, & Margolin, 1992; Margolin, John, & Gleberman, 1988). These investigators found that physically aggressive husbands were more negative than their maritally discordant but nonviolent counterparts. The findings for the wives, however, were less clear-cut. Wives in violent marriages exhibited more negative behavior during the middle of the interaction than their nonviolent counterparts; yet by the end of the interaction, the groups were indistinguishable. This was interpreted by the investigators as evidence that wives within violent marriages tend to back down to avoid further antagonizing husbands with a history of violence (cf. Walker, 1984).

These investigators also conducted sequential analyses on the couple interactions, examining, among other things, the tendency on the part of spouses to continue negative behavior once it began. This tendency, known as *negative reciprocity*, has been shown to characterize maritally distressed couples and to distinguish them from happily married couples (Gottman, 1979). They found that wives in physically aggressive relationships were significantly more likely to reciprocate negative behavior than their nonviolent counterparts. In contrast, physically aggressive husbands, although likely to become defensive after

their partners' negative behavior, were no more likely to reciprocate offensive negative behavior than were other husbands (Burman et al., 1992). These findings were surprising in the light of clinical descriptions of batterers and battered women (e.g., Walker, 1984): Most of these descriptions suggest that it is the men who escalate and perpetuate negative interaction and that the women are relatively passive in the process. If anything, this literature would lead one to expect evidence of deescalation, rather than negative reciprocity, on the part of wives in physically aggressive relationships.

Interpretation of the findings of Margolin et al. (1988) is complicated by certain characteristics of the couples they studied. First, couples in the physically aggressive group had lower scores on the measure of marital satisfaction than couples in the other groups. Thus, physical aggression and marital distress are confounded. Regardless of whether the between group differences in marital satisfaction are statistically significant, they could be contributing to the group differences. To disentangle effects that are due to violence from those due to differences in marital satisfaction, violent couples and distressed, nonviolent couples should be matched on measures of marital satisfaction. Second, 45% of the distressed nonviolent couples did report some physical abuse over the past year, and 75% reported some prior history of physical abuse. The presence of some physical abuse in these groups creates ambiguity in the comparison between these groups and the abusive group. Last, the modal couple in the violent sample studied by Margolin et al. (1988) exhibited relatively low levels of violence. Because the criteria for being placed in that group did not require either repeated or moderate-to-serious violent episodes, the preponderance of low-level violence is not surprising. As the investigators pointed out, most of the women did not identify themselves as *battered*, and in most cases, the violence was bilateral. Maritally distressed couples often exhibit the kind of low-level violence characterized in the sample of violent couples studied by Margolin et al. (Holtzworth-Munroe et al., 1992). Results from studies such as these may not be generalizable to couples with moderate-to-severe violence, in which the women are more likely to perceive themselves as battered and in which the violence is significant enough to often result in arrests, physical injury to the wife, or both. Perhaps the surprising findings of Margolin

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et al. regarding negative reciprocity are due to the relatively mild level of violence in the physically aggressive group or to the history of violence in the distressed nonviolent group.

Our purpose was to study a sample of moderately to severely violent couples and to use a control group of distressed nonviolent couples equated on marital satisfaction so that differences could be unambiguously attributed to the presence of violence. In doing so, we hoped to more definitively test some of the unexpected findings from the Margolin sample. First, we used lag sequential analysis to examine whether there was evidence for a negative reinforcement process, as suggested by Margolin et al. (1988). Perhaps the husband's physical aggression is maintained in part by the wife's stopping her aversive behavior when he uses physical force. One might expect such a negative reinforcement process to shape and maintain physical aggression, especially if other methods used by the husband have proven unsuccessful. Although it is not feasible to experimentally test this negative reinforcement hypothesis, one can study husbands' aversive verbal behavior. To the extent that aversive verbal behavior has come to be associated with physical aggression, it should also be successful in curtailing aversive behavior on the part of the wife (Murphy & O'Leary, 1989). If the negative reinforcement hypothesis is viable, husbands' aversive verbal behavior should be followed by a decreased probability of wives' aversive behavior. Such a finding would also be consistent with Walker's (1984) notion that battered women placate their husbands by lowering their rates of aversive behavior in response to their husbands' aversive behavior: The function of placating would be to stop the escalation process and perhaps ward off physical violence.

An additional purpose of the present study was to examine the process of negative reciprocity. Before the publication of Burman et al. (1992), we would have predicted that physically aggressive husbands, rather than wives, would have been more likely to reciprocate negative behavior than their nonviolent counterparts. However, the previous study suggests that wives may be as likely to reciprocate negative behavior as husbands. With a sample of moderately to severely violent couples, we hoped to move toward resolution of this issue.

Method

Subjects

Subjects were 29 husband violent (DV) couples, 15 distressed nonviolent (DNL) couples, and 13 happily married (HM) couples. Subjects were recruited through advertisements placed in local community newspapers and public service announcements on local radio and television stations. Fifty-five of the 57 total subjects were recruited from advertisements in local community newspapers. Two subjects, both in the DV sample, were recruited through public service announcements on local television stations. Subjects were screened into the three groups based on the wives' score on the Conflict Tactics Scale (CTS; Straus, 1979) and the Locke-Wallace Marital Adjustment Scale (MAT; Locke & Wallace, 1959).¹ To qualify for the DV group, the wife had to report on the CTS (a) six or more occurrences of the husband's pushing, grabbing, shoving, slapping, hitting, or trying to hit with something within the past year; or (b) at least two or more occurrences of the husband's kicking, biting, or hitting with a fist within the past year; or (c) at least one occurrence of the husband's beating her up, threatening her with a knife or gun, or using a knife or gun within the past year. These criteria were used to assure that we attained a DV group showing moderate-to-severe levels of violence. In addition to

meeting these CTS criteria, 76% of the wives in the DV group reported having been injured by their partners' aggression, 16% seriously enough to seek medical attention. Of the husbands, 20% had been arrested on domestic violence charges. Of the 29 DV couples, 13 qualified as bilateral, based on the wives' meeting the same CTS criteria as the husbands. The decision to rely exclusively on wives' reports for classification into the DV group was based on two considerations. First, we were primarily interested in husband-to-wife violence: Given a self-serving bias, we assumed that husbands would minimize the incidence of violence. Furthermore, we were concerned that if we only chose couples in which there was a consensus on the husbands' violence, we would end up with a highly selective sample. In fact, in all 29 DV cases, husbands admitted to at least some violence.

Qualification for the DNL group required wives' MAT scores of 85 or below as well as no incidents of husband violence reported on the CTS (threatening to hit or throw something at the wife; throwing, smashing, hitting, or kicking something while in a dispute; or throwing something at her) within the past 5 years. Couples were also excluded from this condition if the husband had ever pushed, grabbed, shoved, slapped, kicked, bit, hit with a fist, hit or tried to hit with something, beat up, threatened with a knife or gun, or used a knife or gun on his wife. Qualification for the HM group required a MAT score of 115 or higher as well as the same violence exclusion criteria required for the DV condition. All couples had been married for at least a year before entering the study, and both members were required to be over 18 years of age. Demographic variables associated with this sample are summarized in Table 1, including socioeconomic status (SES), age, monthly income, years of education, and length of marriage. Socioeconomic status was based on Stevens and Cho's (1985) measure of SES. The SES scores are derived from a regression equation based on occupational prestige, education, and income as associated with job title.

Procedure

Subjects were informed that the purpose of the study was to learn more about how different couples handle conflict within their relationships. Each member of the couple was asked to fill out the Areas of Disagreement Scale (Knox, 1971), on which they indicated how much they disagreed about different topics and how long they had disagreed about each. The topics included money, communication, in-laws, sex, religion, recreation, friends, alcohol, drugs, children, and jealousy, as well as any other areas of disagreement they may have volunteered. An interviewer then discussed each of the areas with the couple, starting with the items rated highest and moving down until two topics were selected that were important to the couple and on which each partner had a perspective at odds with the other. At this point, the couple was asked to work toward a resolution of the two issues. Each partner received \$40 for participation in this phase of the study. These marital interactions were gathered as the second component of a larger study. During the initial phase of the study, individual interviews were conducted with each member of the couple, and several questionnaires were completed. Each member of the couple received \$40 for their participation in the initial phase of the study. The Dyadic Adjustment Scale (DAS; Spanier, 1976) was given as a measure of marital satisfaction at the time of the initial interview.

Marital Interaction Coding System

The resulting 15-min marital interaction videos were subsequently coded using the third revision of the Marital Interaction Coding System (MICS-III; Weiss & Summers, 1983). Coding was done by four coders who were required to memorize the codes from the MICS-III.

¹ The MAT was used exclusively as a screening instrument. The Dyadic Adjustment Scale (DAS; Spanier, 1976), given at the time of the individual interview, was the measure used in all analyses concerning marital satisfaction.

Table 1
Means and Standard Deviations for Demographic Variables

| Variable | DV | | DNV | | HM | |
|------------------|--------------------|-------|---------------------|-------|---------------------|-------|
| | M | SD | M | SD | M | SD |
| SES ^a | | | | | | |
| Husband | 29.56 _a | 17.69 | 29.18 _a | 17.69 | 47.58 _b | 23.31 |
| Wife | 21.29 | 22.61 | 21.92 | 22.17 | 31.65 | 19.82 |
| MI | | | | | | |
| Husband | 1,698 | 1,238 | 2,154 | 1,888 | 3,609 | 6,467 |
| Wife | 792 | 764 | 782 | 760 | 1,483 | 1,967 |
| YE | | | | | | |
| Husband | 13.18 _a | 13.18 | 14.33 _{ab} | 2.07 | 15.08 _b | 2.35 |
| Wife | 13.93 | 2.21 | 13.73 | 2.17 | 14.67 | 2.57 |
| Age | | | | | | |
| Husband | 34.62 _a | 10.28 | 40.67 _{ab} | 7.82 | 43.38 _b | 15.34 |
| Wife | 34.48 | 8.55 | 37.33 | 10.20 | 41.62 | 15.72 |
| DAS | | | | | | |
| Husband | 91.76 _a | 14.97 | 94.53 _a | 18.42 | 125.77 _b | 11.48 |
| Wife | 83.31 _a | 17.92 | 81.33 _a | 19.47 | 122.23 _b | 9.20 |
| YM | 6.21 | 4.51 | 10.29 | 8.65 | 9.62 | 8.89 |

Note. Means not sharing a common subscript differ significantly ($p < .05$). DV = domestically violent ($n = 29$); DNV = distressed nonviolent ($n = 15$); HM = happily married ($n = 13$); SES = socioeconomic status; MI = monthly income; YE = years of education; DAS = Dyadic Adjustment Scale; and YM = years married.

^a SES scores are derived from a regression equation based on occupational prestige, education, and income as associated with job title.

Each coder practiced coding pilot tapes under the supervision of James V. Cordova until they consistently obtained reliability scores approaching or above 70% agreement as calibrated against James V. Cordova's coding of the interaction. Once coder reliability was established, coders began coding data from the study proper. All coders were subject to random reliability checks, and weekly calibration meetings were held to maintain consistency. Coders were kept blind to the group status of the couples they coded. MICS-III codes were initially divided into three broad categories: (a) *aversive behaviors* (criticize, disagree, put down);² (b) *facilitative behaviors* (agree, approve, accept responsibility, assent, compliance, compromise, humor, mindread positive, negative solution, paraphrase/reflection, positive solution, smile/laugh); and (c) *neutral behaviors* (normative, problem description external, problem description internal, question, talk).

Given that each partner was allowed only one summary code per turn for the final analysis, coders were instructed to review their initial coding and judge which summary code was most representative of a particular turn. Therefore, although it was sometimes the case that more than one summary code could be used within a particular turn, coders judged which of the codes was the most salient for that turn. Reliability between the four coders and James V. Cordova was calculated on these summary scores for approximately 28% of the sample using the kappa statistic. The overall kappa based on all codes was $\kappa = .62$. Kappas for the six summary codes were as follows: Husband Aversive, $\kappa = .79$; Husband Facilitative, $\kappa = .64$; Husband Neutral, $\kappa = .63$; Wife Aversive, $\kappa = .75$; Wife Facilitative, $\kappa = .67$; and Wife Neutral, $\kappa = .60$.

Results

Group Differences on Demographic and Marital Satisfaction Variables

Group means, standard deviations, and results of post hoc analyses between group comparisons for demographic variables and DAS scores are depicted in Table 1.

The analysis of variance (ANOVA) uncovered significant between-group differences for husband's SES, $F(2, 54) = 4.51$, $p < .05$; husband's education level, $F(2, 52) = 3.93$, $p < .05$; and husband's age, $F(2, 54) = 4.30$, $p < .05$. Tukey post hoc tests revealed that differences in education level, SES, and age were due to the two maritally distressed groups' (DV and DNV) differing from the HM group. DV husbands did not differ significantly from DNV husbands on any of these three variables. Because our major hypotheses involved comparisons between the DV and DNV groups, the obtained group differences on these demographics were not of concern. Furthermore, separate correlations between these demographic variables and the dependent variables within each group revealed no significant correlations; thus, there was no need to use these demographic variables as covariates in analyses involving the HM group. Finally, although the differences in means for years married appear quite large, this difference is entirely due to one outlier, a couple in the DNV group who had been married for 37 years. However, even with this couple in the analysis, group differences were not statistically significant, $F(2, 53) = 2.12$, ns .

On the wives' DAS, there were the expected between-group differences, $F(2, 51) = 27.62$, $p < .001$, with HM wives reporting significantly more marital satisfaction than DV wives and

² We used summary codes to increase the number of data points for sequential analyses. The intercorrelations between the separate codes ranged from $r = .37$ to $r = .48$ ($p < .01$), and all were statistically significant. Not only did these codes converge empirically, but also the summary code for aversive parallels the summary code of Margolin et al. (1988), *offensive negative*, and the typical summary code used for aversive behavior in Gottman's research (*conflict engagement*; Burman et al., 1992; Gottman, in press).

DNV wives. DV and DNV groups did not differ significantly on the wives' DAS. Husbands' DAS also showed significant between-group differences, $F(2, 54) = 23.67, p < .001$. These differences were accounted for by differences between the HM group and the other two groups as well, with the HM husbands reporting significantly more marital satisfaction than DV husbands and DNV husbands. DV and DNV groups did not differ significantly on the husbands' DAS.

Group Differences in Base Rates of Facilitative and Aversive Behavior

Table 2 shows the base rates of aversive and facilitative behavior for both husbands and wives in each group. ANOVAs revealed a significant group effect for both aversive, $F(2, 108) = 19.43, p < .001$, and facilitative, $F(2, 108) = 32.07, p < .001$, behavior. No significant effect was found for gender on either aversive, $F(1, 108) = 1.36, ns$, or facilitative, $F(1, 108) = 0.04, ns$, behavior. Tukey post hoc tests showed the DV group was significantly more aversive than the DNV group. The DNV group was in turn significantly more aversive than the HM group. The DV group was significantly less facilitative than the DNV group, and the DNV group was in turn significantly less facilitative than the HM group.

Analyses of Couples' Interactions by Thirds

To ascertain whether groups differed in how the probability of aversive behavior changed over time, the total number of events in the couples interactions were divided into equal thirds, and the probability of both husband and wife aversive behavior was measured at each third of the interaction. With couple serving as the unit of analysis, a $3 \times 2 \times 2$ (Group \times Gender \times Thirds) ANOVA was calculated with the last two factors repeated measures. The probability of aversive behavior was the dependent variable. Results showed a significant effect for group, $F(2, 54) = 13.01, p < .001$. Tukey post hoc comparisons showed significant differences between all groups. Effects for Thirds, Group \times Thirds, Gender \times Thirds, and Group \times Gender \times Thirds were corrected for departures from sphericity (Huynh-Feldt $\epsilon = .96$).³ A significant effect was shown for thirds, $F(2, 104) = 3.28, p < .05$, and for the Gender \times Thirds interaction, $F(2, 104) = 5.47, p < .01$. There were no significant effects for gender, $F(1, 54) = 2.76, ns$; Group \times Gender, $F(2, 54) = .07, ns$; Group \times Thirds, $F(4, 108) = 2.36, ns$; or Group \times Gender \times Thirds, $F(4, 108) = 1.91, ns$. Means and standard deviations for husbands and wives in each group during each third are shown in Table 3.

Sequential Analyses

The transitional probabilities needed for sequential analyses and corresponding z scores were calculated using Bakeman and Gottman's (1986) equations for lag sequential analyses. Note that the use of the z -score controls for the base rate of the target code, or the unconditional probability that the target code will occur. Z scores, therefore, represent the degree to which the target code is contingent on the occurrence of the given code. Z scores above 1.96 are considered significant at the .05 level. Significant z scores represent the occurrence of the target code more often relative to the given event than would be expected, given the occurrence of the target event overall.

Table 2
Mean Base-Rate Proportions of Husband Aversive, Husband Facilitative, Wife Aversive, and Wife Facilitative Behavior

| Behavior | DV | | DNV | | HM | |
|--------------|----------|-----------|----------|-----------|----------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Husband | | | | | | |
| Aversive | 15.76 | 8.87 | 10.72 | 7.40 | 4.42 | 5.42 |
| Facilitative | 7.30 | 5.48 | 12.49 | 5.74 | 18.62 | 6.39 |
| Wife | | | | | | |
| Aversive | 18.15 | 8.79 | 12.06 | 7.52 | 6.30 | 7.61 |
| Facilitative | 7.32 | 6.74 | 11.62 | 6.77 | 20.03 | 10.78 |

Note. DV = distressed violent ($n = 29$); DNV = distressed nonviolent ($n = 15$); HM = happily married ($n = 13$).

In a search for patterns corresponding to the hypothesis that the husbands' aversive behavior is maintained in part by the cessation of the wives' aversive behavior, we examined the transitional probability of nonaversive wife behavior (facilitative + neutral) given husband aversive behavior at Lag 1. An ANOVA revealed no significant differences between groups at Lag 1, $F(2, 54) = .61, ns$. Furthermore, mean z scores corresponding to the probability of nonaversive wife behavior given aversive husband behavior were nonsignificant for all groups at Lag 1. Thus, there was no evidence that husbands' aversiveness was reinforced by the cessation of wives' aversiveness.

Negative reciprocity was defined as the occurrence of aversive behavior on the part of one partner given aversive behavior by the other. Therefore, the occurrence of a husband aversive behavior given a wife aversive behavior was considered a demonstration of negative reciprocity by the husband, and the occurrence of a wife aversive behavior given a husband aversive behavior was considered a demonstration of negative reciprocity by the wife. Negative reciprocity was measured at Lags 1, 3, 5, 7, and 9. Each lag corresponds to the distance of the target event from the given antecedent event. The first event after the given antecedent is said to occur at Lag 1, the second event at Lag 2, and so on. Within this study, each event represented one partner's full turn as speaker, with each turn ending when the other partner successfully gained the floor. This arrangement resulted in even-numbered events (Lags 2, 4, 6, 8, and 10), representing partners' responses to their own given antecedent behavior. Therefore, Lags 1, 3, 5, 7, and 9 were the focus of our analyses, because it was these lags that represented one partner's responses to the other.

With couple serving as the unit of analysis, a $3 \times 2 \times 5$ (Group \times Gender \times Lag) ANOVA was calculated with the last two factors repeated measures. Results showed a significant effect for group, $F(2, 54) = 6.82, p < .01$. Departures from sphericity were corrected for the Lag and Group \times Lag effects (Huynh-

³ Huynh-Feldt ϵ is an estimate of the adjustment to be made to the numerator and denominator degrees of freedom to correct for violations of the sphericity assumption. Both numerator and denominator degrees of freedom are multiplied by epsilon and the significance of the F ratio is evaluated with the new degrees of freedom. All effects involving repeated measures with more than one degree of freedom were corrected.

Table 3
Mean Probability of Aversive Behavior
During Each Third of the Interaction

| Interaction by third | DV | | DNV | | HM | |
|----------------------------|----------|-----------|----------|-----------|----------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Husband | | | | | | |
| First | 14.58 | 10.92 | 10.09 | 7.99 | 5.15 | 6.20 |
| Second | 15.58 | 9.56 | 13.32 | 10.12 | 4.42 | 5.61 |
| Third | 17.05 | 10.87 | 8.70 | 7.49 | 3.59 | 5.27 |
| Wife | | | | | | |
| First | 15.23 | 10.22 | 7.47 | 7.84 | 6.69 | 7.39 |
| Second | 18.07 | 9.87 | 13.30 | 6.02 | 6.53 | 8.39 |
| Third | 21.17 | 10.23 | 15.78 | 13.55 | 5.55 | 8.54 |

Note. DV = distressed violent ($n = 29$); DNV = distressed nonviolent ($n = 15$); HM = happily married ($n = 13$).

Feldt $\epsilon = .77$), as well as for the Gender \times Lag and Group \times Gender \times Lag effects (Huynh-Feldt $\epsilon = .96$). Significant effects were revealed for lag, $F(3, 166) = 9.99, p < .001$, and for the Group \times Lag interaction, $F(6, 166) = 2.65, p < .05$. There were no significant effects for gender, $F(1, 54) = 0.92, ns$; Group \times Gender, $F(2, 54) = 0.16, ns$; Gender \times Lag, $F(4, 207) = 0.90, ns$; or Group \times Gender \times Lag, $F(8, 207) = 1.01, ns$.

Aggregate z scores as well as the results of between group comparisons are shown in Table 4.⁴ Both DV and DNV groups demonstrated significant negative reciprocity at all five measured lags. Within the HM group, negative reciprocity was only evident at Lag 1. For between group comparisons, to protect against Type I error, the criterion for significant differences was set at $p < .01$ ($z > 2.575$). Given this criterion, DV couples were significantly more likely to demonstrate negative reciprocity at Lags 1, 3, 5, and 9 than were DNV couples. In other words, the occurrence of an aversive behavior by either spouse was significantly more likely to result in an aversive response in the DV group than in the DNV group. This was true immediately after the given aversive behavior (Lag 1) as well as during the second (Lag 3), third (Lag 5), and fifth (Lag 9) turn of the responding spouse. No such group differences were found in this sample between the DNV and HM groups.

Discussion

In the present study, DV couples differentiated themselves from their nonviolent counterparts in a variety of ways. Like Margolin et al. (1988), we found that DV husbands exhibited a higher proportion of aversive behavior than did their nonvio-

lent counterparts. In the Margolin et al. study, the DV group was more maritally distressed than was the DNV group; thus, interpretation of these significant differences was ambiguous. Because our DNV group was matched with the DV group on marital satisfaction, we have unambiguously determined that the increased aversives in DV couples are not due to marital distress per se.

The sequential analyses provided no support for a negative reinforcement hypothesis. In these conflict discussions, women showed no signs of using positive or neutral behavior to turn off the husbands' aversiveness. It is still possible that a process akin to negative reinforcement may operate in the natural environment or when arguments escalate into violence. In fact, it may be the inability on the part of husbands to get what they need verbally that helps shape physical aggression, and eventually, the latter may be the only method found by the husbands to get what they want from their wives (e.g., control and subservience). If this were the case, one would not expect an obvious negative reinforcement process to manifest itself at the verbal level, even though it may be present in interactions that escalate to violence.

Given that we found no significant Group \times Third or Group \times Gender \times Third interaction, our results confirm those of the previous study (Burman et al., 1992) in that we found no evidence of differences between groups in terms of their escalation in negativity over time.

Another way of examining escalation is by studying negative reciprocity. There were clear differences in patterns of negative reciprocity between the groups. In the case of both DNV and DV couples, negative reciprocity not only was present, but also continued for as many lags as we were able to calculate. However, at every point in time except Lag 7, DV couples showed a greater tendency to reciprocate negative behavior than did DNV couples. Although there was a trend toward decreased reciprocity in the DV sample after Lag 3, there was still significantly greater reciprocity than there was in the control groups up through Lag 9.

Women were every bit as inclined toward negative reciprocity as were men, even in the DV condition. When considered along with the frequency data and the sequential analyses testing the negative reinforcement hypothesis, there is virtually no evidence from these interaction sequences that battered women placate their husbands or attempt in any way to neutralize their aversive behavior. The behavior of the DV wives in this sample does not suggest passivity, docility, or surrender. Rather, the women are continuing the conflict engagement, even though they have histories of being subjected to physical abuse. There was more of this than we expected: Although these women were being beaten, they had not been beaten into submission. They were standing up to, rather than surrendering to, their battering husbands.

Although the Burman et al. (1992) study also found that women in physically aggressive relationships reciprocated their

Table 4
Mean Negative Reciprocity Z Scores

| Lag | DV <i>M</i> | DNV <i>M</i> | HM <i>M</i> |
|-----|--------------------|-------------------|-------------------|
| 1 | 13.41 _a | 5.34 _b | 3.93 _b |
| 3 | 13.52 _a | 4.53 _b | 1.01 _c |
| 5 | 10.18 _a | 3.29 _b | 1.08 _b |
| 7 | 6.68 _a | 4.22 _a | 0.61 _b |
| 9 | 6.73 _a | 2.63 _b | 1.01 _b |

Note. Groups with different subscripts are significantly different ($p < .01$). DV = distressed violent ($n = 29$); DNV = distressed nonviolent ($n = 15$); HM = happily married ($n = 13$).

⁴ To aggregate z scores for between group comparisons: $Z_{\text{GROUP}} = \Sigma Z_{\text{COUPLE}} / \sqrt{n}$ (Rosenthal, 1991; Rosenthal & Rosnow, 1991). Mean z scores above 2.575 are considered significant at the .01 level. The formula for comparing two z scores is $Z = (Z_1 - Z_2) / \sqrt{2}$ (Rosenthal & Rosnow, 1991).

partners' negative behavior, their sample consisted of women who did not perceive themselves as battered and of relationships in which the violence was relatively mild and usually bilateral. In contrast, our sample of DV couples was defined by husband-to-wife violence and had inclusion criteria that were more stringent. Our population was more like those descriptions of battered women in the clinical literature (cf. Walker, 1984). Thus, this study shows that even in a more severely violent population, women in abusive relationships are at least as likely as their husbands to reciprocate verbally aversive behavior.

Although these results appear to be surprising in the light of descriptions such as Walker's (1984) of the battered women's syndrome, there are several factors that should be considered in interpreting them. First, the interactions may have not been representative of what transpires between partners in the natural environment. The DV women may have felt safer in the laboratory and thus more willing to reciprocate and in other ways exhibit aversive behavior than they would normally be at home. Future research should attempt to measure these processes in the natural environment as a way of determining their generalizability. Second, these findings, even if confirmed by naturalistic studies, may not be as contradictory to clinical descriptions as they first appear. Saunders (1986), for example, suggested that women in abusive relationships often match or exceed the level of their husbands' verbal aggression, with one goal being to bring on the violence so as to put an end to the protracted tension. Finally, to the extent that these findings are confirmed in more naturalistic settings, there may still be subpopulations of DV couples who show interactional dynamics involving placating, negative reinforcement, and the absence of negative reciprocity in wives. Even though the DV sample in this study was closer to a clinical population than the one studied by Margolin et al. (1988), it is quite conceivable that an even more severely violent sample would have yielded results that more clearly resemble the descriptions from the clinical literature.

To summarize, the present study (a) disconfirmed a negative reinforcement process in the verbal interactions of DV couples; (b) determined that the increased aversives in DV couples are not due to marital distress per se; and (c) identified patterns of reciprocity in DV wives as well as husbands, even in a sample of moderately to severely violent couples selected for husband-to-wife violence.

A limitation of the study should be noted. We have no way of knowing whether groups differed in the severity of problems discussed. It could be, for example, that DV couples discussed problems that were more severe or harder to resolve than those discussed by DNV couples. Differences in problem severity could account for the deficiencies in the interactions of DV couples. This possibility reminds one that in the marital interaction literature it is often difficult to tease apart process from content problems: Do couples communicate poorly because their problems are very difficult to solve, or do their problems look difficult to solve because they deal with them so poorly? The communication problems may very well be secondary, rather than primary.

Finally, it is of interest that DNV couples did not show significantly greater degrees of aversive behavior and negative reci-

procity than did their HM counterparts. In past studies, maritally distressed couples have routinely been shown to exceed nondistressed couples in their tendency to reciprocate negative behavior. We can only speculate about the inconsistency between this and other studies: This is one of the first studies to pull out the violent couples from maritally distressed samples. It could be that the consistent differences found in past studies are primarily the result of the violent couples included in the maritally distressed samples.

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