

Social Support, Problem Solving, and the Longitudinal Course of Newlywed Marriage

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Married couples ($N = 172$) were observed as newlyweds and observed again 1 year later while engaging in 2 problem-solving and 2 personal support discussions. Microanalytic coding of these conversations was used to examine associations between problem-solving and social support behaviors for 1 year and their relative contributions to 10-year trajectories of self-reported relationship satisfaction and dissolution. Results demonstrated that initially lower levels of positive support behaviors and higher levels of negative support behaviors predicted 1-year increases in negative emotion displayed during problem-solving conversations. Emotions coded from the initial problem-solving conversations did not predict 1-year changes in social support behaviors. Controlling for emotions displayed during problem-solving interactions eliminated or reduced associations between initial social support behaviors and (a) later levels of satisfaction and (b) relationship dissolution. These findings corroborate models that prioritize empathy, validation, and caring as key elements in the development of intimacy (e.g., Reis & Shaver, 1988) and suggest that deficits in these domains foreshadow deterioration in problem solving and conflict management. Implications for integrating support and problem solving in models of relationship change are outlined, as are implications for incorporating social support in education programs for developing relationships.

Keywords: marriage, social support, problem solving, marital satisfaction, divorce

Nearly all communication-based research and theory on marriage has been focused on how couples contend with conflicts and disagreements. This has proven to be a fruitful starting point for understanding and altering the course of marriage, yet it leaves unaddressed important questions about how problem solving and conflict resolution might combine with couples' management of other core interpersonal tasks to produce variability in marital outcomes. In view of theoretical speculation and growing evidence that relationship functioning is linked with how partners respond to one another's expressions of personal stress and vulnerability (e.g.,

Cutrona, 1996; Neff & Karney, 2005), the purpose of the present article is to examine couples' problem-solving and social support behaviors in relation to one another and to 10-year changes in marital quality and marital status. Clarifying the interplay between problem solving and social support in the development of relationship distress is important for identifying promising intervention targets in education programs with young couples and, as we outline below, for reconciling competing theoretical perspectives on how marriages change.

In social learning accounts of marital deterioration, which draw from the broad conceptual framework provided by Bandura (1977), it is contended that partners' unhappiness results from mismanaged conflict and problem solving generally and from partners' inadvertent tendency to negatively reinforce one another's maladaptive behaviors. According to this view,

Distress results from couples' aversive and ineffectual responses to conflict. When conflicts arise, one or both partners may respond aversively by nagging, complaining, distancing, or becoming violent until the other gives in, creating a coercive cycle that each partner contributes to and maintains. (Koerner & Jacobson, 1994, p. 208)

Other domains of interaction assume secondary importance as antecedents of relationship distress from this vantage point, such that couple functioning in these domains is understood to be the by-product of partners' inability to reconcile their conflicting wants and needs. Thus, to the extent that coercive processes fuel hostility and tension within the relationship, other important tasks that require partners to coordinate and coregulate their behaviors

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and emotions—such as parenting, sexual intimacy, or empathizing with the partner's experience of daily hassles—are expected to be compromised as a consequence.

The intimacy process model (Reis & Patrick, 1996; Reis & Shaver, 1988) offers a different explanation for how intimate relationships change and deteriorate. According to this view, feelings of intimacy arise and deepen between partners because they engage in behaviors that lead one another to feel understood, validated, and cared for, particularly following the disclosure of important self-relevant thoughts and feelings. Relationship distress arises either because one or both partners fail to engage in behaviors likely to produce the experience of validation and understanding in the face of these disclosures or because partners engage in behaviors that directly invalidate one another or that convey a lack of care, compassion, or understanding. Whereas various forms of noncontingent and contingent negativity in the face of disagreements are the most salient behaviors in problem-solving models of distress, the intimacy process model instead highlights the expression of a vulnerability or personal concern followed by the partner dismissing that concern, minimizing it, or otherwise indicating that the mate is not valued. According to the intimacy process model, conflict is secondary to the ways in which partners respond to one another's expressions of vulnerability and arises because this core dynamic of caring and concern is thwarted.

It is important to emphasize that these two models can be viewed as having a common conceptual foundation. The negative behaviors favored in social learning theory can be viewed as invalidating within the intimacy process model, for example, and the critical and dismissing behaviors emphasized as causes of distress in the intimacy process model can be understood readily within the broader framework of rewarding and punishing behaviors provided by social learning theory. Nevertheless, the models draw attention to two distinctly different challenges that couples face (*viz.*, addressing differences and communicating compassion in response to personal disclosures), the models assign different causal priorities to the importance of managing these challenges well, and the models specify different intervention targets in programs designed to prevent relationship distress.

A long tradition of observational research on conflict and problem solving lends some support to the view that mismanaged conflicts predict declines in relationship satisfaction. For example, couples who remain married over 10 years but grow dissatisfied display higher rates of negative behaviors as newlyweds, compared with their counterparts who remain maritally satisfied (Kiecolt-Glaser, Bane, Glaser, & Malarkey, 2003; for a review see Karney & Bradbury, 1995). However, other lines of evidence suggest that this model may be inaccurate or incomplete for explaining how marriages deteriorate. First, well-designed studies sometimes fail to show expected associations between patterns of observed problem-solving behavior and relationship outcomes. In Kim, Capaldi, and Crosby's (2007) recent 2.5-year longitudinal analysis, for example, intact and separated couples did not differ across 15 of 18 negative codes and code sequences, and satisfied and dissatisfied intact couples did not differ in 14 of these 18 comparisons. Moreover, none of the 7 reliable differences were consistent across the intact or separated and satisfied or dissatisfied comparisons. Second, contrary to the view that higher rates of negative problem-solving behaviors signal a worsening course for marriage, studies have shown that more negativity can slow rates

of relationship deterioration (e.g., Karney & Bradbury, 1997). This suggests that there is considerable heterogeneity in the effects of negative behaviors on marriage, with at least some classes of behavior (e.g., requests for change that are negative but specific; see Overall, Fletcher, Simpson, & Sibley, 2009) having the potential to strengthen relationship maintenance and bring partners closer together.

Third, positive behaviors and emotions, even when observed in the context of marital problem solving, predict relationship outcomes, either as main effects (Kim et al., 2007) or as moderators of the effects of negative behaviors (e.g., Huston & Chorost, 1997). This could suggest either that the traditional focus on negative problem-solving behaviors needs to be expanded to incorporate the role of positive expressions in learning-based mechanisms (e.g., positivity may offset coercive cycles) or that positive behaviors are best conceptualized as means by which partners communicate their understanding and validation for one another. Consistent with this latter possibility, when observational coding of problem-solving interactions relies heavily on concepts derived from attachment theory (e.g., that individuals are clear and direct in stating their needs, allowing each to serve as a secure and supportive base for the other; Bowlby, 1982), the resulting codes account for more unique variation in relationship satisfaction than do more typical problem-solving behaviors (Crowell et al., 2002). And finally, when couples are observed in tasks requiring them to discuss personal and explicitly nonmarital issues, behaviors reflecting social support processes (a) predict change in relationship satisfaction over and above behaviors displayed in problem-solving discussions and (b) moderate the effects of problem-solving behavior, such that negative problem-solving behaviors have less of an impact on marital satisfaction when the quality of social support is strong (Pasch & Bradbury, 1998).

In sum, although there is evidence that relationships deteriorate as a result of couples' aversive and ineffectual responses to conflict, other findings cast doubt on the ability of this model to account fully for the interactional antecedents of relationship distress. Recent studies that focus directly on other core interpersonal tasks in marriage suggest that the ways in which intimate partners support one another and communicate caring and compassion, particularly in response to one another's disclosures of individual limitations or personal desires for change, can add to our understanding of the interpersonal processes likely to generate satisfying and enduring relationships. The few longitudinal studies in which relationship problem solving as well as social support were observed are limited, however, by the fact that they assess these two behavioral domains at a single point in time (e.g., Lawrence et al., 2008; Pasch & Bradbury, 1998). Assessment of problem solving and social support at only a single point in time eliminates any opportunity to examine whether couples who are relatively poor at problem solving and conflict resolution subsequently experience a decline in the quality of social support that they exchange (as traditional learning-based models of marriage would suggest). Single behavioral assessments also eliminate the opportunity to examine whether couples who are relatively poor at validating and understanding one another in the face of personal disclosures subsequently deteriorate in their ability to work together to solve relationship difficulties (as the intimacy process model would predict).

The purpose of the present study is to fill this gap by examining the cross-lagged associations between problem-solving behaviors and social support behaviors assessed over the 1st year of marriage and their relation to 10-year changes in relationship satisfaction and dissolution. Assuming we replicate the finding that problem solving and social support are distinguishable domains of marital behavior (Pasch & Bradbury, 1998), we then test two sets of models. Problem-solving and conflict behavior are highlighted in the first set of models, which hold that higher levels of negative emotion and lower levels of positive emotion displayed during problem-solving conversations will predict 1-year declines in the quality of social support that partners provide, which in turn will predict lower levels of relationship satisfaction, faster rates of deterioration in relationship satisfaction, and an increased likelihood of divorce. Behaviors observed during support discussions 1 year after the initial assessment will mediate the association between emotions newlyweds display during initial problem-solving discussions and subsequent satisfaction trajectories and marital status, such that these associations will be weakened once support behaviors have been taken into account.

Social support behaviors are highlighted in the second set of models, which hold that higher levels of negative support behaviors and lower levels of positive support behaviors will predict 1-year declines in the quality of couples' problem-solving conversations (i.e., increasing negative emotion and decreasing positive emotion), which will in turn predict lower levels of relationship satisfaction, faster rates of deterioration in relationship satisfaction, and an increased likelihood of divorce. Behaviors observed during problem-solving discussions 1 year after the initial assessment will mediate the relationship between the behaviors newlyweds display during initial support discussions and subsequent satisfaction trajectories and marital status, such that these relationships will be weakened once problem-solving behaviors have been taken into account. Not all paths in these two sets of models are mutually exclusive (e.g., problem-solving and support behaviors can both account for unique variance in satisfaction trajectories and marital status), and although the literature does not provide enough specificity to predict which domain of behavior (if either) will predict the alternative behavior domain and relationship outcomes, we do expect that predicting relationship outcomes will be maximized with some combination of problem-solving and support behaviors.

The study incorporates important design elements that allow us to examine the proposed models. First, newlywed couples were followed over the first 10 years of marriage, so that behavioral effects on marital satisfaction during the critical early years of marriage could be assessed. Second, marital quality was assessed every 6 months during the first 4 years of marriage and again after 9 years and 10 years of marriage, providing the data necessary to examine marital trajectories over time rather than predicting satisfaction based on a single future assessment. Third, problem-solving behavior was assessed with two problem-solving discussions, one based on a topic identified by wives and one based on a topic identified by husbands. The use of two conflict discussions is optimal because it parallels the design of the support discussions and because prior research indicates that spouses' conflict behavior varies based on whose topic is being discussed (Heavey, Layne, & Christensen, 1993). Fourth and most important, behavioral data from both domains were collected at two time points: shortly after

spouses married and 1 year later, allowing us to examine whether one domain serves as a mediator for the other in predicting marital outcomes.

Method

Participants

One hundred seventy-two newly married couples were recruited, via marriage license searches, to participate in a study of newlywed marriage. Marriage licenses of couples married between May 1993 and January 1994 in Los Angeles County were screened to identify couples who were married for the first time, had been married less than 6 months, were between the ages of 18 years and 35 years, and had a minimum of 10 years of education. Couples who met the criteria were sent a letter describing the project and requesting that they return a postcard if they were interested in participating. Of the 3,606 letters that were sent, 637 couples (17.8%) returned the postcard (a comparable response rate to the 18% reported by Kurdek, 1991, in a similar study), 41 letters were undeliverable (1.1%) and 2,928 couples (81.2%) did not respond. Compared with nonresponders, responders were more likely to cohabitate premaritally (43% vs. 35%, effect size $r = .11$), were in school longer (15.2 years vs. 14.6 years, effect size $r = .18$ for husbands; 15.4 years vs. 14.5 years, effect size $r = .29$ for wives), were older (26.6 years vs. 26.2 years, effect size $r = .07$, wives only), and were in higher status jobs (effect size $r = .20$ for husbands; effect size $r = .18$ for wives). Interested couples were interviewed by telephone to insure that they met all inclusion criteria including the additional criteria that they had no children, were not currently expecting a child, could read and speak English, were living together, and had no plans to leave the Los Angeles area. Eligible couples were invited to participate in the project, and the first 172 who met the screening criteria and kept their scheduled laboratory appointment were included in the sample. Nearly all initial laboratory sessions took place within the first 6 months of marriage. Thirty-nine couples (23%) divorced over 10 years; the data used to calculate marital trajectories for the present analysis includes data from intact couples and data from divorced couples prior to their dissolution.

Husbands averaged 27.6 ($SD = 3.9$) years of age, had an average of 15.6 ($SD = 2.2$) years of education, and had a median annual income ranging from \$21,000 to \$30,000. Husbands reported their ethnicity as Caucasian (67%), Asian American–Pacific Islander (13%), Latino–Chicano (15%), African American (4%), and Middle Eastern (1%). Wives averaged 26.0 ($SD = 3.4$) years of age, had an average of 16.2 ($SD = 2.0$) years of education, and had a median annual income ranging from \$11,000 to \$20,000. Wives reported their ethnicity as Caucasian (61%), Asian American–Pacific Islander (15%), Latino–Chicano (16%), African American (5%), Middle Eastern (2%) and other (2%). These data are consistent with the racial breakdown of Los Angeles County in the 1990 census.

Procedure

Eligible spouses independently completed a set of questionnaires including a consent form, demographic forms, and measures of marital satisfaction and marital problems prior to and during a

3-hr laboratory session and were videotaped discussing two marital problems and two individual problems (Time 1). Spouses returned for a similar laboratory session 1 year later and were again observed discussing two marital and two individual problems (Time 3). Spouses were contacted every 6 months during the first 4 years of marriage and again approximately 9 years (Time 9) and 10 years (Time 10) after their weddings to determine marital status, and intact couples completed marital satisfaction questionnaires by mail. For all self-report assessments, spouses were instructed in a telephone call and in a cover letter to complete the questionnaires independently. Couples were paid \$25 for questionnaires completed via mail and \$75 for each laboratory session.

Problem-solving discussions. In these discussions, spouses were asked to work toward a resolution of an important marital problem. The topics for the problem-solving discussions were selected independently by each spouse based on his or her responses to the marital problem inventory (described below). Spouses discussed their topics in separate discussions for 10 min each. The order of the discussions was random. In rare instances when spouses selected the same topic, that topic was assigned to the spouse whose topic was chosen to be discussed first, and the other spouse's second choice was used for the second discussion. Before commencing the discussions, spouses were instructed to "discuss the topic for 10 min and try to work toward a mutually satisfying solution."

Support discussions. The intimacy process model assumes that the manner in which a partner responds to the personal interests and disclosures of the spouse will affect the partner's experience of relationship satisfaction. To sample this process, we used procedures developed by Pasch and Bradbury (1998), in which each couple engages in two 10-min conversations that are structured to create opportunities for spouses to solicit and offer support for making a personal change. For the first discussion, 1 spouse was randomly selected and asked to "talk about something you would like to change about yourself"; the spouse was encouraged to identify an important personal characteristic, problem, or issue that was not a source of tension in the marriage. Spouses had little difficulty identifying topics. Common topics included losing weight, making a career change, and improving extended family relationships. The partner was instructed to "be involved in the discussion and respond whatever way you wished." For the second discussion, the roles were reversed.

Questionnaires

Marital satisfaction was assessed with the Marital Adjustment Test (MAT; Locke & Wallace, 1959). The MAT is a widely used measure with high reliability demonstrated across many studies (split half = .90). Scores range from 2 to 158, with higher scores indicating greater marital satisfaction. Marital problems were assessed with the Inventory of Marital Problems (Geiss & O'Leary, 1981). The Inventory of Marital Problems measures the extent to which spouses encounter difficulties with 19 common sources of marital disagreement (e.g., communication, in-laws, finances, etc.), on an 11-point scale (1 = *not a problem*, 11 = *major problem*). The Inventory of Marital Problems was used to identify topics for the problem-solving discussion. The extent to which the individual issues chosen for the support discussions were a source of marital difficulties was assessed with a single item on a prein-

teraction questionnaire: "How much is this issue a source of difficulty in your marriage?" Spouses rated this on a 9-point scale (1 = *not at all*, 9 = *a great deal*). The extent to which the support topic was important to the support recipient was assessed with another item on the preinteraction questionnaire: "In this discussion you and your spouse will discuss an issue that you want to change. How much does this issue affect you?" The support recipient rated this on the same 9-point scale.

Behavioral Observation

Problem-solving behavior. Spouses' behavior during the problem-solving discussions was coded with the Specific Affect Coding System (SPAFF; see Gottman & Krokoff, 1989). Trained graduate and undergraduate coders were instructed to consider nonverbal cues, verbal content, voice tone, volume, and speed when coding the speaker's affect. Each 5-s block was classified as neutral, negative (displays of anger, contempt, whining, sadness or anxiety), or positive (displays of humor, affection, or interest) for each spouse. Five-second blocks were used to allow for the expression of multiple expressions of emotions during one speaking turn. Sadness and anxiety were not used for the current analyses because they were observed infrequently; whining was not used because reliability was relatively low. Factor analysis of the codes indicated that the positive codes load on the same factor and the negative codes load on the same factor (e.g., M. D. Johnson, 2002). Thus, the affect variables used here are positive affect (the sum of humor, affection, and interest) and negative affect (the sum of anger and contempt). Time 1 and Time 3 observations were coded consecutively by the same team, and intraclass correlations indicate adequate interobserver reliability (.66 and .93 for husbands' negative and positive affect, respectively; .91 and .68 for wives' negative and positive affect, respectively).

Support behavior. Spouses' behavior during the support discussions was assessed with the Social Support Interaction Coding System (SSICS; Pasch, Harris, Sullivan, & Bradbury, 2004). Trained graduate and undergraduate coders assigned a code for each speaking turn for the spouse who had chosen the topic (the "helpee") and the spouse who was responding (the "helper"). Behavior was rated as either positive or negative, and the helper's positive behavior was further delineated as positive instrumental, positive emotional, or positive other. A summary positive helper code was created to simplify analyses by summing the three positive codes. Intraclass correlations indicate adequate interobserver reliability at Time 1 (.80 and .86 for helpers' negative and positive affect, respectively; .75 and .79 for helpees' negative and positive affect, respectively) and at Time 3 (.67 and .83 for helpers' negative and positive affect, respectively, and .72 and .84 for helpees' negative and positive affect, respectively).

Results

Preliminary Analyses

Descriptive statistics. Descriptive statistics for the marital satisfaction data are shown in Table 1. Of the 344 spouses participating, trajectories could not be estimated for 8 (4 couples) because they dissolved their marriages before the third assessment

Table 1
 Descriptive Statistics for Marital Satisfaction Scores (Marital Adjustment Test) Across All Assessments

Variable	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10
Husbands										
<i>M</i>	126.7	122.6	123.5	120.9	119.7	119.9	117.1	118.1	111.7	114.3
<i>SD</i>	16.9	20.5	20.4	20.6	22.8	22	24.1	22.9	20.7	20.3
<i>n</i>	172	162	163	135	134	135	121	127	131	116
Wives										
<i>M</i>	130.1	126.3	126.3	126	122.8	121.5	120.6	118.3	113.3	114.8
<i>SD</i>	16.1	17.7	17.7	18.3	20.6	21.1	23.8	21.4	21.7	25.3
<i>n</i>	172	162	163	138	136	141	124	128	134	119
Months elapsed since wedding										
<i>M</i>	4.7	11.6	17	24	30.1	36.2	42.6	49.2	107.6	120.6
<i>SD</i>	1.5	2.0	1.8	2.0	2.0	2.1	2.3	2.7	8.1	8.6

and thus had fewer than three data points. Two couples had data missing from 1 spouse, so that trajectories could be estimated only for 1 partner. Of the 344 spouses, 334 (97%) provided data for these analyses.

The descriptive statistics for the conflict codes and the support codes for Time 1 and Time 3 are shown in Table 2. The conflict and negative support codes were positively skewed and were thus subjected to a logarithmic transformation. All subsequent analyses have the improved transformed distributions.

Time 1 associations between conflict behavior, support behavior, and marital satisfaction. The correlations between conflict behavior and marital satisfaction and between support behavior and marital satisfaction at Time 1 were computed. Partial correlations for conflict behavior were computed by controlling for problem severity. Partial correlations for support behavior were computed by controlling for the extent to which the individual issue was a source of difficulty in the marriage. In both cases, the partial correlations were smaller than the correlations; hence, the

partial correlations are emphasized here. All correlations were in the expected direction; that is, negative behavior was negatively associated with satisfaction and positive behavior was positively associated with satisfaction. The associations between Time 1 conflict behavior and satisfaction were nonsignificant or relatively weak. Seven of the 16 correlations were significant, ranging from .13 to .22. The associations between support behavior and satisfaction were more consistently significant, though also somewhat weak. Twelve of the 16 correlations were significant, ranging from .13 to .26. Mean problem severity ratings for the conflict discussions were 5.06 and 3.87 (on a scale of 1–11), and mean problem importance ratings for the support discussions were 7.1 and 7.68 (on a scale of 1–9) for husbands and wives, respectively. Mean ratings of the extent to which the support topics were a source of marital difficulties were 3.69 and 3.36 (on a scale of 1–9) for husbands and wives, respectively. Correlations between problem-severity ratings and problem-importance ratings were .17 and .15 for husbands and wives, respectively.

Table 2
 Descriptive Statistics and Differences Between Time 1 and Time 3 for Conflict and Support Codes

Variable	Conflict						Support					
	Positive			Negative			Positive			Negative		
	Time 1	Time 3	<i>t</i>	Time 1	Time 3	<i>t</i>	Time 1	Time 3	<i>t</i>	Time 1	Time 3	<i>t</i>
Husband-selected topics												
Husband behavior												
<i>M</i>	.47	.30	4.0**	.38	.49	−2.4*	.66	.59	3.9**	.04	.09	−0.2
<i>SD</i>	.40	.39		.51	.58		.20	.23		.10	.16	
Wife behavior												
<i>M</i>	.47	.36	2.8**	.60	.70	−2.4*	.60	.59	0.8	.07	.08	−0.3
<i>SD</i>	.38	.43		.60	.64		.23	.49		.14	.13	
Wife-selected topics												
Husband behavior												
<i>M</i>	.47	.34	3.6**	.39	.70	−2.4*	.60	.59	0.1	.07	.08	−0.2
<i>SD</i>	.43	.38		.53	.64		.23	.24		.13	.15	
Wife behavior												
<i>M</i>	.53	.35	4.4**	.59	.79	−3.9**	.64	.66	−0.6	.07	.05	0.3
<i>SD</i>	.44	.40		.60	.67		.22	.23		.13	.11	

Note. Data are from 150 couples who completed the Time 3 behavioral assessment; degrees of freedom = 149.
 * $p < .05$. ** $p < .01$.

Comparison of behavior over time. Table 2 also shows the differences in behavior between Time 1 and Time 3. Paired-samples *t* tests were computed to examine the extent to which spouses displayed different levels of conflict or support behavior over time; this was done separately for husbands and wives. There were consistent differences in conflict behavior over time; husbands and wives were significantly less positive and significantly more negative during problem-solving discussions at Time 3 compared with Time 1, for husband-selected and wife-selected topics. Support behavior appeared to be more stable over time; there were no significant differences between Time 1 and Time 3 support behaviors for wives. For husbands, there were no differences over time when providing support for their wives (wife-selected topics), but husbands were significantly less positive at Time 3, compared with Time 1, when receiving support from their wives (husband-selected topics).

Associations between support behavior and conflict behavior. Correlations were computed to examine the extent to which conflict and support behavior were distinguishable empirically, separately for husbands and wives, for each of the two discussions at Time 1 (see Table 3). Correlation patterns are similar when comparing husbands and wives and when comparing husbands' topics and wives' topics. Averaging over actors and topics, the mean correlation between negative affect and negative support is .37, the mean correlation between positive affect and positive support is .08, the mean correlation between positive affect and negative support is -.20, and the mean correlation between negative affect and positive support is -.31. The same pattern of results is found among the Time 3 variables (not shown); the mean correlation between negative affect and negative support is .31, the mean correlation between positive affect and positive support is .11, the mean correlation between positive affect and negative support is -.18, and the mean correlation between negative affect and positive support is -.34. Together, these correlations indicate that although there is some overlap between conflict and support behavior—particularly among negative codes—the two are sufficiently distinct to be examined as separate variables.

Associations Between Time 1 Behavior and Marital Satisfaction Trajectories

Preliminary growth curve analyses. A linear model was tested using the mean of the within-subject satisfaction scores for

each spouse and the slope of each spouse's marital satisfaction over the first 10 years of marriage. This baseline model is a within-subject regression of each spouse's satisfaction scores onto a line with a constant, a slope, and an error coefficient. The model can be specified as follows:

$$Y_{ij} = \beta_1(\text{husband}) + \beta_2(\text{wife}) + \beta_3(\text{husband time}) + \beta_4(\text{wife time}) + r, \quad (1)$$

where Y_{ij} is the marital satisfaction of an individual spouse of couple j at time i ; β_1 is the level for the husband of couple j , that is, the mean satisfaction score of the husband of couple j across assessments; β_2 is the level for the wife of couple j , that is, the mean satisfaction score of the wife of couple j across assessments; β_3 is the slope for the husband of couple j , that is, the rate of change in satisfaction scores over time for the husband of couple j ; and β_4 is the slope for the wife of couple j , that is, the rate of change in satisfaction scores over time for the wife of couple j .

Time was measured in days since the couple's wedding, divided by 30 (to be analogous to a month), and centered to represent the midpoint of the assessments for each spouse. Equation 1 follows the procedure described by Raudenbush, Brennan, and Barnett (1995) and allows for the simultaneous estimation of the parameters of both spouses. Each parameter in Equation 1 includes a constant and a unique error term, such that

$$\beta_1 = \gamma_{10} + U_1, \quad (2)$$

$$\beta_2 = \gamma_{20} + U_2,$$

$$\beta_3 = \gamma_{30} + U_3,$$

and

$$\beta_4 = \gamma_{40} + U_4.$$

Using hierarchical linear modeling software (HLM 6.02; Raudenbush, Bryk, Cheong, Congdon, & Toit, 2004), the baseline model was estimated successfully, providing reliable estimates of all model parameters. Reliability estimates for growth curve models represent the proportion of variance in each parameter that can be treated as meaningful (i.e., true) variance; these estimates are expected to be lower than scale reliabilities, which are conceptually and mathematically different (Bryk & Raudenbush, 1992).

Table 3

Correlations Among Husbands' and Wives' Skill and Affect Codes, Observed in Discussions of Marital Topics Selected by Husbands (Above The Diagonal) and by Wives (Below The Diagonal)

Variable	1	2	3	4	5	6	7	8
1. H pos affect		-.24**	.10	-.22**	.64***	-.11	.09	-.23**
2. H neg affect	-.23**		-.31***	.34***	-.30***	.60***	-.38***	.31***
3. H pos support	.00	-.30***		-.61***	.18*	-.31***	.29***	-.55***
4. H neg support	-.10	.39***	-.69***		-.28**	.37***	-.25**	.77***
5. W pos affect	.80***	-.25**	.00	-.08		-.23**	.03	-.24*
6. W neg affect	-.34***	.69***	-.25**	.37***	-.34***		-.24**	.39***
7. W pos support	.09	-.35***	.77***	-.57***	.11	-.30***		-.21**
8. W neg support	-.21**	.41***	-.53***	.72***	-.24**	.37***	-.70***	

Note. Data are from 172 husbands and 172 wives at Time 1. H = husband; W = wife; pos = positive; neg = negative. * $p < .05$. ** $p < .01$. *** $p < .001$.

The reliability coefficients of the levels (the mean level of satisfaction across assessments) were .89 for husbands and .87 for wives. The reliability of the slope estimates (rate of change in satisfaction over time) were .66 for husbands and .66 for wives. HLM analyses estimating the impact of behaviors on levels and slopes only used the proportion of variance in the parameters indicated by the reliability estimates for coefficient estimation.

Parameters of marital satisfaction trajectories. The mean intercepts of the trajectories, which represent the level of satisfaction at the midpoint of the study because the data were centered, were 118.7 ($SD = 17.1$) for husbands and 122.5 ($SD = 14.8$) for wives. Though these levels are somewhat high, there is wide variability and, as expected, satisfaction declined over 10 years, indicated by the mean slope values, which were significantly less than zero, $t(167) = -9.3$ and $t(167) = -11.7$ for husbands and wives, respectively. On average, husbands' MAT scores declined 0.17 points per month ($SD = 0.2$) or 20.4 points in 10 years, and wives' MAT scores declined 0.21 points per month ($SD = 0.19$) or 25.2 points in 10 years. Chi-square statistics ($N = 167$, $dfs = 165$), ranging from 543.5–1,692.6 ($ps < .001$) indicate that there is sufficient variance to support a linear model of change in satisfaction, whereas findings from a model including a quadratic term (i.e., reliability coefficients, the effect of the coefficients, and the variance components) did not support the use of a curvilinear model. The linear model is tested below. Within spouses, higher levels of satisfaction are associated with slower rates of decline in satisfaction, for husbands ($r = .14$) and for wives ($r = .51$). Similarly, between-spouses analyses indicate that wives' satisfaction declines more slowly to the extent that their husbands are more satisfied ($r = .26$), as does the satisfaction of husbands whose wives are more satisfied ($r = .33$).

Findings. Four models were run for each spouse to evaluate the effect of Time 1 negative and positive conflict behavior and Time 1 negative and positive support on marital trajectories. The behavior variables were entered in each of the four parameters listed in Equation 2 that entered into Equation 1. For each model, spouses' behavior during discussions of their own topics and during discussions of their partners' topics was included. For example, the four parameters in Equation 2 for evaluating the effect of husbands' negative conflict behavior on marital trajectories were represented as follows (H = husband; W = wife):

$$\beta_1 = \gamma_{10} + \gamma_{11}(\text{H negative conflict behavior, H topic}), \\ + \gamma_{12}(\text{H negative conflict behavior, W topic}) + U_1,$$

$$\beta_2 = \gamma_{20} + \gamma_{21}(\text{H negative conflict behavior, H topic}), \\ + \gamma_{22}(\text{H negative conflict behavior, W topic}) + U_2,$$

$$\beta_3 = \gamma_{30} + \gamma_{31}(\text{H negative conflict behavior, H topic}), \\ + \gamma_{32}(\text{H negative conflict behavior, W topic}) + U_3,$$

$$\beta_4 = \gamma_{40} + \gamma_{41}(\text{H negative conflict behavior, H topic}), \\ + \gamma_{42}(\text{H negative conflict behavior, W topic}) + U_4.$$

The effect sizes (r) showing the extent to which affect and support are associated with mean levels of satisfaction over time are shown in Table 4. These effect sizes indicate that husbands'

Table 4
Effect Sizes Relating Time 1 Conflict and Support Behavior to Husbands' and Wives' Marital Satisfaction Levels

Variable	Conflict behavior		Support behavior	
	Negative	Positive	Negative	Positive
Husbands' satisfaction levels				
Husband behavior				
Husband topic	.11	.20**	.23**	.17*
Wife topic	.17*	.30***	.18*	.25**
Wife behavior				
Husband topic	.26**	.13	.17*	.25**
Wife topic	.18*	.21**	.20*	.16*
Wives' satisfaction levels				
Husband behavior				
Husband topic	.20*	.31***	.19*	.20**
Wife topic	.14	.37***	.20**	.23**
Wife behavior				
Husband topic	.28***	.19*	.28**	.23**
Wife topic	.25**	.31***	.39***	.27**

Note. Data are from 167 husbands and 167 wives; degrees of freedom = 165.

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

and wives' support and conflict behaviors significantly predict satisfaction levels in the expected direction across spouse and across topic, almost without exception. Husbands' and wives' behavior when discussing an area of conflict and when soliciting or providing support for one another was associated with their own and their spouses' level of satisfaction when discussing issues identified by husbands and by wives. Thus, in either task, acting negatively led to lower overall levels of satisfaction and acting positively led to higher overall levels of satisfaction. We see no evidence that negativity in problem-solving discussions is in any way beneficial to couples (cf. Karney & Bradbury, 1997), but consistent with recent findings from Kim et al. (2007), we do see that effects associated with positive affect during problem-solving discussions are comparable in magnitude with those associated with negative affect.

The effect sizes showing the extent to which conflict and support behavior are associated with change in satisfaction over time are not shown because, in stark contrast with overall satisfaction levels, none of the effect sizes predicting the slope of husbands' and wives' satisfaction were significant. Thus, neither Time 1 conflict behavior nor Time 1 support behavior is associated with the rate of decline of husbands and wives satisfaction over the first 10 years of marriage. Based on these findings, the focus of the mediational hypotheses will be on satisfaction levels only.

Associations Between Support and Conflict Behavior Over Time

Hierarchical multiple regression was used to test whether Time 1 problem-solving behavior is associated with Time 3 support behavior after controlling for the corresponding Time 1 support behavior and Time 1 marital satisfaction. Only two of the 32 coefficients were significant for husbands, and three of the 32 coefficients were significant for wives, indicating that behaviors displayed during the Time 1

problem-solving conversations do not predict changes in support behaviors from Time 1 to Time 3.

A second set of regression analyses was conducted to test whether Time 1 support behavior is associated with Time 3 problem-solving behavior; Time 1 problem-solving codes and Time 1 marital satisfaction were entered first (see Table 5). For husbands, negative behavior in their Time 3 problem-solving discussions was significantly predicted by Time 1 negative and positive support behavior across spouse and across topic. Husbands were more negative during Time 3 problem-solving discussions if they and their wives were more negative and less positive in providing and eliciting support at Time 1. For wives, negative conflict behavior at Time 3 was significantly predicted by Time 1 negative support behavior across spouse and across topic. Wives were more negative during Time 3 problem-solving discussions when they and their husbands were more negative in providing and eliciting support at Time 1. Compared with husbands, however, Time 1 positive support behavior did not predict wives' Time 3 negative behavior as consistently; only three of the eight betas were significant. However, husbands who provided more positive support and who asked for support more positively at Time 1 had wives who displayed less negative affect during problem-solving discussions at Time 3. In addition, wives displayed less negative affect at Time 3 if they were more positive in eliciting support at Time 1 (wife-selected topic), but not if they provided more positive support at Time 1 (husband-selected topic).

These findings indicate that increases in negative problem-solving behaviors from Time 1 to Time 3 can be predicted by Time 1 social support codes, after adjusting for initial marital satisfaction. In contrast, changes in positive behaviors during the problem-solving conversations were unrelated to Time 1 support codes. Based on these findings, only negative conflict behavior is tested next as a mediator of associations between Time 1 support and 10-year levels of marital satisfaction and marital status. Specifically, we test the residualized change in negative conflict behavior as a mediator.

Mediational Analyses: Predicting Levels of Marital Satisfaction

Residualized change in problem-solving behavior and marital satisfaction trajectories. The effect sizes relating residualized change in problem-solving behavior with marital satisfaction trajectories from that time on (Time 3 to Time 10)¹ are presented in Table 6. The pattern of associations is similar to the associations between Time 1 conflict and marital satisfaction levels. The effect sizes indicate that residualized changes in husbands' and wives' negative conflict behavior significantly predict satisfaction levels across spouse and across topic, with the exception of wives' negative conflict behavior when discussing topics selected by their husbands. Regarding residualized changes in positive conflict behavior, only wives' behavior when discussing topics selected by their husbands was significant, predicting husbands' and wives' satisfaction. Only one of 16 effects was significant when predicting changes in satisfaction over time. All significant effects were in the expected direction.

Associations between Time 1 support behavior and marital satisfaction trajectories after controlling for residualized change in problem-solving behavior. Table 7 presents the effect sizes relating Time 1 support and satisfaction levels (Model 1), the effect sizes relating Time 1 support and satisfaction levels after controlling

for residualized change in problem-solving behavior (Model 2), and the decrease in effect size from Model 1 to Model 2. Effect sizes decreased for 29 out of the 32 tests of mediation, after controlling for residualized change in problem-solving behavior. We used a difference-in-coefficient method, specifically the simple-minus-partial-correlation technique (Olkin & Finn, 1995) modified for use with an HLM analysis, to test the effect of mediation. Difference-in-coefficient methods are comparable, but more conservative in Type-I error rates, to more widely used techniques (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Tests of mediation were significant for 24 of the 32 tests of mediation, providing evidence that the association between support behavior at Time 1 and levels of relationship satisfaction is mediated at least partially by residualized negative problem-solving behavior.²

The effect of Time 1 support on husbands' level of satisfaction becomes nonsignificant after controlling for residualized problem-solving behavior for eight of the 16 betas, indicating full mediation (Baron & Kenny, 1986). The effect of husbands' and wives' negative helping behavior on husbands' satisfaction level is fully mediated by residualized change in their problem-solving behavior when discussing husband-selected and wife-selected topics. The effect of wives' negative support-seeking behavior on husbands' satisfaction level is fully mediated by residualized change in problem-solving behavior when discussing husband-selected and wife-selected topics. The effect of wives' positive support-seeking behavior on husbands' satisfaction is fully mediated by residualized change in problem-solving behavior when discussing husband-selected topics. The effect of Time 1 support on wives' level of satisfaction becomes nonsignificant in two of the 16 betas. Specifically, the effect of husbands' positive support-seeking behavior on wives' satisfaction is fully mediated by residualized change in problem-solving behavior when discussing husband-selected and wife-selected topics.

Mediational Analyses: Predicting Marital Dissolution

Our next major analytic goal is to examine social support and problem-solving behaviors in relation to 10-year rates of relationship dissolution, first considering these behaviors independently as predictors and then turning to test mediational models linking support, problem-solving, and dissolution. Analyses already presented demonstrate that support codes predict changes in problem-solving codes and that the opposite paths are not significant, thus limiting tests of mediational frameworks to those involving changes in problem solving as the primary mediator. Before presenting these results, we test whether dissolution status is predicted

¹ Data were from 137 spouses who completed the Time 3 behavioral assessment. Similar analyses using marital satisfaction data from Time 1 to Time 3 (334 spouses) yielded the same results.

² Because operationalizing conflict in a different way might yield different results, the present data were also analyzed using skill codes (Kategoriensystem für Partnerschaftliche Interaktion; Hahlweg et al., 1984, see M. D. Johnson et al., 2005 for a description of this coding) to determine whether findings varied based on whether skills or affect were considered. Though the findings with skills codes were somewhat less consistent, the overall pattern of results was identical to those presented here; that is, Time 3 negative conflict skills mediated the relationship between Time 1 support and marital trajectories for husbands and wives.

Table 5

βs From Hierarchical Linear Regression Models Predicting Time 3 Conflict From Time 1 Support, Controlling for Time 1 Conflict and Time 1 Marital Satisfaction

Time 1 support behavior	Time 3 conflict behavior							
	Husband positive affect		Husband negative affect		Wife positive affect		Wife negative affect	
	Husband topic	Wife topic	Husband topic	Wife topic	Husband topic	Wife topic	Husband topic	Wife topic
	Husband topic for Time 1 support behavior							
H positive	.07	.10	-.39***	-.30***	.06	.12	-.25***	-.32***
H negative	-.02	-.10	.40***	.31***	-.04	-.09	.15*	.34***
W positive	-.01	.03	-.30***	-.21**	-.05	.00	-.11	-.11
W negative	-.01	-.07	.28***	.30***	-.03	-.03	.19**	.35***
	Wife topic for Time 1 support behavior							
H positive	-.01	.03	-.30***	-.21**	-.05	-.08	-.11	-.12
H negative	-.01	-.03	.42***	.30***	.05	.02	.20**	.16*
W positive	-.01	.05	-.31***	-.26***	.00	.02	-.12	-.19**
W negative	.00	-.04	.21*	.26***	.03	-.02	.14*	.29***

Note. Data are from 150 couples who completed the Time 3 behavioral assessment; degrees of freedom = 149.

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

by husbands' and wives' support and problem-solving codes, as assessed at Time 1 and Time 3. Concurrent reports of relationship satisfaction are controlled in these analyses.

Associations between Time 1 behavior and marital status. Hierarchical logistic regression analyses were used to test, in separate equations, whether Time 1 support behavior or Time 1 problem-solving behavior were associated with marital status at Time 10, after controlling for Time 1 marital satisfaction, for husbands and wives separately. In each set of equations, Time 1 marital satisfaction was entered in the first block, followed by the behavioral variables, entered together in the second block ($N = 172$; $df = 4$).

Husbands' and wives' Time 1 support behavior significantly predicted marital status at Time 10, $\chi^2_{\text{block}} = 11.8$, $p < .05$, and Nagelkerke $R^2 = .11$ for husbands; $\chi^2_{\text{block}} = 16.4$, $p < .01$, and Nagelkerke $R^2 = .15$ for wives, indicating that husbands' support behavior at Time 1 accounted for about 11% of the variance in marital status and that wives' support behavior at Time 1 accounted for about 15% of the variance in marital status 10 years later. Husbands' Time 1 problem-solving variables significantly predicted marital status at Time 10, $\chi^2_{\text{block}} = 14.9$, $p < .01$, and Nagelkerke $R^2 = .13$, indicating that husbands' problem-solving behavior at Time 1 accounted for about 13% of the variance in marital status. Wives' Time 1 problem-solving behavior did not significantly predict marital status, $\chi^2_{\text{block}} = 7.5$, $p = .11$.

Associations between Time 3 behavior and marital status. Hierarchical logistic regression analyses were again used to test, separately, whether Time 3 support behavior or Time 3 problem-solving behavior were associated with marital status at Time 10, after controlling for Time 3 marital satisfaction ($N = 150$; $df = 4$). Time 3 support behavior did not significantly predict marital status at Time 10 for husbands, $\chi^2_{\text{block}} = 8.4$, $p = .08$, or for wives, $\chi^2_{\text{block}} = 1.2$, $p = .89$.³ Time 3 problem-solving behavior, in contrast, did significantly predict marital status at Time 10 for husbands, $\chi^2_{\text{block}} = 10.1$, $p < .05$, Nagelkerke $R^2 = .18$, and for wives, $\chi^2_{\text{block}} = 15.2$, $p < .01$, Nagelkerke $R^2 = .22$, indicating that husbands' problem-solving

behavior at Time 3 accounted for about 18% of the variance and that wives' problem-solving behavior accounted for about 22% of the variance in marital status over the first 10 years of marriage.

Associations between Time 1 support behavior and marital status after controlling for residualized change in negative problem-solving behavior. A final set of hierarchical logistic regression analyses was used to determine whether the associations between Time 1 support variables and marital status would be reduced after controlling for residualized change in negative problem-solving behaviors. For these analyses, Time 1 marital satisfaction was entered in the first block, the residualized change in negative problem-solving behaviors were entered together in the second block, and the Time 1 support behaviors were entered together in the third block ($N = 150$; $df = 9$). For husbands, the association between Time 1 support variables and marital status become nonsignificant after controlling for residualized change in conflict, $\chi^2_{\text{block}} = 5.9$, $p = .21$. For wives, the association between Time 1 support variables and marital status was reduced from $\chi^2_{\text{block}} = 16.4$, $p < .01$, to $\chi^2_{\text{block}} = 10.5$, $p < .05$. Sobel tests

³ The absence of reliable associations between Time 3 social support behavior and dissolution rates through Year 10 prompted us to examine these same behavior codes in relation to trajectories of marital satisfaction; because Time 1 conflict codes did not predict changes in support codes from Time 1 to Time 3, Time 3 support was not examined previously in relation to satisfaction trajectories. These new analyses showed that husbands' positive and negative behaviors in the support soliciting role and their negative behaviors in the support provision role predicted their levels of satisfaction in the expected directions. For wives, only negative helper behaviors predicted satisfaction levels, again in the expected direction. Time 3 support codes did not predict satisfaction slopes for husbands or wives. Thus, although there is some evidence that the set of Time 3 support codes does not predict relationship dissolution, they did predict levels of relationship satisfaction. One possible explanation for this pattern of results is that 18% of the couples who went on to divorce did not provide Time 3 support data, thereby weakening our ability to detect this effect.

Table 6
Effect Sizes Relating Residualized Change in Conflict Behavior to Husbands' and Wives' Satisfaction Levels and Change in Satisfaction

Variable	Satisfaction level		Change in satisfaction	
	Positive effects	Negative effects	Positive effects	Negative effects
Husbands' satisfaction levels				
Husband behavior				
Husband topic	.15	-.17*	-.01	.02
Wife topic	.15	-.25**	-.06	.08
Wife behavior				
Husband topic	.24**	-.10	-.09	.05
Wife topic	.11	-.19*	-.14	-.07
Wives' satisfaction levels				
Husband behavior				
Husband topic	.11	-.23**	.00	.06
Wife topic	.06	-.30**	-.09	.13
Wife behavior				
Husband topic	.21**	.13	.00	.06
Wife topic	.04	.27**	-.04	-.19*

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

indicated that the mediation was significant ($z = 19.2, p < .01$ for husbands; $z = 16.5, p < .01$ for wives). These findings indicate that the effect of Time 1 support behavior on marital status is mediated by residualized change in negative problem-solving behavior for husbands and partially mediated by residualized change in negative problem-solving behavior for wives.

Discussion

The current study builds on previous research and theory to clarify the relationship among conflict behavior, support behavior, and changes in marital satisfaction and marital status over the first 10 years of marriage. Conflict and support behaviors were observed and coded for husbands and wives shortly after marriage and 1 year later, from discussions of marital difficulties and personal challenges identified separately by husbands and wives. The intimacy process model (Reis & Patrick, 1996; Reis & Shaver, 1988), which emphasizes responses to disclosures that lead spouses to feel understood, validated, and cared for, and a model based on social learning theory, which emphasizes behaviors that spouses engage in when dealing with marital problems, were juxtaposed by analyzing the changes in the effect sizes when predicting 10-year satisfaction trajectories and the changes in chi-square when predicting marital status from one behavioral domain (support or conflict) after controlling for the other. Consistent with the intimacy process model, behaviors displayed by newlywed partners in the social support task predicted declines in the affective quality of relationship problem solving, lower levels of marital satisfaction, and a higher likelihood of being divorced. Problem-solving behaviors observed 1 year later mediated many of the associations between initial social support behaviors and both types of marital outcomes. Initial problem-solving behaviors predicted levels of satisfaction for husbands and wives and marital status for husbands, but were unrelated to changes in social support

behaviors. This suggests that how spouses respond to one another's everyday disclosures and requests for support may be more consequential than how they negotiate their differences of opinion in producing behavioral changes that foreshadow later marital satisfaction and stability. Of these two important interpersonal domains, social support alone is demonstrated to predict long-term marital satisfaction and marital status directly and indirectly by affecting spouses' behavior in the other domain. Before discussing these findings, we first note some key limitations of the present study.

Limitations

First, the behaviors examined in this study were sampled in a laboratory setting and are unlikely to represent couples' typical discussions in natural settings. For example, spouses solicited support after instructions to discuss an aspect of themselves that they wanted to change. Given evidence that spouses vary in their willingness to seek support about personal challenges (e.g., Sullivan, Pasch, Bejanyan, & Hanson, in press), this procedure may limit the external validity of the present findings. Second, previous research suggests that the effect of support on satisfaction is complex and may vary based on daily mood (Shrout, Herman, & Bolger, 2006), support visibility (Bolger, Zuckerman, & Kessler, 2000), support provided for positive or negative events (Gable, Impett, Reis, & Asher, 2004), and attachment style (e.g., Campbell, Simpson, Boldrey, & Cashy, 2005). More complex models that take into account individual difference variables, mood, and event valence may need to be examined in future research. Third, the participants, though ethnically diverse, were at relatively low risk for adverse outcomes. This may be attributable to the fact that recruitment through marriage licenses yields relatively low-risk samples (as compared with media solicitations; Karney et al., 1995), and it may limit the generalizability of our findings. Fourth, this study has a correlational design and is thus subject to all the limitations of nonexperimental research.

Key Findings and Conclusions

Keeping these factors in mind, the following conclusions can be drawn from these data. First, consistent with Cutrona's (1996) analysis, social support appears to be a distinct behavioral domain that predicts marital satisfaction levels and marital status over time. Second, behaviors displayed in the social support task appear to be more stable over the 1st year of marriage than those displayed when spouses are asked to address a source of tension within the relationship. Although couples tend to be more negative and less positive 1 year into the marriage when dealing with problems, their behavior in supportive interactions does not change much on average. Thus, it seems that newlywed couples sustain support skills at least through the 1st year of marriage, but the negative emotions they display when dealing with a marital problem tend to increase within this 1st year.

These differences in stability between the two behavioral domains may be explained by the third major finding, that support behavior at the beginning of marriage predicts marital problem-solving behavior 1 year later. Specifically, positive and negative support behaviors predict negative problem-solving behavior within and between spouses for husbands and wives. In contrast,

Table 7
The Effect of Time 1 Support Behavior on Satisfaction Level After Controlling for Residualized Change in Conflict Behavior

Support	Effect of Time 1 support on satisfaction level	Effect of Time 1 support after controlling for residualized change in conflict		Change in effect size	
		Controlling for H neg conflict	Controlling for W neg conflict	Controlling for H neg conflict	Controlling for W neg conflict
Husband satisfaction level					
Support provision					
Husband negative	-.16*	-.07	-.12	-.09*	-.04
Husband positive	.28**	.19*	.23**	-.09*	-.05*
Wife negative	-.18*	-.13	-.14	-.05*	-.04
Wife positive	.28**	.19*	.10	-.09*	-.18**
Support solicitation					
Husband negative	-.23**	-.19*	-.21*	-.04	-.02
Husband positive	.15	.00	.00	-.15**	-.15**
Wife negative	-.19*	-.11	-.15	-.08*	-.04
Wife positive	.16*	.08	.19*	-.08*	.03
Wife satisfaction level					
Support provision					
Husband negative	-.28**	-.19**	-.21**	-.09*	-.07*
Husband positive	.29**	.24**	.23**	-.05*	-.06*
Wife negative	-.35**	-.28**	-.36**	-.07*	.01
Wife positive	.29**	.24**	.29**	-.05*	.00
Support solicitation					
Husband negative	-.25**	-.18*	-.17*	-.07*	-.08*
Husband positive	.21*	.10	.10	-.11**	-.11**
Wife negative	-.44**	-.39**	-.27**	-.05*	-.17**
Wife positive	.36**	.30**	.23**	-.06*	-.13**

Note. Entries show effect size r values. Data are from 149 husbands and 149 wives, degree of freedom = 147. H = husband-selected topic; W = wife-selected topic; neg = negative.

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

neither negative nor positive support behaviors predict positive problem-solving behavior within or between spouses for husbands or for wives. Difficulties in asking for and providing support shortly after marriage appear to set the stage for more deleterious conflict discussions by increasing negativity during conflict rather than by decreasing positivity. Strong support skills, however, may generate feelings of goodwill and genuine intimacy between partners, allowing them to confront relationship difficulties with fewer displays of anger and contempt. In contrast, the emotions that newlywed spouses display during problem-solving discussions do not predict changes in support behavior over the ensuing year. The severity of the problems discussed and/or the frequency of negative affect at the beginning of marriage may be insufficient to bring about changes in support skills, or problem-solving behavior may simply have less of an impact on spouses' subsequent behavior as compared with support behaviors.

A fourth key finding is that residualized change in negative behavior over the 1st year of marriage predicts subsequent marital satisfaction levels and subsequent marital status, and the association between initial support behavior and marital outcomes is significantly lower after controlling for these later problem-solving behaviors. Thus, it appears that couples who begin marriage with poorer support skills are less happy and more likely to divorce over the first 10 years of marriage due, at least in part, to increases in negative behavior during conflicts over time. Conversely, the apparent protective function of strong initial support skills helps couples to act less negatively when discussing their differences

and thus experience higher levels of satisfaction and lower chances of dissolution.

This finding, along with the finding that support behaviors are more stable than conflict behaviors over the 1st year of marriage, has important implications for theories of relationship change. Spouses are arguably the most important source of social support for many people (e.g., Coyne & DeLongis, 1986), and individuals who create a warm, supportive relationship with their partner may be more accepting of relationship problems and, in turn, experience more satisfying and enduring relationships. Lower rates of negativity when discussing marital problems and the subsequent positive effect on marital satisfaction and marital status appear to be affected by spouses' skills as support providers and by spouses' skills in soliciting support from their partners during the 1st year of marriage. Thus not only is it important for spouses to respond positively to personal disclosures made by their partners, with warmth, understanding and compassion but it is also important for spouses desiring support from their partners to present their problems or issues in a positive manner, with sensitivity, openness and trust. Conversely, spouses who are less skillful at providing and asking for support experience lower levels of satisfaction during the first 10 years of marriage and a greater likelihood of divorce, in part because they become increasingly angry and contemptuous when dealing with marital problems.

Before further exploring the theoretical and clinical implications of these findings, it is important to note that none of the behaviors studied here predict change in marital satisfaction over the time

period examined in this study. This finding is surprising and seems to contradict at least some of the findings reported in previous longitudinal studies with growth curve analysis (e.g., Kurdek, 2005). Contradictory findings across studies may be a function of the amount of time couples are followed, as the current study includes longer follow-up data than any previous study with a similar design and methodology. Though newlyweds' observed behaviors predict change over the first 4 years of marriage (e.g., Karney & Bradbury, 1997), change trajectories might begin to stabilize from that point forward, thus restricting the ability of those behaviors to predict rates of change in satisfaction. Between-couples variability in satisfaction levels remain important, however, as large literatures link these differences to such outcomes as depression, relationship dissolution, and child functioning.

Theoretical and Practical Implications

Models based on social learning theory that emphasize how couples contend with problems in their relationships have been the main focus of research on marital processes and have been highly influential in the field. Most prevention approaches and therapeutic interventions have relied heavily on the assumption that difficulties with problem solving are the root cause of relationship distress. Little is known about why couples vary in their capacity for problem solving, however, and evidence that newlyweds' negative problem-solving behaviors are difficult to change directly through educational interventions (Laurenceau, Stanley, Olmos-Gallo, Baucom, & Markman, 2004) highlights the value of considering alternative interpersonal domains that might predict conflict management. The present findings corroborate the importance of problem solving as a predictor of the future course of marriage, but they make the more important point that the affective quality of problem solving may deteriorate as a function of deficits in social support processes. We echo others' observations that couples' regulation of positive and negative emotion during problem solving is pivotal for the well-being of their relationship. The present data allow us to expand this view by noting that couples' abilities to do so might be governed in part by their prior experiences in managing personal vulnerabilities and disclosures. Thus, we find no evidence to rule out the importance of problem solving in predicting relationship outcomes—indeed, prediction of dissolution from conflict codes seemed to grow stronger as we shifted from initial to 1-year observations. The finding that problem solving itself may be a product of earlier experiences with intimate disclosure and supportive exchanges, however, helps to rule in the intimacy process model as the more parsimonious explanation for how marriages change. The current findings support a shift toward theory and educational interventions that emphasize partners' mutual feelings of validation, understanding, and compassion and are consistent with the reported effectiveness of therapeutic approaches that emphasize emotional acceptance (e.g., Christensen et al., 2004; S. M. Johnson, 2004).

Evidence that observed support provision and receipt predict 1-year change in problem solving and relationship outcomes raises important questions about how these processes might operate on a daily basis. Diary studies indicate that higher reported levels of spousal support predict lower levels of next-day negative affect (DeLongis, Capreol, Holtzman, O'Brien, & Campbell, 2004) and that partners' positive feelings about support in their relationship

over the preceding 2 weeks predicts more effective communication during laboratory conflict discussions (Campbell, Simpson, Boldry, & Kashy, 2005). Taken together with the direct observation of support afforded by the present study, this suggests that effective social support promotes better mood regulation for individuals and a greater capacity for partners to collaborate rather than conflict when discussing differences of opinion. Diary studies are likely to be particularly valuable for clarifying static and traitlike factors that predict between-couples variability in the quality of support processes (e.g., experiences in the family of origin) and for identifying the fluctuating experiences in couples' lives (e.g., chronic and acute stressors resulting from work and family demands) that are most likely to disrupt partners' abilities to maintain a warm and supportive climate in their relationship.

In considering why conflict behavior does not appear to be as important as support behavior as an instigator of interpersonal changes in marriage, a number of possibilities emerge. For example, though effective conflict management is clearly important for predicting couples' relationship outcomes over a long span of time, conflict may be too rare or too low in intensity to bring about shorter term changes in social support, particularly among newlyweds. Only when conflict becomes more intense, as in the case of verbal and physical aggression, might support be compromised. Alternatively, expectations regarding intimacy and closeness might be highly salient as couples begin their marriage, and expressions of negative emotion might become more frequent as the positive affectional expressions diminish. This latter explanation seems particularly compelling when contrasted with the alternative that people enter marriage with high expectations for good conflict resolution and that improved support is merely one of the consequences of effective problem management. Indeed, 2-year drops in expressions of affection, love, and perceptions of partner responsiveness among newlyweds are well documented (Huston, Caughlin, Houts, Smith, & George, 2001) and appear to be particularly precipitous among couples who eventually experience relationship distress. The present findings underscore the importance of these changes in prosocial behaviors, demonstrate that they are observable under laboratory conditions, and suggest that links between these prosocial behaviors and relationship deterioration are mediated in part by strong negative affect.

The current findings lend support to the prevailing emphasis on conflict and problem solving in relationship education programs, yet they also argue for expanding this focus to incorporate training in disclosure and responding to disclosures. More so than relationship problem solving, mundane disclosures constitute the fabric of daily life for most couples, and the present results suggest that focusing on these small but regular exchanges could benefit couples' capacities for maintaining their relationship. Significant predictive results obtained for the behaviors of individuals seeking support draw attention to the dyadic nature of social support, suggesting further that successful interventions will focus not only on the quality of the support that partners offer but also on their abilities to convey their support needs and their reactions to the support the partner has provided. The absence of strong gender differences in this and similar observational studies (Pasch & Bradbury, 1998) indicates that men and women can fulfill these roles, though evidence that women tend to outperform men as support providers in diary studies (Neff & Karney, 2005) suggests that men may benefit in particular from learning how to deliver

support in a timely and sensitive manner. Finally, controlled experimental tests designed to bring about changes in social support or in problem-solving behavior have the potential to inform interventions and to provide much-needed experimental evidence on the relative contributions of support and problem-solving skills to relationship functioning.

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