

## Attributions and Behavior in Marital Interaction

Thomas N. Bradbury  
University of California, Los Angeles

Frank D. Fincham  
University of Illinois at Urbana-Champaign

To examine whether spouses' attributions for events in their marriage are related to their behavior in interaction, spouses were asked to report their marital quality, to make attributions for marital difficulties, and to engage in problem-solving discussions. Study 1 demonstrated that spouses' maladaptive attributions were related to less effective problem-solving behaviors, particularly among wives. Study 2 showed that spouses' maladaptive attributions were related to higher rates of negative behavior and, for wives, to increased tendencies to reciprocate negative partner behavior. In both studies attributions and behavior tended to be more strongly related for distressed than nondistressed wives. These results support social-psychological models that posit that attributions are related to behavior and models of marriage and close relationships that assume that maladaptive attributions contribute to conflict behavior and relationship dysfunction.

Observational studies of interpersonal behavior in marriage indicate that dissatisfied couples, compared with satisfied couples, show higher rates of negative behavior, more reciprocation of negative behavior, and a greater degree of behavioral stereotypy or rigidity (for reviews see Christensen, 1987; Weiss & Heyman, 1990). Although these studies have illuminated important aspects of marital interaction, the behavioral model that guides them has been criticized for limiting the understanding of marital dysfunction. For example, within this framework, little consideration is given explicitly to spouses' prior experiences in the relationship, to their expectations and goals for the marriage, and to the process by which behavior and satisfaction come to be related (e.g., see Bradbury & Fincham, 1989; Margolin, 1983). In an effort to provide a more complete account of marital dysfunction, investigators have shifted their attention to intrapersonal factors that may influence marital satisfaction and interpersonal behavior.

A common focus of research in this developing literature is the attributions or explanations that spouses make for events that occur in their marriage. According to these studies, dissatisfied spouses, compared with satisfied spouses, offer attributions that accentuate the impact of negative events and diminish the impact of positive events. For example, a happily married wife might ascribe her husband's lack of interest in sex to pressures on him at work, whereas a distressed wife might attribute this same behavior to her husband's lack of love for her. Moreover, a satisfied husband might attribute an unexpected gift from his wife to her wanting to do something special

for him, whereas a dissatisfied husband might view the same act as an attempt on her part to justify spending money on herself. This association between attributions and marital satisfaction, which appears to be quite robust (see Bradbury & Fincham, 1990), is viewed as important because attributions may initiate or maintain marital distress; recent longitudinal studies lend support to this possibility (Fincham & Bradbury, 1987, 1991b).<sup>1</sup>

Despite the progress made toward understanding spouses' attributions, fundamental questions remain regarding their actual impact in marriage. Indeed, a primary reason for studying attributions in marriage—that they might provide an explanation for why satisfied and dissatisfied couples differ in their behavior—has received only scant attention. The purpose of the present research, therefore, is to determine whether spouses' attributions for events in their marriage are related to the behaviors they exhibit when interacting with their partner. A second purpose is to determine whether the association between attributions and behavior differs across distressed and nondistressed marriages. Investigation of these issues was motivated in part by the need to examine attributions in relation to observational data rather than self-report data, thus providing an assessment of their importance in marriage that is not confounded by common method variance. Before describing the present studies in greater detail, we first review conceptual and empirical work that bears on the interplay of attributions and behavior in marriage.

### Attributions and Marital Behavior: Theory and Research

A common assumption of attribution models in social psychology is that an individual's attributions will affect his or her subsequent behavior (e.g., Heider, 1958; Kelley, 1973). For exam-

---

Thomas N. Bradbury was supported in this research by National Research Service Award MH 09740-01 from the National Institute of Mental Health and by National Science Foundation Grant BNS 88-13052. Frank D. Fincham was supported in this research by National Institute of Mental Health Grant MH 44078-01.

We thank Susan Campbell, Andrew Christensen, Cathy Cohan, Ben Karney, Anne Peplau, and Bernard Weiner for their helpful comments on an earlier version of this article.

Correspondence concerning this article should be addressed to Thomas N. Bradbury, Department of Psychology, University of California, 405 Hilgard Avenue, Los Angeles, California 90024-1563.

---

<sup>1</sup> For brevity, we use the term *maladaptive* to characterize attributions that, compared with *adaptive* or *benign* attributions, exaggerate the destructive aspects of negative partner behavior or minimize the constructive aspects of positive partner behavior. No causal effect of attributions on the quality of marriage is intended.

ple, Heider (1944, p. 367) noted that "our reaction to a disagreeable experience . . . is greatly influenced by the attribution to a source, which we may see in another person, in the workings of chance, or in ourselves. . . . When an injury is attributed to a personal agent, it is more likely to lead to an aggressive reaction." This notion is basic also to applications of attribution models, particularly in the area of marriage and close relationships (e.g., Baucom & Epstein, 1990; Bugental, 1987; Dodge, Pettit, McClaskey, & Brown, 1986; Kelley et al., 1983; Rusbult, Johnson, & Morrow, 1986; Weiss, 1984). The proposed association between attributions and marital behavior is perhaps stated most explicitly in the contextual model of marriage (Bradbury & Fincham, 1987, 1988, 1991a); hence, we examine this model in greater detail.

### *A View From the Contextual Model*

Following Raush, Barry, Hertel, and Swain's (1974, p. 11) observation that "an act can seldom be independent of the context of other events in which it is embedded," the contextual model emphasizes that behaviors exchanged in an interaction can mean different things, depending on other events occurring in the interaction. According to this model, when one spouse behaves, the partner attends to and perceives that behavior, assigns some meaning to it, and then exhibits a behavior of his or her own. The events that intervene between the observable behavior of the spouse and the observable behavior of the partner are referred to as the partner's *processing stage*, which is assumed to occur rapidly and without much conscious awareness. An interaction can be viewed as comprising many such sequences of spouse's behavior → partner's processing → partner's behavior → spouse's processing → spouse's behavior, and so forth. The processing stage itself is hypothesized to be influenced by the nature of the stimulus behavior and many other factors, including momentary or transient thoughts and emotions experienced by the individual and by his or her relatively stable psychological characteristics, such as personality, chronic mood state, attitudes and beliefs about relationships, memories of prior events in the relationship, degree of satisfaction with the marriage, and so on. This framework expands the behavioral model of interaction beyond its exclusive emphasis on behavior and satisfaction by incorporating a variety of affective and cognitive constructs and in so doing seeks to permit broader examination of the relationships among intrapersonal phenomena and the interpersonal behaviors that spouses exhibit.

An important contributor to the meaning that spouses assign to partner behavior is the attribution or explanation made for that behavior. As Kelley and Thibaut (1978, p. 209) noted, "Interdependent persons have strong interests in explaining one another's behavior. Each wants to know what the other person is really like in order to know what can be expected of him in the future and under what conditions his behavior will change." The motivation to explain, predict, and modify interpersonal events is heightened when they are negative, important, and self-relevant (Weiner, 1985b), and in the domain of marriage, this typically involves negative behaviors exhibited by the partner and associated relationship difficulties encountered by the couple. The attributions offered by spouses for such events

are assumed to derive from an accumulation of experiences in interaction with the partner, and in subsequent situations when the negative behavior or difficulty occurs it is likely to be understood or interpreted in terms consistent with that attribution.

The behavior that a spouse exhibits in these situations will depend in part on the attribution that he or she has made and, although the behavioral response can take many forms (e.g., clarification of own point of view, rejection of the partner's position, expression of support or optimism), it is expected that adaptive or benign attributions will give rise to behaviors that promote the resolution of the difficulty, whereas maladaptive attributions will lead to behaviors that allow the difficulty to persist. The predicted association between attributions and behavior follows from the view that if a spouse makes a maladaptive attribution for a marital difficulty (e.g., "We don't spend much time together because you insist on staying up all night watching TV!") then that spouse will tend to express emotions that discourage problem solving (e.g., anger, contempt), to convince the partner that this explanation is the correct one and that he or she is at fault for the problem (which may lead to defensiveness by the partner and further anger by the spouse) or to persuade the partner to somehow change his or her behavior (e.g., by inducing guilt: "Sometimes I think you would rather watch TV than be with me"). In contrast, an attribution by the spouse that does not implicate the partner directly ("We don't spend much time together because we can't get our schedules in synch—you come home late and want to relax in front of the TV, and I have to be in bed early so I can get up and go off to work in the morning") may lead the spouse to exhibit behaviors that have a different emotional tone and to identify more fruitful solutions (e.g., "I'm really worried that we're not spending enough time together—do you think your boss would let you come to work a few hours early every now and then?").

Thus, even though attributions are not expected to determine a spouse's behavior entirely, the contextual model does predict an association between the degree to which a spouse's attributions for relationship difficulties are maladaptive and his or her tendency to engage in behaviors that hinder resolution of such difficulties. A pattern of maladaptive attributions followed by negative behavior and the perpetuation rather than resolution of marital difficulties may contribute to confirmation of the attribution, further exchanges of negative behavior, and declines in marital satisfaction over time. The validity of this supposition, which is consistent with the aforementioned longitudinal data relating maladaptive attributions to decreases in marital quality (Fincham & Bradbury, 1987, 1991a), rests to a large degree on whether there is a link between attributions and behavior in marital interaction. The nature of this link and its operation in distressed and nondistressed marriages is the focus of the present research.

### *Review and Analysis of Prior Research*

An association between attributions and behavior in marital interaction appears plausible, yet only a few studies have addressed this issue. In an experimental study, Fincham and Bradbury (1988) found that a group of dissatisfied spouses exhibited higher rates of negative behavior when they were led to

believe that their partner was responsible for writing a negative description of them, relative to a group of dissatisfied spouses led to believe that their partner was not responsible for writing the negative description. Spouses' attributions for conflicts in hypothetical marriages were assessed by Doherty (1982), who reported that the tendency of wives to infer negative intent on the part of the portrayed character covaried with the amount of verbal criticism they displayed in interaction with their husbands. Fincham and O'Leary (1983) asked spouses to make attributions for hypothetical positive and negative marital events and to report their likely affective and behavioral responses to those events and found that attributions were related to affective reactions for positive events. A subsequent study by Fincham, Beach, and Nelson (1987) indicated that spouses' attributions were related to their reported affective and behavioral responses, but only when the attribution judgments concerned the partner's accountability for their actions. Related results were presented by Sillars (1985), who found that the degree to which spouses blamed their partner covaried with more negative behavior and less positive behavior in interaction. Finally, Miller, Lefcourt, Holmes, Ware, and Saleh (1986) determined that spouses who reported a relatively external locus of control for marital outcomes were less engaged in a discussion of hypothetical conflicts and produced solutions to those conflicts that were of lower quality (for a detailed review of these studies see Bradbury & Fincham, 1990).

These studies indicate that attributions may indeed be related to behavior in marital interaction in the manner specified by the contextual model. However, rival interpretations for these data limit the conclusions that can be drawn from them and, at the same time, point to methodological refinements that need to be implemented in future research. These include (a) the need to observe behavior in interaction rather than to rely on spouses' self-reports of their behavior, as the latter are subject to distortion and may overestimate the association between attributions and behavior because of common method variance; (b) the need to measure not only causal attributions, which pertain to who or what caused some marital event, but also responsibility attributions, which pertain to accountability and blameworthiness, as both sorts reflect important attributional phenomena in marriage (Bradbury & Fincham, 1990; Shaver & Drown, 1985; see the Conceptualization of Attributions section); (c) the need to study spouses who represent the full range of marital satisfaction so that results are potentially generalizable to all couples; and (d) the need to control for the effects of marital satisfaction to demonstrate that the association between attributions and behavior is not an artifact of their shared variance with satisfaction.

## Overview of the Present Research

### *Hypotheses*

Two studies incorporating these refinements were conducted to test the proposition that attributions are related to behavior in marital interaction. On the basis of the contextual model outlined earlier, we hypothesized that spouses' attributions for problems occurring in their marriage would be related to behaviors they exhibited when attempting to resolve those problems

such that attributions portraying the partner in a negative light would covary with behaviors that interfere with problem solving. Any associations between attributions and behavior were expected to remain after controlling for the effects of marital satisfaction, which might otherwise inflate these associations.

A second purpose of these studies was to determine whether the association between attributions and behavior is different at different levels of marital satisfaction. A testable hypothesis in this case begins with an examination of the basic role assigned to attributions in most attribution models. Specifically, if an attribution enables the perceiver to understand and modify unpleasant or undesirable circumstances, then a person who is experiencing circumstances of this sort should be especially inclined to engage in attributional activity. The resulting attribution is likely to be relatively well developed, and it should guide how the individual behaves to alter the difficulty. In contrast, the attribution made by an individual contending with a less challenging situation is likely to be less well developed and less critical for resolving the problem at hand and, as a consequence, may have a weaker effect on the behaviors enacted to resolve the problem. Applied to the study of marriage, this analysis gives rise to the hypothesis that the attributions made by spouses in distressed marriages will be more predictive of behavior than will be the attributions made by the spouses in nondistressed marriages.

An important extension of this line of reasoning is that the tendency to engage in meaningful attributional analysis for marital difficulties will be great not only for those individuals who are in distressed marriages, but also for women, who are often more strongly oriented than men to the socioemotional dimension of close relationships (see Worell, 1988). The relative importance that women accord their relationships is likely to contribute to their motivation for developing informative attributions about problems that arise in those relationships, and in turn, those attributions should be more predictive of behaviors enacted to alleviate such problems, compared with the attributions made by men. Thus, the second hypothesis can be made more specific: A stronger association between attributions and behavior is expected for distressed than nondistressed spouses, especially in the case of wives.

### *Conceptualization of Attributions*

Finally, two important considerations arise when examining the association between attributions and behavior. The first concerns the relationship events for which attributions are made. Although it is possible to assess attributions for discrete partner behaviors in interaction, this approach rests on the questionable assumption that attributions are typically elicited by such stimuli (see Eiser, 1983), and data indicate that spouses may not make attributions for behaviors at this level of specificity (Camper, Jacobson, Holtzworth-Munroe, & Schmalings, 1988). The present studies therefore focus instead on the attributions that spouses make for current marital difficulties, which, according to the literature on marital therapy, are a common stimulus for attributional activity (e.g., Baucom & Epstein, 1990). If a reliable association is obtained between attributions and behavior at this level of analysis, subsequent stud-

ies will be justified in investigating the molecular process by which attributions lead to specific behaviors in interaction.

The second consideration involves the types of attributions that are studied in relation to behavior. The earliest studies of attributions in marriage evolved from the learned helplessness formulation of depression and, accordingly, emphasized differences between distressed and nondistressed spouses in how they perceived the *causes* of relationship events (e.g., Fincham & O'Leary, 1983). However, recent theoretical developments recognize that this formulation neglects the interpersonal context of attributions, and the domain of marital attributions has therefore expanded to include attributions of *responsibility* (see Fincham & Bradbury, 1991a; Shaver, 1985). Whereas causal attributions concern the factors that produce an event or behavior, responsibility attributions involve an individual's accountability to another person for some misdeed, and they rest on such judgments as whether the individual behaved intentionally and with selfish motivation. Attributions of responsibility are thought to presuppose, or follow from, attributions of cause (i.e., if someone did not cause something, he or she probably will not be held responsible for it; Fincham & Jaspars, 1980) and, as a consequence, the two classes of attributions are expected to covary. Although this covariation implies that causal and responsibility attributions may be comparable in their relations to behavior, the inherently interpersonal nature of responsibility attributions suggests that they will be more consistently related to behavior than will causal attributions. This expectation is consistent with studies reviewed earlier, which showed that judgments of accountability and blame were predictive of marital behavior (Fincham et al., 1987; Sillars, 1985).

## Study 1

### Method

#### Subjects

Subjects were recruited through advertisements in local media inviting "couples from all walks of life" to participate in a research project on marriage. Interested couples were mailed a description of the study, a demographics questionnaire, and a 6-item measure of marital satisfaction (Norton, 1983). Of the approximately 225 respondents (about 85% of whom reported relatively high levels of marital quality), couples were considered for participation if they were married, living together, had completed at least the 10th grade of high school, and were not receiving marital counseling. Use of these criteria ensured that all couples defined their relationship in similar (i.e., legally sanctioned) terms, that spouses within a couple had frequent contact with each other, that subjects could read and understand the questionnaires, and that couples were not seeking therapy to make major changes in their relationship. The full range of marital satisfaction scores was sampled when selecting couples for participation to represent all levels of satisfaction about equally.

The 47 couples who participated in the study had been married an average of 8.5 years ( $SD = 6.8$ ), had 1.8 children ( $SD = 1.4$ ; mode = 2), and had a median income between \$25,000 and \$30,000. Husbands averaged 32.6 years of age ( $SD = 7.4$ ) and 14.0 years of formal education ( $SD = 2.3$ ), and obtained a mean score of 101.3 ( $SD = 28.7$ ) on the Marital Adjustment Test (MAT; Locke & Wallace, 1959). Wives averaged 30.7 years of age ( $SD = 6.8$ ) and 13.7 years of education ( $SD = 2.2$ ), and obtained a mean score of 101.5 ( $SD = 30.1$ ) on the MAT. On the basis of the normative data presented by Crane, Allgood, Larson, and

Griffin (1990), it was determined that 57% of the subjects scored within one standard deviation of the standardization mean; this suggests that most spouses in the sample scored in the mildly dissatisfied to mildly satisfied range of marital functioning.

#### Procedure

Couples meeting the screening criteria were contacted by telephone and all agreed to participate in a laboratory session. During this session spouses independently completed a consent form, a demographics questionnaire, a measure of marital satisfaction (the MAT), and an instrument to assess the degree to which they experienced a number of common marital problems (the Inventory of Marital Problems). The experimenter examined the responses of both spouses on the latter form and summed, for each topic, the husband's and wife's independent ratings of the degree to which each topic was experienced as a difficulty in the marriage. Spouses were then instructed individually to make causal and responsibility attribution ratings for the topic yielding the highest summed value. The experimenter also identified for each spouse a second topic that the spouse rated as being a difficulty in the marriage and instructed him or her to make attribution ratings for this problem. Unlike the first topic, the second topic was not necessarily the same for both spouses because spouses sometimes disagreed on what topics were problems in the marriage. Subjects were then reunited, seated facing each other, and instructed to "try to work toward a mutually agreeable solution" to the one problem they both viewed as presenting difficulties for them. The experimenter left the room, prepared the cameras and videocassette recorder for taping, and signaled the couple to begin their discussion. The couples were signaled to end their discussion after 15 min had elapsed. Couples were then debriefed and paid \$30 for their participation. Videotapes of the interactions were later coded for the problem-solving behaviors that spouses exhibited.

#### Questionnaires

*MAT.* Marital satisfaction was assessed with the 15-item MAT, an internally consistent (split half reliability = .90) and widely used index of marital satisfaction that discriminates between nondistressed spouses and spouses with documented marital problems (Locke & Wallace, 1959). Scores on the MAT can range from 2 to 158.

*Inventory of Marital Problems.* The topic for the 15-min discussion was derived from spouses' ratings of 19 issues (e.g., in-laws, sex, trust, and finances) that are common problems in marriage (Geiss & O'Leary, 1981). Spouses rated on 11-point scales the extent to which each item was a source of difficulty or disagreement in their marriage (1 = *not a problem*, 11 = *major problem*).

*Attributions for marital problems.* Spouses made causal and responsibility attributions for each of two issues that they had identified on the Inventory of Marital Problems as presenting major difficulties for them. To assess causal attributions, which pertain to the factors that produce an event (in this case a marital problem), spouses were asked to write what they considered to be the major cause of each problem. They then rated on 7-point scales the extent to which this cause (a) rests in the partner (locus: "To what extent does the cause of the difficulty rest in your spouse?" 1 = *not at all*, 7 = *totally*); (b) affects only the specific problem versus other areas of the marriage (globality: "Is this cause something that just affects this difficulty or does it affect other areas of your marriage?" 1 = *affects only this area*, 7 = *affects all areas*); and (c) is likely to be absent versus present when the problem occurs in the future (stability: "In the future when this difficulty arises, will the cause again be present?" 1 = *will never again be present*, 7 = *will always be present*). As in prior studies, a composite measure of causal attribution was formed to reduce the ratio of variables to subjects and to

provide a more stable attribution index. This strategy was also indicated because the hypotheses under consideration did not relate to specific attribution dimensions. To form the composite measure, the six causal judgments (2 problems  $\times$  3 dimensions) were summed. Higher scores on the index represent the extent to which the respondent locates the cause of the problem in the partner and perceives the cause to be stable and global. (Coefficient alpha: for wives = .77; for husbands = .45.)

Spouses also made three responsibility attribution judgments, which pertain to the partner's accountability or answerability for producing some event, by indicating on 7-point scales the extent to which (a) the partner deserves to be blamed for the problem (blame: "To what extent do you blame your spouse for this difficulty?" 1 = *not at all*, 7 = *totally*); (b) the partner's contribution to the problem is intentional (intent: "When your spouse does things that contribute to this difficulty, are they planned—done 'on purpose'—or are they unplanned—NOT done 'on purpose'?" 1 = *planned*, 7 = *unplanned*); and (c) the problem reflects the partner's selfish concerns (motivation: "To what extent does this difficulty reflect your spouse's selfish concerns?" 1 = *not at all*, 7 = *totally*). A composite measure of responsibility attributions was formed by summing the six responsibility judgments; higher scores on this index represent the extent to which the partner's contribution to the problem is motivated by selfish concerns, intentional, and worthy of blame. (Coefficient alpha: for wives = .84; for husbands = .82.)

### Behavioral Coding

On the basis of discussions by behavioral marital therapists concerning the skills that couples need to solve their problems (Jacobson & Margolin, 1979; Stuart, 1980), a coding system was devised to assess the quality of each spouse's approach to solving the problem under discussion. Two trained research assistants independently coded all videotapes by making 5-point ratings on nine dimensions; the behaviors of husbands and wives were coded in separate viewings of the videotapes. There was little variance on one dimension ("extent to which the problem is denied versus accepted"), and coders could not agree reliably on a second dimension ("degree to which the spouse is disengaged versus engaged"), and hence both were dropped from further analysis.

Pearson product-moment correlations between observer ratings on the remaining seven dimensions were significant (all  $ps < .001$ ) and ranged from .70 to .93 for husbands, median  $r(45) = .81$ , and from .66 to .93 for wives, median  $r(45) = .75$ . A final set of codes was derived from resolving disagreements between the two coders, and the internal consistency among the ratings made across the seven dimensions was examined. Examination of coefficient alpha indicated that two additional codes should be dropped ("degree to which the spouse is concerned with existing problems or with solutions to those problems" and "number of solutions proposed"), which resulted in a final composite for problem resolution behavior that was reliable for husbands (coefficient alpha = .74) and for wives (coefficient alpha = .82). Higher scores on this variable reflect problem-solving behavior of greater quality or skill. The five dimensions included in this final composite were the degree to which the spouse denies versus acknowledges his or her own contribution to the problem; the spouse focuses unconstructively on the history of the problem versus constructively on the present and future; solutions are abandoned versus pursued and explored; the spouse adopts a nonnegotiative versus negotiative approach to solving the problem; and the spouse fails to consider, versus considers, the partner's views and opinions. The median correlation among these dimensions was  $r(45) = .38$  for husbands and  $r(45) = .52$  for wives.

## Results and Discussion

### Preliminary Analyses

Preliminary analyses indicated that poorer problem-solving skills were more likely to be demonstrated by maritally distressed husbands,  $r(45) = .26$ ,  $p < .05$ , and wives,  $r(45) = .49$ ,  $p < .001$ . Replicating prior studies, higher levels of marital distress were also related to maladaptive causal attributions—that is, to greater tendencies toward attributing marital problems to the partner and to global and stable causes; for husbands,  $r(45) = -.50$ ,  $p < .001$ ; for wives,  $r(45) = -.61$ ,  $p < .001$ —and to maladaptive responsibility attributions—that is, to greater tendencies toward seeing the partner as worthy of blame for the problem and behaving intentionally and with selfish motivation when contributing to the problem; for husbands,  $r(45) = -.45$ ,  $p < .001$ ; for wives,  $r(45) = -.62$ ,  $p < .001$ . Although causal and responsibility attributions were correlated; for husbands,  $r(45) = .52$ ,  $p < .001$ ; for wives,  $r(45) = .73$ ,  $p < .001$ , factor analyses have shown that these two classes of attributions load on separate factors (Fincham & Bradbury, 1992); accordingly, the two indices were retained to examine their separate associations with marital behavior.

### Attributions and Behavior

Correlations between attributions and the composite variable representing problem-solving behavior were significant for wives' causal attributions and for husbands' and wives' responsibility attributions. These results are shown in the last rows of Table 1. Because these associations might be inflated because of variance that attributions and behavior share with marital satisfaction, they were recomputed with marital satisfaction statistically controlled. Resulting partial correlations revealed that the relation between poor problem-solving skills and maladaptive attributions remained significant for wives' responsibility attributions. These results are shown also in the bottom rows of Table 1.

Analyses were undertaken next to determine whether the association between wives' responsibility attributions and their problem-solving behavior was specific to one behavioral category or whether it generalized across behavioral categories. Correlations computed between wives' responsibility attributions and the five behavioral categories, before and after partialing marital satisfaction from the associations, are shown in Table 1. The partial correlations indicate that the association does not appear to be restricted to one behavioral category, as benign responsibility attributions were related to wives' tendencies to acknowledge their own contribution to the problem, to focus constructively on the problem, to adopt a negotiative stance in the discussion, and to consider the husband's point of view. Husbands' benign responsibility attributions were related to a tendency to focus constructively on the problem. In contrast, all partial correlations involving husbands' and wives' causal attributions were nonsignificant.

### Moderating Effects of Marital Satisfaction

A final set of analyses was conducted, separately for husbands and wives, to determine whether the association between

Table 1  
*Correlations and Partial Correlations (Controlling for Marital Satisfaction)  
 Between Attributions and Behavioral Coding: Study 1*

Behavior	Causal attribution composite		Responsibility attribution composite	
	<i>r</i>	Partial <i>r</i>	<i>r</i>	Partial <i>r</i>
Husband				
Acknowledges own contribution to problem	-.12	-.09	-.19	-.16
Focuses constructively on problem	-.11	.00	-.36**	-.30*
Pursues and explores solutions	-.22	-.11	-.20	-.10
Adopts a negotiative approach	-.26*	-.20	-.19	-.12
Considers partner's point of view	-.13	-.07	.01	.08
Composite behavioral index	-.24	-.13	-.26*	-.17
Wife				
Acknowledges own contribution to problem	-.25*	-.05	-.40**	-.25*
Focuses constructively on problem	-.39**	-.18	-.49***	-.32*
Pursues and explores solutions	-.07	.02	-.08	.01
Adopts a negotiative approach	-.37**	-.13	-.51***	-.32*
Considers partner's point of view	-.32*	.05	-.58***	-.35**
Composite behavioral index	-.34**	-.08	-.51***	-.30*

Note.  $N = 47$  couples. Higher attribution scores reflect attributions that are relatively maladaptive. Higher behavior scores reflect problem-solving behaviors of greater quality or skill.  
 \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

attributions and problem-solving behavior would differ across levels of marital satisfaction. Groups of distressed and nondistressed subjects were first formed, using the standard cutoff score of 100 on the MAT to determine group assignment. This resulted in distressed groups of 21 subjects (MAT scores for husbands:  $M = 74.2$ ,  $SD = 17.8$ ; for wives:  $M = 72.1$ ,  $SD = 16.3$ ) and nondistressed groups of 26 subjects (for husbands:  $M = 123.3$ ,  $SD = 11.9$ ; for wives:  $M = 125.2$ ,  $SD = 11.9$ ). These groups differed significantly on MAT scores; for husbands,  $t(45) = -11.28$ ,  $p < .001$ ; for wives,  $t(45) = -12.95$ ,  $p < .001$ . Following recommendations by Baron and Kenny (1986) for investigating the moderating effects of one variable on the relation between two others, we computed regression equations in which problem-solving behavior was predicted from marital satisfaction group (1 = *distressed*, 2 = *nondistressed*), one of the attribution composites, and the Group  $\times$  Attribution interaction term. A significant contribution to the equation by the interaction term (after marital satisfaction group and the attribution composite have been entered) can be interpreted to indicate that the association between attributions and behavior is moderated by marital satisfaction group.

Results supported the hypothesis that the association between attributions and behavior would be strongest among distressed wives, and, consistent with expectations, this finding emerged for responsibility attributions, for the interaction term,  $t(45) = 1.95$ ,  $p < .01$ . Specifically, the relation between maladaptive responsibility attributions and poorer problem solving was stronger among distressed wives,  $r(19) = -.47$ ,  $p < .05$ , than nondistressed wives,  $r(24) = -.07$ , *ns*. Follow-up analy-

ses, using as dependent measures the separate behavioral categories rather than the composite problem-solving index, yielded an association between responsibility attributions and the extent to which wives acknowledged their own contribution to the problem; for the interaction term,  $t(45) = 2.50$ ,  $p < .05$ . The association between responsibility attributions and this behavior was stronger among distressed wives,  $r(19) = -.47$ ,  $p < .05$ , than nondistressed wives,  $r(24) = .15$ , *ns*. There were no significant Group  $\times$  Attribution interactions for causal attributions, and the interaction terms in parallel analyses comparing distressed and nondistressed husbands were not significant.

### Conclusion

In addition to replicating the relation between marital satisfaction and behavior, and between marital satisfaction and attributions, Study 1 provides support for the hypothesis that maladaptive attributions are related to less effective or skillful problem-solving behavior in marital interaction. This association was confined largely to wives' responsibility attributions. Examination of the moderating effects of marital satisfaction revealed further that maladaptive responsibility attributions were related more strongly to behavior among distressed than nondistressed wives. This finding indicates that knowledge of distressed wives' responsibility attributions permits greater prediction of problem-solving behavior than does knowledge of nondistressed wives' responsibility attributions.

Although these results are in accordance with hypotheses and with prior findings, the observational coding may have

been cast at too gross a level to detect behaviors that would relate to husbands' causal and responsibility attributions and to wives' causal attributions. That is, coders were required to make global or molar ratings that captured the interaction as a whole, rather than specific or molecular judgments about discrete behavioral acts (for a discussion of this distinction see Cairns & Green, 1979). The contextual model assumes, in contrast, that attributions will influence spouses' specific responses to discrete partner behaviors; it is therefore necessary to measure behavior at a finer level of analysis before concluding that attributions and behavior are unrelated for husbands or that casual attributions and behavior are unrelated for husbands and wives.

An additional shortcoming of Study 1 is that it focuses solely on the intrapersonal association between attributions and behavior. This also contrasts with the contextual model, which emphasizes attributions in relation to interpersonal exchanges of behavior. More important, as a result of its intrapersonal focus, an assumption of Study 1 is that the association between a spouses' attributions and behavior does not vary as a function of the partner behavior to which he or she was responding. This may be an untenable assumption because, for example, a spouse's maladaptive attribution might be more likely to guide his or her behavior after a negative partner behavior than after a positive partner behavior. Such an expectation is based on the notion, outlined in the introduction, that negative or threatening events are especially likely to prompt attributional activity and to require a behavioral response that permits the attributor to exercise some degree of control over the interaction.

To examine attributions in relation to interpersonal behavior, and to address the possibility that the association between attributions and behavior might vary as a function of antecedent partner behavior, a second study was conducted in which each individual speaking turn in the interaction was coded for the problem-solving behavior that spouses exhibited. The sequential patterns or dependencies among these behaviors were derived and analyzed in relation to husbands' and wives' attributions.

## Study 2

Study 2 was conducted to investigate the degree to which spouses' causal and responsibility attributions for marital problems were related to the avoidant, positive, and negative behaviors they exhibited in a problem-solving discussion. For behavioral rates, we hypothesized that spouses making maladaptive attributions would be less likely to avoid explicit discussion of the conflict (i.e., they would be more likely to engage the problem at hand) and would exhibit relatively high rates of negative behavior and relatively low rates of positive behavior. For behavioral sequences, we hypothesized that spouses making maladaptive attributions would be more inclined to respond to the partner's behavior with negative behavior and less inclined to respond to the partner's behavior with avoidant and positive behavior. Our hypothesis for behavioral sequences was cast at this relatively general level because there is little relevant research to guide hypotheses about the relative strength of associations between attributions and specific sequences of behavior. Nevertheless, because of the prominence accorded to negative

reciprocity sequences in marital interaction (see Gottman, 1979; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; Weiss & Heyman, 1990), we were particularly interested in examining whether the reciprocating spouse's maladaptive attributions would predict the likelihood of him or her responding to a negative partner behavior with a negative behavior of his or her own. Finally, marital satisfaction was expected to moderate these associations, such that attributions and behavior would be related more strongly among distressed than nondistressed spouses, especially among wives.

## Method

### Subjects

Subjects were recruited through advertisements in local newspapers and, to sample the full range of marital quality in a more efficient manner than in Study 1, we also recruited subjects seeking marital therapy from a local clinic. The 40 couples (29 from the community and 11 seeking therapy) selected to participate had been married an average of 6.5 years ( $SD = 6.7$ ), had 1.5 children ( $SD = 1.4$ ; mode = 1), and had a median family income of approximately \$22,500. Husbands averaged 31.5 years of age ( $SD = 7.3$ ) and 14.4 years of formal education ( $SD = 3.4$ ) and obtained a mean score of 99.4 ( $SD = 22.7$ ) on the MAT. Wives averaged 30.3 years of age ( $SD = 6.8$ ) and 14.0 years of formal education ( $SD = 3.1$ ) and obtained a mean score of 92.1 ( $SD = 29.0$ ) on the MAT. On the basis of the normative data presented by Crane et al. (1990), 68% of the subjects scored within one standard deviation of the standardization mean; as in Study 1 this indicates that most spouses in the sample were mildly dissatisfied to mildly satisfied with their marriage.

### Procedure and Questionnaires

On arrival at the laboratory, spouses were separated and asked to complete a consent form, a demographics questionnaire, the MAT, the Inventory of Marital Problems, and, for two marital difficulties identified from responses on the Inventory, the measure of Attributions for Marital Problems (see Study 1 for a description of these instruments). The procedures used to identify two difficulties as stimuli for the attribution ratings and one difficulty as the topic for the conversation were identical to those used in Study 1. After completing these measures spouses were reunited and instructed to work toward a mutually agreeable solution to the primary marital problem identified by the experimenter. Couples were signaled to end their discussion after 15 min had elapsed, at which point they were debriefed and paid \$30. Videotapes of the interactions were later coded for the problem-solving behaviors that spouses exhibited. Internal consistency analyses indicated that, for the causal attribution index, coefficient alpha was .65 for wives and .61 for husbands; for the responsibility attribution index, coefficient alpha was .68 for wives and .76 for husbands.

### Behavioral Coding

Verbatim transcripts of the interactions were prepared and divided into individual speaking turns ( $M = 187.8$  speaking turns per couple,  $SD = 64.8$ ), and trained coders used the transcripts and videotapes to assign one of seven codes to each turn. These codes, which comprised the Verbal Tactics Coding Scheme (see Sillars, 1981), were reduced as recommended by Sillars to three summary codes in the following manner: Behaviors reflecting denial of the problem or shifting of the discussion away from the problem were coded as *avoidant*, behaviors reflecting hostility or rejection of the partner's views were coded as

negative, and behaviors reflecting empathy for the partner and neutral or positive information about the problem were coded as positive. Coders were also allowed to assign an *other* code to behaviors, but to reduce the number of significance tests conducted and to circumvent the problem of ipsative data that results from the analysis of proportions, these codes were omitted from analysis. Coders were instructed to make a global evaluation of each speaking turn, attending to the verbal and nonverbal components of the behavior. Independent coding of 20% of the videotapes revealed that coders were reliable (coefficient kappa = .84).

To control for variation across spouses in their number of speaking turns, we divided the number of times each of the three codes was emitted by each spouse in the interaction by their number of speaking turns. To stabilize the variance of these proportions, they were then subjected to an arcsine transformation (see Kleinbaum & Kupper, 1978).

To examine the sequential patterning of the three classes of behavior between husbands and wives in the interaction, we performed lag sequential analysis on the behavioral data (see Sackett, 1979, for a discussion of lag sequential analysis and see Allison & Liker, 1982, for a description of the *z* score computation used here). This procedure yields *z* scores that represent the likelihood that a behavior by one spouse will be followed by a specified behavior by the partner, controlling for the base rate with which the partner exhibits that behavior. (See Bradbury & Fincham, 1991b, and Sackett, 1979, for details on why the resulting values are *z* scores.) Thus, for example, this procedure generates values reflecting the likelihood that the wife will respond to the husband's negative behavior with her own negative behavior, taking into account her general tendency to exhibit negative behavior in the interaction.

Although lag sequential analysis permits investigation of contingencies between behaviors that are separated by several speaking turns, only immediate (i.e., Lag 1) contingencies between behaviors were investigated in the present study. This focus was adopted because, in its present form, the contextual model makes no specific predictions about the association between a spouse's attributions and behavior beyond the immediately preceding partner behavior and because investigation of longer sequences of behavior (even with relatively few behavioral categories) generates a high number of nonindependent statistical tests. Application of lag sequential analysis produced nine *z* scores for husbands when they responded to their partner and nine *z* scores for wives when they responded to their partner, as each spouse could respond to each of three partner behaviors with any one of their own three behaviors.

## Results and Discussion

### Preliminary Analyses

With lower levels of marital satisfaction, husbands tended to exhibit more avoidant behaviors,  $r(38) = -.28, p < .05$ ; more negative behaviors,  $r(38) = -.37, p < .01$ ; and fewer positive behaviors,  $r(38) = .43, p < .005$ . Although corresponding correlations for wives were in the expected direction, their marital satisfaction was unrelated to their avoidant,  $r(38) = -.07, ns$ ; negative,  $r(38) = -.12, ns$ ; and positive,  $r(38) = .13, ns$ , behaviors. The latter finding is unexpected, particularly in view of the significant results for husbands with these behaviors and the significant results for husbands and wives in Study 1. Although a nonsignificant association between behavior and satisfaction has been obtained in previous studies (see Baucom & Adams, 1987), an explanation for this finding is not immediately apparent.

Higher levels of marital distress were related to maladaptive causal attributions—that is, to greater tendencies to attribute marital problems to the partner and to global and stable causes for wives,  $r(38) = -.39, p < .01$ , but not for husbands,  $r(38) = -.20, ns$ . Higher levels of distress were related to maladaptive responsibility attributions—specifically, to greater tendencies to see the partner as blameworthy for the problems and as behaving intentionally and with selfish motivation when contributing to the problems; for husbands,  $r(38) = -.45, p < .005$ ; for wives,  $r(38) = -.32, p < .05$ . These findings are consistent with existing research, as responsibility attributions tend to relate more reliably than causal attributions to marital satisfaction (see Bradbury & Fincham, 1990). Causal and responsibility attributions were related for husbands,  $r(38) = .61, p < .001$ , and for wives,  $r(38) = .78, p < .001$ , and as in Study 1, they were retained for examination of their separate associations with marital behavior.

### Attributions and Behavioral Rates

Partial correlations were computed between the attribution composites and the three behavior categories, with marital satisfaction statistically controlled. The results of these analyses, shown in Table 2, indicate first that husbands and wives were more likely to exhibit negative behavior to the extent that they attributed their marital problems to their partner and to global and stable causes. Husbands' and wives' rates of negative behavior were also greater to the extent that the partner was viewed as blameworthy, behaving intentionally, and selfishly motivated. Second, wives exhibited less positive behavior to the extent that they made unfavorable causal and responsibility attributions. Finally, all partial correlations between rates of avoidant behavior and attributions were nonsignificant.

The relation between husbands' and wives' maladaptive attributions and their higher rates of negative behavior is consistent with expectations and supports the contention made following

Table 2  
Correlations and Partial Correlations (Controlling for Marital Satisfaction) Between Attributions and Behavioral Rates: Study 2

Behavior	Causal attribution composite		Responsibility attribution composite	
	<i>r</i>	Partial <i>r</i>	<i>r</i>	Partial <i>r</i>
	Husband			
Avoidant	-.14	-.21	-.08	-.23
Negative	.32*	.27*	.54****	.45***
Positive	-.15	-.08	-.40**	-.25
	Wife			
Avoidant	.09	.07	-.10	-.13
Negative	.61****	.62****	.60****	.59****
Positive	-.55****	-.55****	-.46***	-.44***

Note. *N* = 40 couples. Higher attribution scores reflect attributions that are relatively maladaptive.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .005$ . \*\*\*\*  $p < .001$ .



Study 1, that a relatively molecular level of coding would afford a more powerful test of the association between attributions and behavior. These findings are also noteworthy because they were obtained despite nonsignificant associations between husbands' marital satisfaction and causal attributions and between wives' marital satisfaction and their rates of negative behavior. Indeed it is surprising that significant prediction of wives' negative behavior was possible from their causal and responsibility attributions, but not from their marital satisfaction.

*Attributions and Behavioral Sequences*

Correlations were computed next between the attribution composites and the z scores derived from lag sequential analysis, before and after statistically controlling for marital satisfaction. These analyses, presented in Table 3, reveal several significant associations between both classes of attributions and several sorts of behavioral responses to partner behavior for wives and few such associations for husbands. Perhaps the most notable of these results involves the wives' negative responses to the husbands' negative behavior (i.e., husband negative → wife negative in Table 3). The present findings indicate that this tendency toward negative reciprocity, viewed by many as the hall-

mark of marital discord, is greater to the extent that wives (a) view their marital problems as caused by the husband and by global and stable factors and (b) view their husband as blame-worthy and acting intentionally and with selfish motivation when contributing to marital problems. Most important, these associations remain after controlling for marital satisfaction.

In addition to showing that wives will reciprocate negative behavior to the extent that they make maladaptive attributions, the partial correlations in Table 3 reveal that wives' tendency to respond to a negative behavior with other than a negative behavior is also related to their attributions. Specifically, wives making relatively benign responsibility attributions tend to respond to a negative behavior with an avoidant behavior or with a positive behavior, relative to wives making maladaptive responsibility attributions.

Wives' responding to husbands' avoidant behavior with a positive behavior of their own was also related to their causal and responsibility attributions. Specifically, wives' tendency to exhibit positive behavior following an avoidant partner behavior was greater to the extent that they make maladaptive causal and responsibility attributions. This may suggest a strategy on the part of those wives holding such attributions to use positive behavior to bring their retreating husbands back into the con-

Table 3  
*Correlations and Partial Correlations (Controlling for Marital Satisfaction) Between Attributions and z Scores Representing Lag 1 Sequential Dependencies Among Husband and Wife Behaviors: Study 2*

Behavior sequence	Causal attribution composite		Responsibility attribution composite	
	r	Partial r	r	Partial r
Wife				
H avoidant → W avoidant	.22	.30*	.05	.11
H avoidant → W negative	-.14	-.09	-.31*	-.27
H avoidant → W positive	.34*	.29*	.44***	.40**
H negative → W avoidant	-.19	-.16	-.41**	-.39*
H negative → W negative	.45***	.59****	.32*	.41*
H negative → W positive	-.16	-.21	-.40*	-.45***
H positive → W avoidant	-.05	-.11	.08	.05
H positive → W negative	-.10	-.07	-.29	-.28
H positive → W positive	-.31*	-.24	-.38**	-.33*
Husband				
W avoidant → H avoidant	-.25	-.23	-.16	-.12
W avoidant → H negative	-.03	.00	-.18	-.12
W avoidant → H positive	.06	.04	.28*	.27*
W negative → H avoidant	-.00	.06	-.17	-.05
W negative → H negative	-.05	-.09	.17	.10
W negative → H positive	-.01	.00	-.11	-.08
W positive → H avoidant	.26	.23	.14	.08
W positive → H negative	-.04	-.04	-.11	-.13
W positive → H positive	-.29*	-.24	-.34*	-.22

Note. N = 40 couples. Higher attribution scores reflect attributions that are relatively maladaptive. Degrees of freedom vary slightly across values because not all spouses exhibited all classes of behavior in sufficient numbers for lag sequential analysis. H = husband; W = wife.  
\* p < .05. \*\* p < .01. \*\*\* p < .005. \*\*\*\* p < .001.

flict, perhaps only to express at a later point their negative impressions of his role in the problem. Wives also tended to respond to an avoidant behavior with an avoidant behavior of their own to the extent that they make relatively maladaptive causal attributions. We can speculate that this reflects a tendency to "let the husband off the hook" and to follow him as he takes the discussion away from the problem under discussion, perhaps in response to recognizing that the husband's desire to withdraw results from her critical view of his contribution to the conflict.

In addition, wives appear to reciprocate positive behavior to the extent that they make benign or adaptive responsibility attributions. Together with the significant results obtained for wives' rates of positive behavior (see previous section) and for their positive responses to husbands' avoidant and negative behaviors, this association is noteworthy because it indicates that attributions are related not only to the negative behaviors that are often highlighted in analyses of marital interaction, but also to behaviors reflecting empathy and consideration of the partner's views.<sup>2</sup>

### *Moderating Effects of Marital Satisfaction*

As in Study 1, we sought to determine whether the relation between attributions and behaviors differed across levels of marital satisfaction. A cutoff score of 100 on the MAT was used again to determine group assignment, resulting in distressed groups of 19 subjects (MAT scores for husbands:  $M = 79.6$ ,  $SD = 14.1$ ; for wives:  $M = 66.0$ ,  $SD = 17.4$ ) and nondistressed groups of 21 subjects (husbands:  $M = 117.2$ ,  $SD = 11.0$ ; wives:  $M = 116.6$ ,  $SD = 11.0$ ). These groups differed significantly on MAT scores; for husbands,  $t(38) = -9.47$ ,  $p < .001$ ; for wives,  $t(38) = -10.88$ ,  $p < .001$ . The possible moderating effects of marital satisfaction were again examined by determining, with regression equations, whether the Marital Satisfaction Group  $\times$  Attribution Composite term was a significant predictor of the behavioral variable in question, beyond the effects of marital satisfaction group and the attribution composite.

**Behavioral rates.** The Marital Satisfaction Group  $\times$  Causal Attribution interaction term was a significant predictor of avoidant behavior among husbands,  $t(38) = 1.71$ ,  $p < .05$ . Examination of corresponding within-group correlations indicated that distressed husbands were less likely to avoid discussion of the problem to the extent that they made maladaptive causal attributions,  $r(17) = -.44$ ,  $p < .05$ , whereas this relation was nonsignificant for nondistressed husbands,  $r(19) = .06$ , *ns*. This indicates that distressed husbands, but not nondistressed husbands, pursued discussion of the problem rather than avoided it to the degree that they located the cause of the problem in their spouse and saw it as temporally stable and globally influential in the marriage. Remaining interaction effects for husbands were not significant.

For wives, a significant interaction between marital satisfaction group and responsibility attributions was obtained in the prediction of positive behaviors,  $t(38) = -1.69$ ,  $p < .05$ . The corresponding correlations indicated that nondistressed wives were more likely to exhibit positive behaviors to the extent that they made less maladaptive responsibility attributions,  $r(17) =$

$-.59$ ,  $p < .005$ , whereas this association was nonsignificant for distressed wives,  $r(19) = -.18$ , *ns*. Thus, relatively benign responsibility attributions covaried with higher rates of positive behavior for nondistressed wives, but no such covariation was found among distressed wives. Remaining interaction effects for wives were not significant.

**Behavioral sequences.** Marital satisfaction moderated the association between husbands' attributions and their responses to avoidant partner behavior and between wives' attributions and their responses to negative partner behavior (see Table 4). Specifically, to the extent that they make relatively maladaptive causal attributions, distressed husbands are *more* likely to respond to their partner's avoidant behavior with a positive behavior of their own. This distinguishes them from nondistressed husbands, whose causal attributions are unrelated to their positive responses to avoidant behavior.<sup>3</sup> In addition, to the extent that they make maladaptive causal attributions, distressed husbands are *less* likely to respond to their wife's avoidant behavior with an avoidant behavior of their own. This also distinguishes them from nondistressed husbands, whose causal attributions are unrelated to their tendency to reciprocate avoidant behavior. The remaining moderating analyses for husbands were not significant.

The reason for this pattern of results is not clear, but one possibility is that the behavioral sequence involving husbands' positive behavior is a cause of maladaptive attributions, whereas the sequence involving husbands' failure to reciprocate avoidant behavior is a consequence of maladaptive attributions. Specifically, if we assume that husbands are especially motivated to keep their level of emotional arousal at a manageable level because it is "harmful, unpleasant, and undesirable" for them (Gottman & Levenson, 1986, p. 44), then they may behave in ways that allow them to minimize their involvement in conflict. One behavioral strategy that may reflect this need and accomplish this goal would involve responding to their wife's avoidant behavior with a positive behavior. Over time, however, the tendency for the wife to avoid conflict and for the husband to reward inadvertently this avoidance may result in their failure to resolve that conflict. When asked to provide an attribution for why this problem exists in the marriage, the husband may reflect on the events in their interactions and assert that

<sup>2</sup> We examined the relations between individual attribution dimensions and the likelihood of various behavioral sequences, with marital satisfaction controlled. For wives, significant associations were obtained across all dimensions. For husbands, significant findings emerged only on the dimension of intent; for example, to the extent they believed that their partner was contributing intentionally to the marital difficulty, they were less likely to reciprocate positive behavior, partial  $r(37) = -.27$ ,  $p < .05$ , and more likely to reciprocate negative behavior, partial  $r(37) = .35$ ,  $p < .05$ .

<sup>3</sup> Similar but nonsignificant results were found for this behavior sequence and responsibility attributions,  $t(38) = 1.42$ , *ns*. For distressed husbands, relatively maladaptive responsibility attributions correlated with an increased tendency to respond to avoidant behaviors with positive behaviors,  $r(17) = .53$ ,  $p < .05$ ; nondistressed husbands showed no such tendency,  $r(19) = .07$ , *ns*.

Table 4  
*Significant Moderating Effects of Marital Satisfaction on Associations  
 Between Attributions and Behavior Sequences: Study 2*

Attribution and behavior sequence	Marital Satisfaction Group × Attribution interaction		Marital satisfaction group	
	B	<i>t</i>	Distressed <i>r</i>	Nondistressed <i>r</i>
Husbands				
Causal attributions with				
W avoidant → H positive	-.17	-2.37*	.46†	-.29
W avoidant → H avoidant	.44	3.03**	-.55††	.28
Wives				
Causal attributions with				
H negative → W negative	-.55	-4.23***	.63†††	.37
Responsibility attributions with				
H negative → W negative	-.44	-2.19*	.54†	.21

*Note.* *N* = 19 distressed couples and 21 nondistressed couples. Higher attribution scores reflect attributions that are relatively maladaptive. Degrees of freedom vary slightly across values because not all spouses exhibited all classes of behavior in sufficient numbers for lag sequential analysis. H = husband; W = wife.

For B: \* *p* < .05. \*\* *p* < .005. \*\*\* *p* < .001. For *r*: † *p* < .05. †† *p* < .01. ††† *p* < .005.

“it’s all because of my wife—she doesn’t seem to want to do anything to change it.” This attribution, which is maladaptive in part because it does not acknowledge the husband’s own role in the failure to resolve the problem, may contribute in turn to the husband’s subsequent tendency to not allow his wife to avoid the problem (“this problem is her fault and it really bothers me that we haven’t solved it. . . . I’m not going to let her get off the hook this time”).

Although this explanation goes far beyond the data we have presented here, it does mesh well with recent speculation that distressed husbands seek to escape high levels of affective arousal and that couples are conditioned to repeat those sequences of behavior that restore calm in interaction (Gottman & Levenson, 1986). It also provides a starting point for understanding the interactional precursors to spouse’s attributions, an issue that has remained largely unaddressed in the marital attribution literature.

Turning to the results for wives, Table 4 shows that their attributions appeared to be especially important when responding to the negative behavior of their husbands. To the extent that they made relatively maladaptive attributions of either type, distressed wives were more likely to reciprocate their husbands’ negative behavior. Distressed and nondistressed wives differ in this regard, as nondistressed wives’ responsibility attributions were unrelated to their tendency to reciprocate negative behavior. This suggests that the association between wives’ maladaptive responsibility attributions and their reciprocation of negative behavior (see Table 3) is limited to maritally distressed wives. This finding is noteworthy because it shows that the general deficit in problem solving that covaries with maladaptive attributions (in Study 1) can be specified as a predisposition toward negative reciprocity (in Study 2). The remaining moderating analyses for wives were not significant.

### Conclusion

In this study, husbands’ and wives’ causal and responsibility attributions were related to the rates at which they exhibited negative behavior, and wives’ causal and responsibility attributions were related to the rates at which they exhibited positive behavior. With the data from Study 1, these results lend greater support to the hypothesis that attributions for marital problems are related to the behaviors that spouses exhibit in problem-solving discussions. More important, Study 2 demonstrates that spouses’ attributions are related to the behavioral responses they make to specific partner behaviors. These data are among the first to address the role of spouses’ attributions at an interpersonal level of analysis, and they are consistent with the possibility that attributions contribute to behavioral responding in marital interaction.

The associations between attributions and behavior were qualified in important ways when examined within distressed and nondistressed groups. For example, among distressed husbands (but not among nondistressed husbands), maladaptive attributions were related to a decreased tendency to reciprocate wives’ avoidant behavior and to an increased tendency to respond to wives’ avoidant behavior with a positive behavior. Among wives, the tendency to reciprocate negative behavior was related significantly to maladaptive attributions in the distressed group but not in the nondistressed group. This latter finding is consistent with predictions and adds to a growing literature that indicates that distressed wives, possibly in response to their disengaged and withdrawn husbands, are particularly likely to exhibit and reciprocate negative behavior (e.g., Floyd & Markman, 1983). The present findings extend this literature by suggesting that this pattern of behavior is especially characteristic of those distressed wives who view the

causes of marital problems as stable, global, and located within the partner and who believe that the partner is acting intentionally, with selfish motivation, and in a blameworthy manner when contributing to those problems.

## General Discussion

### *Rationale and Results of the Studies*

Research on marital interaction has yielded considerable insight into behavioral differences between distressed and nondistressed couples, and in recent years, investigation of intrapersonal factors in marriage has shown that distressed and nondistressed couples display differences also in the attributions they make for events in their relationship. Examination of the interplay between behavior and attributions in this domain is important because, on one hand, the determinants of marital interaction patterns are largely unspecified and, on the other hand, the impact of attributions on interpersonal processes in marriage is not well understood. The present studies were designed to combine these two lines of research by determining whether spouses' attributions were related to their behavior in interaction and whether the association between attributions and behavior was different in distressed and nondistressed marriages.

The first hypothesis, that maladaptive attributions for marital problems would covary with behaviors that interfered with the resolution of such problems, received partial support in both studies. In Study 1, wives making relatively maladaptive responsibility attributions tended to exhibit a variety of behaviors likely to hinder effective problem solving, and in Study 2, husbands and wives making relatively maladaptive causal and responsibility attributions tended to exhibit higher rates of interpersonally hostile and rejecting behaviors. Sequences of behavior were also examined in Study 2, which showed that wives making relatively maladaptive causal and responsibility attributions were more likely to reciprocate their husband's negative behavior. Wives making relatively maladaptive responsibility attributions were also less likely to reciprocate the husband's empathic and supportive behaviors. In each case these results were significant after controlling for marital satisfaction.

The second hypothesis, that the association between attributions and behavior would be greater among distressed spouses and particularly among distressed wives, also received some support. In Study 1 the association between relatively maladaptive responsibility attributions and poorer problem-solving behaviors was significant for distressed wives but not for nondistressed wives. This finding was extended to behavioral sequences in Study 2, where it was found that the maladaptive causal and responsibility attributions of distressed wives covaried significantly with their tendency to reciprocate negative partner behaviors; these associations were not significant for nondistressed wives. The significant associations in Study 2 between attributions and behavior were not limited entirely, however, to distressed wives. For example, distressed husbands, but not nondistressed husbands, were less likely to avoid discussion of the problem to the extent they made relatively maladaptive causal attributions, and nondistressed wives, but not distressed wives, were found to exhibit more positive behaviors

to the extent that they made relatively benign responsibility attributions.

These findings extend the largely independent literatures on interaction and attributions in marriage by suggesting that the behaviors that spouses exhibit in conversations with their partner may be due, in part, to the attributions they have formed for their marital difficulties. With marital satisfaction statistically controlled, it appears that the degree to which a spouse is generally constructive or counterproductive in resolving a conflict may depend on the extent to which he or she tends to hold benevolent or malevolent explanations for marital conflicts. Moreover, the degree of covariation between attributions and behavior appears to differ in happy and unhappy marriages so that, for example, critical or hostile behavior is more predictable from attributions in the case of distressed wives compared with nondistressed wives. We might expect that a spouse's consistent tendency to attribute marital problems to the partner and, accordingly, to exhibit more negative behavior, would contribute to the perpetuation of those problems and, over time, to declines in marital satisfaction.

To our knowledge these data are the first to relate spouses' causal and responsibility attributions to rates and sequences of behavior in interaction. These findings build on prior research on attributions and behavior in marriage and lend support to formulations of marriage that emphasize the role of intrapersonal variables in interpersonal behavior and marital dysfunction. We now turn to a discussion of the limitations of the present studies before considering their implications for theory and research.

### *Limitations and Qualifications*

Although promising, interpretation of these studies is qualified by a number of factors. First, the results might be influenced by important unmeasured variables. Most prominent in this regard are depression, which is known to be more prevalent among maritally distressed than nondistressed spouses (Beach, Sandeen, & O'Leary, 1990), and a number of cognitive variables that are likely to correlate with attributions (e.g., maladaptive beliefs and assumptions about marriage); factors such as these should be examined directly in future studies. Second, a number of points can be raised about the assessment of attributions: (a) spouses were asked to make attributions for two problems and then to discuss only one of them, which may underestimate the relation between attributions and behavior but may also assume greater cross-situational consistency among spouses' attributions than actually exists (cf. Baucom, Sayers, & Duhe, 1989); (b) the attribution ratings that were solicited in response to specific questions may differ from those that would be obtained from unstructured, open-ended responses; (c) coefficient alpha obtained for some of the attribution composites, especially husbands' causal attributions, attenuates correlations with other variables, thus emphasizing the need for more reliable assessment of attributions for marital difficulties; and (d) administration of the attribution questionnaire before the interaction may have influenced the interaction and altered the association between attributions and behavior, suggesting that future studies should consider manipulating the order of the attribution and behavior assessments.

Third, although the topics identified for discussion were major marital problems for all couples, distressed couples may have discussed issues that were more serious or difficult than those discussed by nondistressed couples. This factor, which is a greater threat to the validity of the second purpose of the studies than the first (in which the effects of satisfaction were partialled from associations between attributions and behavior), should be controlled in future studies. Fourth, the present findings are based on couples who had been married for about 7 years and may not generalize to couples at different stages in their marriage (e.g., newlyweds, long-term marriages). Finally, the cross-sectional design used here does not permit statements to be made about the causal relations between attributions and behavior.<sup>4</sup>

### *Implications for Theory*

Although the present studies address a fundamental assumption of attribution models (i.e., that an individual's attributions affect his or her social behavior), they were designed for the more specific purpose of examining the widely held view that attributions influence behavior in functional and dysfunctional relationships. According to the contextual model of marriage that guided these studies (Bradbury & Fincham, 1987, 1988, 1991a), spouses attend to, perceive, and assign meaning to behavior exhibited by the partner and, as a function of this processing and the factors that influence it, they then exhibit a behavioral response of their own. Taken together, Studies 1 and 2 indicate that one likely component of the processing stage, spouses' attributions for marital problems and the partner's role in them, does account for variation in behavioral responding. The studies indicate further that (a) this link remains intact after controlling for marital satisfaction, which can be understood in terms of the contextual model as a stable intraindividual factor that influences the processing stage and that (b) the strength of the link between a spouse's attribution and his or her behavior appears to vary as a function of the partner behavior that he or she is processing.

In addition to lending support to basic assertions of the contextual model, the present data help to identify a number of issues in need of further study. First, important questions remain regarding the most appropriate conception of attributions in the model. Although it seems plausible to assume that spouses do not make attributions anew for each partner behavior in the rapidly unfolding course of interaction, the mechanism by which existing attributions are activated and acted on in interpersonal settings is unknown. One possibility is that the negative affect associated with marital distress renders maladaptive attributions chronically active and accessible, so that when negative events are encountered the distressed spouse interprets them automatically in terms of that explanation and behaves accordingly. This possibility is consistent with the significant moderating analyses reported here, and within the contextual model, this would be an example of the more general process whereby an enduring affective state (i.e., marital distress) influences how partner behavior is processed by the spouse to produce a behavioral response by the spouse. One means of exploring this hypothesis is to induce a positive emotional state in distressed and nondistressed spouses before a

problem-solving discussion and to examine the relative impact of the manipulation on attributions and behavioral exchanges.

A second issue raised by these studies concerns the contributions of causal and responsibility attributions to behavior in interaction. The contextual model, drawing on models of attribution that propose that responsibility attributions presuppose or follow from causal attributions (see Fincham & Jaspars, 1980), assumes that the relatively affectively laden responsibility attributions will bear a more consistent relation with marital behavior compared with causal attributions. Prior studies (Fincham, Beach, & Nelson, 1987; Sillars, 1985) and the results of Study 1 do lend support to this position, but the consistent associations between causal attributions and the behavioral rates and sequences examined in Study 2 indicate that it would be premature to assume that causal judgments are an unnecessary component of the processing stage in the contextual model and that they are less important than responsibility attributions for understanding marital interaction.<sup>5</sup>

If further studies corroborate the utility of retaining both causal and responsibility attributions in the contextual model and indicate that both make contributions to marital behavior, then the question of how these attributions operate in the processing stage will need to be addressed directly. One possibility is that certain partner behaviors differentially activate causal judgments (e.g., concerning the causal locus of the problem: "Things have gotten better between us since I changed jobs, don't you think?") or responsibility judgments (e.g., concerning the degree to which contributions to the problem are intentional: "Why do you insist on aggravating me when I am talking to my friends on the telephone?") which, depending on the relative distribution of such partner behaviors in an interaction, could lead to different associations between the two classes of attribution and behavior. Regardless of the accuracy of this proposition, the data presented here suggest that causal attributions may indeed play an important role in how spouses process and respond to partner behavior, but additional data are necessary to make more specific statements about the nature of the processing stage.

A third issue highlighted by these studies is that further re-

<sup>4</sup> It is possible that significant results were obtained in the comparisons of distressed and nondistressed subjects because these groups differed in the degree of variability in their satisfaction, attribution, or behavior scores. To test this possibility, a series of *F* tests for variance were computed for all variables analyzed in the two studies, for husbands and wives. (With these tests, *F* values were generated for a given variable by dividing the larger sample variance by the smaller sample variance with *df* = 1, 45 in Study 1 and *df* = 1, 38 in Study 2.) The majority (71%) of these tests were not significant (*p* > .05), and none of the tests were significant for marital satisfaction. The tests reaching statistical significance suggested that nondistressed couples were more variable than distressed couples; these differences were comparable for husbands and wives and did not bear any systematic relation to the significant moderating effects reported in the two studies.

<sup>5</sup> Fisher's *r*-to-*z* transformations showed that, in Study 1, partial correlations were stronger for responsibility attributions than causal attributions for focusing constructively on the problem (husbands: *z* = 2.07, *p* < .05) and for considering the partner's point of view (wives: *z* = 2.76, *p* < .01). Remaining comparisons in Study 1 and all such comparisons in Study 2 were nonsignificant.

finement of the contextual model should acknowledge the possibility that husbands and wives differ in their processing of partner behavior. In its original formulation the contextual model assumed that the processing of partner behavior was the same for husbands and wives, and in this regard the model is similar to most psychological models of overt behavior in marital interaction, such as Gottman's (1979) structural model, in that it does not assign separate and unique roles and qualities to husbands and wives. However, the results of the present studies tend to be more reliable for wives than for husbands,<sup>6</sup> and overall, they depict husbands whose behavior is more predictable from marital quality than from attributions (cf. Table 3) and wives whose behavior seems to covary somewhat closely with the inferences they make for marital problems. This may reflect a more differentiated and sensitive capacity among women to interpret and respond to partner behavior (e.g., husbands base their behavior on global sentiment toward the marriage, whereas wives base their behavior on global sentiment as well as their explanations for partner behavior), but far more research and theoretical development is required on this subject before such a characterization of processing can be held with confidence (see Peplau, 1983).

### *Implications for Research*

These studies help to clarify our understanding of existing research on marriage. For example, with regard to research on marital interaction, the present findings indicate that the degree to which spouses make maladaptive attributions may account in part for why distressed spouses tend to exhibit and reciprocate negative partner behavior (e.g., Gottman, 1979), why distressed spouses are especially reactive to negative partner behavior (e.g., Jacobson, Waldron, & Moore, 1980), and why distressed wives are especially prone to these behavioral tendencies (e.g., Floyd & Markman, 1983). With regard to research on attributions, these findings lend ecological validity to the experimentally obtained relation between attributions and behavior (Fincham & Bradbury, 1988) and suggest that maladaptive attributions may predict declines in marital quality over time (e.g., Fincham & Bradbury, 1987) because of their association with less positive behavior and more negative behavior in interaction; the degree to which attributional tendencies precede rather than follow from marital interaction is an important topic for future research.

Several new lines of research are also suggested by the present results. First, it would be valuable to compare attributions in the manner they are assessed here with attributions made "on-line" for each partner behavior in interaction. A high degree of redundancy between these two modes of measurement would suggest that attributions are best understood as stable and traitlike variables, whereas low redundancy would suggest they are more situational and statelike in nature. It is possible also that attributions for negative events will be traitlike for distressed couples but statelike for happy couples (see Baucom et al., 1989). Second, in view of theoretical links proposed between attributions and specific affects in social psychology (e.g., Weiner, 1985b) and empirical studies relating the expression of specific affects with declines in marital satisfaction (Gottman & Krokoff, 1989), it would be useful to determine whether at-

tributions are related to specific affects in interaction and whether certain attributions are differentially predictive of affective expressions (e.g., viewing the causes of marital problems as stable and global may predict sadness, whereas viewing the partner as behaving intentionally and selfishly when contributing to problems may predict anger). Finally, these studies indicate that variation in attributions across spouses relates to variation in overt behavior. A more powerful test of the attribution-behavior association could be undertaken by examining the degree to which behavior is a function of variation in attributions within spouses over time.

### Conclusion

Although interactional differences between distressed and nondistressed couples are well documented, surprisingly little is known about the factors that contribute to these differences. The two studies presented here indicate that spouses' behaviors in interaction are related to the attributions they make for marital problems. In addition to extending the interaction literature, these studies are noteworthy because, unlike many marital attribution studies, they relate spouses' attributions to important aspects of marriage in a manner unconfounded by common method variance. Further development of theory and research in this domain appears necessary because "very few studies have addressed the intricate connections between overt and covert classes of events within interaction" and because "the interface between overt behaviors and their interpretive antecedents and consequences defines a very important area for future research" (McClintock, 1983, p. 108).

<sup>6</sup> Fisher's *r*-to-*z* transformations were used to compare the partial correlations between attributions and behavior for husbands and wives. In Table 1, the association between responsibility attributions and consideration of the partner's point of view was greater for wives than for husbands ( $z = 2.96, p < .005$ ). In Table 2, the association between causal attributions and negative behavior ( $z = 2.80, p < .01$ ) and between causal attributions and positive behavior ( $z = 3.36, p < .001$ ) was greater for wives than for husbands. In Table 3, for causal attributions, associations were greater for wives than for husbands with the avoidant → avoidant sequence ( $z = 3.40, p < .001$ ) and the negative → negative sequence ( $z = 4.80, p < .0001$ ). For responsibility attributions, associations were greater for husbands with the negative → avoidant ( $z = 2.26, p < .05$ ), negative → negative ( $z = 2.10, p < .05$ ), and negative → positive ( $z = 2.53, p < .05$ ) sequences. Thus, in no case was the association between attributions and behavior greater for husbands than for wives. Remaining comparisons in the tables were nonsignificant.

### References

- Allison, P., & Liker, J. (1982). Analyzing sequential categorical data on dyadic interaction: A comment on Gottman. *Psychological Bulletin, 91*, 393-403.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Baucom, D. H., & Adams, A. N. (1987). Assessing communication in marital interaction. In K. D. O'Leary (Ed.), *Assessment of marital discord* (pp. 139-181). Hillsdale, NJ: Erlbaum.

- Baucom, D. H., & Epstein, N. (1990). *Cognitive-behavioral marital therapy*. New York: Brunner/Mazel.
- Baucom, D. H., Sayers, S. L., & Duhe, A. (1989). Attributional style and attributional patterns among married couples. *Journal of Personality and Social Psychology*, 56, 596-607.
- Beach, S. R., Sandeen, E. E., & O'Leary, K. D. (1990). *Depression in marriage*. New York: Guilford Press.
- Bradbury, T. N., & Fincham, F. D. (1987). Affect and cognition in close relationships: Towards an integrative model. *Cognition and Emotion*, 1, 59-87.
- Bradbury, T. N., & Fincham, F. D. (1988). Individual difference variables in close relationships: A contextual model of marriage as an integrative framework. *Journal of Personality and Social Psychology*, 54, 713-721.
- Bradbury, T. N., & Fincham, F. D. (1989). Behavior and satisfaction in marriage: Prospective mediating processes. *Review of Personality and Social Psychology*, 10, 119-143.
- Bradbury, T. N., & Fincham, F. D. (1990). Attributions in marriage: Review and critique. *Psychological Bulletin*, 107, 3-33.
- Bradbury, T. N., & Fincham, F. D. (1991a). A contextual model for advancing the study of marital interaction. In G. J. O. Fletcher & F. D. Fincham (Eds.), *Cognition in close relationships* (pp. 127-147). Hillsdale, NJ: Erlbaum.
- Bradbury, T. N., & Fincham, F. D. (1991b). The analysis of sequence in social interaction. In D. G. Gilbert & J. J. Conley (Eds.), *Personality, social skills, and psychopathology* (pp. 257-289). New York: Plenum Press.
- Bugental, D. B. (1987). Attributions as moderator variables within social interactional systems. *Journal of Social and Clinical Psychology*, 5, 469-484.
- Cairns, R. B., & Green, J. A. (1979). How to assess personality and social patterns: Observations or ratings? In R. B. Cairns (Ed.), *The analysis of social interactions: Methods, issues, and illustrations* (pp. 209-226). Hillsdale, NJ: Erlbaum.
- Camper, P. M., Jacobson, N. S., Holtzworth-Munroe, A., & Schmalig, K. B. (1988). Causal attributions for interactional behaviors in married couples. *Cognitive Therapy and Research*, 12, 195-209.
- Christensen, A. (1987). Assessment of behavior. In K. D. O'Leary (Ed.), *Assessment of marital discord* (pp. 13-57). Hillsdale, NJ: Erlbaum.
- Crane, D. R., Allgood, S. M., Larson, J. H., & Griffin, W. (1990). Assessing marital quality with distressed and nondistressed couples: A comparison and equivalency table for three frequently used measures. *Journal of Marriage and the Family*, 52, 87-93.
- Dodge, K. A., Pettit, G., McClaskey, C. L., & Brown, M. M. (1986). Social competence in children. *Monographs of the Society for Research in Child Development*, 51(2, Serial No. 213).
- Doherty, W. J. (1982). Attribution style and negative problem-solving style in marriage. *Family Relations*, 31, 201-205.
- Eiser, J. R. (1983). From attributions to behavior. In M. Hewstone (Ed.), *Attribution theory: Social and functional extensions* (pp. 160-169). Oxford, England: Blackwell.
- Fincham, F. D., Beach, S. R., & Nelson, G. (1987). Attribution processes in distressed and nondistressed couples: 3. Causal and responsibility attributions for spouse behavior. *Cognitive Therapy and Research*, 11, 71-86.
- Fincham, F. D., & Bradbury, T. N. (1987). The impact of attributions in marriage: A longitudinal analysis. *Journal of Personality and Social Psychology*, 53, 510-517.
- Fincham, F. D., & Bradbury, T. N. (1988). The impact of attributions in marriage: An experimental analysis. *Journal of Social and Clinical Psychology*, 7, 122-130.
- Fincham, F. D., & Bradbury, T. N. (1991a). Cognition in marriage: A program of research on attributions. In W. H. Jones & D. Perlman (Eds.), *Advances in personal relationships* (Vol. 2, pp. 159-203). London: Kingsley.
- Fincham, F. D., & Bradbury, T. N. (1991b). *Marital satisfaction, depression, and attributions: A longitudinal analysis*. Manuscript submitted for publication.
- Fincham, F. D., & Bradbury, T. N. (1992). Assessing attributions in marriage: The Relationship Attribution Measure. *Journal of Personality and Social Psychology*, 62, 457-468.
- Fincham, F. D., & Jaspars, J. (1980). Attribution of responsibility: From man the scientist to man as lawyer. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 81-138). San Diego, CA: Academic Press.
- Fincham, F. D., & O'Leary, K. D. (1983). Causal inferences for spouse behavior in maritally distressed and nondistressed couples. *Journal of Social and Clinical Psychology*, 1, 42-57.
- Floyd, F. J., & Markman, H. J. (1983). Observational biases in spouse observation: Toward a cognitive/behavioral model of marriage. *Journal of Consulting and Clinical Psychology*, 51, 450-457.
- Geiss, S. K., & O'Leary, K. D. (1981). Therapist ratings of frequency and severity of marital problems: Implications for research. *Journal of Marital and Family Therapy*, 7, 515-520.
- Gottman, J. M. (1979). *Marital interaction: Experimental investigations*. San Diego, CA: Academic Press.
- Gottman, J. M., & Krokoff, L. J. (1989). Marital interaction and satisfaction: A longitudinal view. *Journal of Consulting and Clinical Psychology*, 57, 47-52.
- Gottman, J. M., & Levenson, R. L. (1986). Assessing the role of emotion in marriage. *Behavioral Assessment*, 8, 31-48.
- Heider, F. (1944). Social perception and phenomenal causality. *Psychological Review*, 51, 358-374.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Jacobson, N. S., & Margolin, G. (1979). *Marital therapy: Strategies based on social learning and behavior exchange principles*. New York: Brunner/Mazel.
- Jacobson, N. S., Waldron, H., & Moore, D. (1980). Toward a behavioral profile of marital distress. *Journal of Consulting and Clinical Psychology*, 48, 696-703.
- Kelley, H. H. (1973). The process of causal attribution. *American Psychologist*, 28, 107-128.
- Kelley, H. H., Berscheid, E., Christensen, A., Harvey, J. H., Huston, T. L., Levinger, G., McClintock, E., Peplau, L. A., & Peterson, D. R. (Eds.). (1983). *Close relationships*. San Francisco: Freeman.
- Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: A theory of interdependence*. New York: Wiley.
- Kleinbaum, D. G., & Kupper, L. L. (1978). *Applied regression analysis and other multivariable methods*. North Scituate, MA: Duxbury.
- Locke, H., & Wallace, K. (1959). Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*, 21, 251-255.
- Margolin, G. (1983). An interactional model for the assessment of marital relationships. *Behavioral Assessment*, 5, 103-127.
- McClintock, E. (1983). Interaction. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, E. McClintock, L. A. Peplau, & D. R. Peterson (Eds.), *Close relationships* (pp. 68-109). San Francisco: Freeman.
- Miller, P. C., Lefcourt, H. M., Holmes, J. G., Ware, E. E., & Saleh, W. E. (1986). Marital locus of control and marital problem solving. *Journal of Personality and Social Psychology*, 51, 161-169.
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45, 141-151.
- Peplau, L. A. (1983). Roles and gender. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, E. McClintock, L. A. Peplau, & D. R. Peterson (Eds.), *Close relationships* (pp. 220-264). San Francisco: Freeman.

- Raush, H. L., Barry, W. A., Hertel, R. K., & Swain, M. A. (1974). *Communication, conflict, and marriage*. San Francisco: Jossey-Bass.
- Rusbult, C., Johnson, D. J., & Morrow, G. D. (1986). Impact of couple patterns of problem solving on distress and nondistress in dating relationships. *Journal of Personality and Social Psychology*, 50, 744-753.
- Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, 60, 53-78.
- Sackett, G. P. (1979). The lag sequential analysis of contingency and cyclicity in behavioral interaction research. In J. D. Osofsky (Ed.), *Handbook of infant development* (pp. 623-649). New York: Wiley.
- Shaver, K. (1985). *The attribution of blame: Causality, responsibility, and blameworthiness*. New York: Springer-Verlag.
- Shaver, K., & Drown, D. (1985). On causality, responsibility, and self-blame: A theoretical note. *Journal of Personality and Social Psychology*, 50, 697-702.
- Sillars, A. L. (1981). Attributions and interpersonal conflict resolution. In J. H. Harvey, W. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 3, pp. 279-305). Hillsdale, NJ: Erlbaum.
- Sillars, A. L. (1985). Interpersonal perception in relationships. In W. Ickes (Eds.), *Compatible and incompatible relationships* (pp. 277-305). New York: Springer-Verlag.
- Stuart, R. B. (1980). *Helping couples change*. New York: Guilford Press.
- Weiner, B. (1985a). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548-573.
- Weiner, B. (1985b). "Spontaneous" causal thinking. *Psychological Bulletin*, 97, 74-84.
- Weiss, R. L. (1984). Cognitive and behavioral measures of marital interaction. In K. Hahlweg & N. S. Jacobson (Eds.), *Marital interaction: Analysis and modification* (pp. 232-252). New York: Guilford Press.
- Weiss, R. L., & Heyman, R. E. (1990). Observation of marital interaction. In F. D. Fincham & T. N. Bradbury (Eds.), *The psychology of marriage* (pp. 87-117). New York: Guilford Press.
- Worell, J. (1988). Women's satisfaction in close relationships. *Clinical Psychology Review*, 8, 477-498.

Received November 15, 1990

Revision received April 8, 1992

Accepted May 11, 1992 ■

## Low Publication Prices for APA Members and Affiliates

**Keeping You Up-to-Date:** All APA members (Fellows; Members; Associates, and Student Affiliates) receive—as part of their annual dues—subscriptions to the *American Psychologist* and *APA Monitor*.

High School Teacher and International Affiliates receive subscriptions to the *APA Monitor*, and they can subscribe to the *American Psychologist* at a significantly reduced rate.

In addition, all members and affiliates are eligible for savings of up to 60% (plus a journal credit) on all other APA journals, as well as significant discounts on subscriptions from cooperating societies and publishers (e.g., the American Association for Counseling and Development, Academic Press, and Human Sciences Press).

**Essential Resources:** APA members and affiliates receive special rates for purchases of APA books, including the *Publication Manual of the APA*, the *Master Lectures*, and *Journals in Psychology: A Resource Listing for Authors*.

**Other Benefits of Membership:** Membership in APA also provides eligibility for low-cost insurance plans covering life, income protection, office overhead, accident protection, health care, hospital indemnity, professional liability, research/academic professional liability, student/school liability, and student health.

**For more information,** write to American Psychological Association, Membership Services, 750 First Street, NE, Washington, DC 20002-4242, USA