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Objective Ratings of Relationship Skills across Multiple Domains as Predictors of Marital Satisfaction Trajectories

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Abstract

Expanding upon social-learning and vulnerability-stress-adaptation approaches to marriage, the impact of multiple dyadic behaviors on marital satisfaction trajectories was examined in 101 couples. Semi-structured interviews were administered separately to husbands and wives at 3 months of marriage. Interviewers generated objective ratings for five domains: emotional closeness/intimacy, sexual intimacy/sensuality, interspousal support, decision-making/relational control, and communication/conflict management. Marital satisfaction was assessed four times over three years. Dyadic behaviors were associated with initial levels and rates of change in satisfaction, demonstrating the unique contributions of each relational skill on marital development. For husbands, sexual intimacy was the strongest predictor of change whereas for wives, communication/conflict management was the strongest predictor of change compared to other domains. Theoretical, methodological and clinical implications are discussed.

Keywords

couples; dyadic skills; growth curve analyses; marital satisfaction

The divorce rate for first marriages in the United States has held constant at 40% over the last decade (US Census, 2002), and it is estimated that approximately 25% of couples remain married but experience severe, unremitting marital discord. Existing theoretical models of marital dysfunction (e.g., social learning or behavioral models, vulnerability-stress-adaptation models of marriage) emphasize the importance of examining a variety of dyadic behaviors in order to explicate the developmental course of marital distress. Despite these inclusive perspectives of relational tasks, our understanding of dyadic behaviors as they relate to change in marriage is limited almost exclusively to behaviors in problem-solving (i.e., conflict management) discussions. In the last decade, there has been an emerging literature on the role of spousal support behaviors as an important factor in relationship satisfaction (e.g., Cutrona, 1996; Pasch & Bradbury, 1998). However, there is surprisingly little published research examining other potentially critical dyadic behaviors, including couples' sexual relationships, emotional intimacy, and decision-making and control. In the present study, we examined multiple interactive skills that emerge at the beginning of marriages as predictors of trajectories of marital satisfaction.

Review and Critique of Conceptual Models of Relationship Behaviors

A social learning or behavioral model (e.g., Jacobson & Margolin, 1979; O'Leary & Turkewitz, 1978; Weiss, 1978) and various extensions of it (e.g., Bradbury & Fincham, 1987; Margolin, 1983) has guided much of the marital literature to date. Early social learning theorists adopted a rather broad concept of marital behaviors and their importance for marital success and failure: "Marriage produces an incredible array of mutual interdependencies that are controlled by ideological factors, the operational necessities of daily life, and the stage of the life cycle. Conceptualizing these as relationship tasks makes it possible to ask how well a given couple is accomplishing these tasks..." (Jacobson & Weiss, 1978, p. 152). Despite this perspective, most of the empirical research on marital behaviors has been focused on the skills spouses display during conflictual (i.e., problem-solving) interactions (see Bradbury & Karney, 1993; Fincham & Beach, 1999, and Weiss & Heyman, 1990, for reviews; see Levenson & Gottman, 1983 for an exception). Although informative, it is difficult to determine whether the observed behavioral effects are unique to problem-solving deficits versus other interpersonal deficits (Bradbury, Cohan, & Karney, 2000). In sum, there may be a variety of behavioral deficits that contribute to marital distress.

Bradbury and colleagues (Bradbury et al., 2000; Karney & Bradbury, 1995) proposed a modification of this behavioral premise so that problem-solving skills were replaced with the more inclusive concept of adaptive behaviors. Within this vulnerability-stress-adaptation approach to marriage, they defined adaptive behaviors as the ways in which couples negotiate differences of opinion or transitions. Specifically, spouses and couples are believed to encounter a variety of stressful or challenging events to which they must adapt or adjust, and repeated failures in adaptation lead to marital distress and dissolution. Moreover, the ways in which spouses manage their marriages are likely to be expressed across multiple types of dyadic behaviors (i.e., problem-solving, support). We agree with the need to consider supportive behaviors in addition to problem-solving behaviors when conceptualizing and empirically testing the role of dyadic behaviors in marital satisfaction. Indeed, the literature on spousal support that has been generated over the last decade or so – both in terms of conceptual models and empirical research – has yielded strong, consistent evidence for the importance of incorporating supportive behaviors into our theoretical models and intervention efforts. We now argue for similar efforts targeting other potentially important interpersonal exchanges such as sexual relations, emotional intimacy, and decision-making/control.

A second key premise of the social learning or behavioral approach to marriage is that relationship tasks or behaviors are viewed in terms of change over time and the consequences of these changes on marriage. For example, proponents of the behavioral and social-learning models have posited that the opportunities for trial-and-error learning, and the consequences of those efforts, shape dyadic behavioral patterns (e.g., Jacobson & Weiss, 1978). That is, the *patterns* of behavior over time are predictive of marital success or failure. Similarly, within the vulnerability-stress-adaptation model of marriage, spouses and couples are viewed as attempting to adapt to stressors, and their capacity for adaptation is influenced in part by individuals' enduring vulnerabilities and strengths. Poor adaptation may allow stressful events to perpetuate or worsen, whereas adequate adaptation will help to alleviate them. Importantly, it is the *repeated* failures in adaptation that are expected to predict marital distress.

We agree that dyadic behaviors should be considered as dynamic phenomena over time. However, we also argue that the interpersonal skills with which spouses enter a marriage, and the dyadic behaviors that emerge at the beginning of the marriage, might also be conceptualized as vulnerabilities. A central premise of the present study is that the quality of dyadic behaviors such as problem-solving behavior and spousal support at the onset of marriage will either place couples at risk or serve a protective function for the longitudinal course of marital satisfaction, regardless of the longitudinal courses of these behaviors and regardless of the stressors that couples encounter.

Prior Research on Relationship Behaviors and Marital Satisfaction

Our aim in the present study was to be comprehensive in our examination of dyadic behaviors that would influence the longitudinal course of marital satisfaction. As such, after an exhaustive review of the close relationships literature across multiple disciplines (e.g., social and clinical psychology, communication studies, family studies, sociology), we identified five types of dyadic behaviors as potential risk or protective factors. *Communication and conflict management* was operationalized as comprising frequency and length of arguments, verbal, psychological and physical aggression during arguments, withdrawal during arguments, emotions and behaviors before, during and after arguments, and conflict resolution strategies. In accord with Cutrona and colleagues' work (e.g., Cutrona, Russell, & Gardner, 2005), *interspousal support* was operationalized as comprising four types of support when one spouse has had a bad day, is feeling down, or has a problem: emotional support (talking and listening to each other, holding hands, hugging, letting partner know s/he understands), direct or indirect tangible support (direct support: when one's partner helps to solve the problem or make the situation better; indirect support: providing time or resources so that one's partner is better able to solve the problem him- or herself, e.g., providing childcare), informational support (giving advice, providing spouse with information, helping spouse think about a problem in a new way), and esteem support (expressing confidence in one's ability to handle things, telling spouse s/he is not at fault for a problem). Match between types of support desired and types of support provided, and whether support is offered in a positive or negative manner, were also assessed. Level of dyadic *emotional closeness and intimacy* was operationalized as comprising emotional closeness (an overall mutual sense of closeness, warmth, affection, and interdependence), quality of the marital friendship, and demonstrations of love and affection (quantity and quality of love and affection expressed in the relationship, including verbal and physical expressions of love). *Sensuality and sexuality* was operationalized as comprising the quality of the sexual relationship (frequency of sexual activity, symmetry in initiation of sexual activity, satisfaction, negative emotions, sexual difficulties, concerns) and sensuality (touching, hugging, cuddling, massage, the extent to which sensuality exists separate from sexual activity in the relationship). *Decision-making and relational control* was operationalized as comprising a/symmetry in decision-making across a variety of areas,

spouses' satisfaction with that division of responsibilities, and a couple's ability to negotiate control across a variety of areas (e.g., scheduling one's own day, controlling money).

The overwhelming majority of research in the marital field has been focused on conflictual interactions/problem-solving behaviors. Theories of marriage and of the determinants of marital outcomes (e.g., Christensen & Walczynski, 1997; Gottman, Swanson, & Murray, 1999), a great deal of the empirical research on marriage, most observational research on marriage, reviews on marital interactions (e.g., Bradbury & Karney, 1995; Weiss & Heyman, 1997), and most existing psychological interventions for marriage (e.g., Behavioral Marital Therapy; Jacobson & Holtzworth-Munroe, 1986; Prevention and Relationship Enhancement Program; Floyd, Markman, Kelly, Blumberg, & Stanley, 1995) have targeted marital conflict. Although there has been some disagreement about the effect of negative interaction behaviors on marital outcomes (Gottman & Krokoff, 1989; 1990; Heavey, Layne, & Christensen, 1993; Woody & Costanzo, 1990), a meta-analysis of 115 longitudinal studies of negative interaction demonstrated that the overall effects of negative interaction behaviors on marriage are either neutral or detrimental (Karney & Bradbury, 1995).

Within the last decade or so, there has been a tremendous increase in attention to the role of spousal support as an adaptive marital skill (e.g., Gable, Gonzaga, & Strachman, 2006; Neff & Karney, 2005; Pasch & Bradbury, 1998). Based on conceptual models (e.g., Cutrona et al., 2005) and empirical research it has been well established that spouses who report higher levels of support from their partner are more satisfied with their marriages than those reporting lower levels of support (e.g., Acitelli & Antonucci, 1994; Julien & Markman, 1991; Katz, Beach & Anderson, 1996), and that people often identify lack of spousal support as a major reason for relationship dissatisfaction and dissolution (e.g., Baxter, 1986). Social support in marriage has also been linked to depression vulnerability such that the presence of a supportive marital relationship decreases vulnerability to depression and a lack of support in marriage increases vulnerability (Brown & Harris, 1978; Jacobson, Fruzzetti, Dobson, Whisman, & Hops, 1993; Taylor & Lynch, 2004).

Other researchers have focused specifically on the link between emotional intimacy and marital satisfaction. Barnes and Sternberg (1997) found associations between trust in one's partner and emotional satisfaction with one's marriage. Laurenceau et al. (2005) found that for both husbands and wives, daily intimacy ratings were positively related to global marital satisfaction. Cordova, Gee, and Warren (2005) found similar results for wives in that husbands' difficulties with communicating emotions (which they operationalized as level of intimacy) were related to lower levels of wives' marital adjustment; however, wives' difficulties with communicating emotions did not affect husbands' marital adjustment, suggesting that there may be an important sex difference in the link between emotional intimacy and marital satisfaction.

The literature examining the association between sex and relationship satisfaction has yielded conflicting results (e.g., Henderson-King & Veroff, 1994; LoPiccolo, Heiman, Hogan, & Roberts, 1985). There is some evidence indicating that sexual satisfaction contributes to relationship satisfaction and stability (for a review, see Sprecher & Cate, 2004), that sexual dysfunction may lead to relationship dysfunction (e.g., Hartman, 1983; Hasebrauck & Fehr, 2002), and that successful sex therapy may increase relationship satisfaction (Wright, Perrault, & Mathieu, 1977). However, clinical evidence suggests that some satisfied couples have relatively distressed sexual interactions whereas other couples have distressed relationships but satisfying sex lives (e.g., Edwards & Booth, 1994; Kaplan, 1974). These inconsistencies are somewhat difficult to resolve because of methodological discrepancies (e.g., use of specific vs. general relational measures) and methodological limitations (e.g., use of self-report measures, correlational and retrospective data). Importantly, researchers have begun to call for

a theoretical framework for understanding the functional meaning of sex within romantic relationships (e.g., Birnbaum, Reis, Miklulincer, Gillath, & Opraz, 2006).

With regard to decision-making and control, the limited research that does exist suggests that these dyadic skills are associated with marital satisfaction in the expected directions. Despite the methodological discrepancies and measurement limitations across studies (see Gray-Little & Burks, 1983 for a discussion of these issues), two reviews of the literature on marital power and marital satisfaction (Gray-Little & Burks, 1983; Huston, 1983) demonstrated that couples who share power generally are more satisfied than couples whose power balance is asymmetrical. This pattern has also been found in studies using observational data of marital power (Whisman & Jacobson, 1990). Relatedly, spouses in satisfied marriages report feeling less controlled (i.e., involvement in decision-making, freedom to have relationships with family and friends, freedom to plan activities independently, and sense of competence and self-respect) than spouses in distressed marriages (Ehrensaft, Langhinrichsen-Rohling, Heyman, O'Leary, & Lawrence, 1999).

We know of at least one study in which multiple dyadic behaviors were examined as predictors of marital satisfaction among newlyweds. Schramm, Marshall, Harris, and Lee (2005) examined multiple dyadic behaviors including emotional intimacy (which they referred to as problem areas and/or protective factors) in a cross-sectional study of 1010 newlywed husbands and wives. The domain they labeled Stability – which as operationalized included respect, commitment, trust, communication, and mutual affection as well as other components -- significantly predicted husbands' and wives' concurrent marital satisfaction. Sexual relations and sexual satisfaction -- which was labeled Affection -- predicted husbands' but not wives' marital satisfaction. Other domains, including decision-making and conflict behavior, were not predictive. In addition to the large sample size, this study was one of the first to attempt to examine multiple dyadic behaviors at the beginning of marriage as predictors of marital satisfaction and as such represents an important contribution to this literature. However, there are many ways in which this work can be built upon in future research. For example, the use of self-report questionnaires to assess relational behaviors, the problem of shared method variance, and the use of a cross-sectional design suggest ways in which this research can be improved. More importantly, the authors chose to collapse across different domains (e.g., combining trust, communication, and respect into one domain), which makes it difficult to determine exactly which dyadic skills are contributing to the developmental course of marital distress.

In sum, the existing literature suggests that a variety of relational skills contribute to the longitudinal course of marital satisfaction. However, when dyadic behaviors are examined, researchers typically examine only one or two domains of marital behavior per sample as predictors of marital dysfunction, which presumably grossly underestimates the complexity of relationship maintenance and deterioration. Moreover, many of these studies did not statistically examine sex differences in the links between relational behaviors and marital satisfaction, which may lead to an incomplete, skewed, or inaccurate conceptualization of marriage and, consequently, to interventions that are limited in their effectiveness. This literature has also suffered from methodological limitations, including measurement issues such as the use of self-report measures of relational behaviors which may be influenced by social desirability and cognitive dissonance (particularly among newlyweds), shared method variance, retrospective data, heterogeneous samples and cross-sectional designs. The purpose of the present study was to begin to overcome these limitations and provide a more comprehensive understanding of the dyadic skills that might predict marital decline during the high risk period of marriage (Cherlin, 1992).

Overview of the Present Study

In the present study, we examined the interactive behaviors that emerge at the beginning of relationships as predictors of trajectories of marital satisfaction. We also used objective interviewer ratings of couple functioning on each domain based on semi-structured, behaviorally anchored, individual interviews with husbands and wives to control for the possibility that self-reports of relationship functioning would not be influenced by factors such as marital satisfaction, depression or social desirability. The use of objective ratings also allowed us to control for the possibility that couples married only 3–6 months might experience cognitive dissonance when discussing potential weaknesses or problems in their relationships, which might influence their self-reports of the quality of their dyadic behaviors or skills.

To test the hypotheses in the present study, growth curve modeling techniques were used. Marital satisfaction trajectories were generated from four waves of data collected over the first three years of marriage. Initial levels of satisfaction (intercepts) and rates of change in satisfaction (slopes) were analyzed for husbands and wives. The first goal of the present study was to examine relationship skills or behaviors as unique predictors of concurrent marital satisfaction. We expected relationship skills to be significantly and uniquely associated with husbands' and wives' marital satisfaction at the beginning of marriage. The second and more important goal of this study was to examine the extent to which the quality of couples' dyadic skills uniquely predicted rates of change in satisfaction over time. In accord with prior research, we predicted that the quality of couples' communication and conflict skills and spousal support skills would uniquely predict rates of change in marital satisfaction for husbands and wives. The limited prior research regarding the other dyadic behaviors – emotional closeness and intimacy, sexual intimacy, and decision-making and control -- did not allow us to make strong hypotheses. We tentatively predicted that the unique links between these additional dyadic behaviors and rates of change in marital satisfaction would be significant and in the expected directions as well. Consistent with the social learning and vulnerability-stress-adaptation models of marital dysfunction and with the majority of the existing literature, we did not predict any sex differences among the links between dyadic behaviors and marital satisfaction.

Method

Participants

Participants were recruited through the use of marriage license records from suburban communities and small towns in the Midwest. Newlywed couples in which both spouses were between the ages of 18 and 55 years of age were mailed letters explaining the study and inviting them to participate. Interested couples were screened over the telephone to ensure they met the following eligibility requirements: ability to speak and read in English, married less than six months, and being in their first marriages. More than 350 couples contacted the laboratory, and the first 105 couples who met criteria were included. Of the 105 couples who participated in the first wave of data collection, one couple's data were deleted because it was later revealed that it was not the wife's first marriage. A second couple's data were deleted because they decided not to continue participation in the study. Data from two couples were not included due to missing objective ratings in several domains. Thus, data from 101 couples were included in the present study.

Couples dated an average of 48 months ($SD = 27.79$) prior to marriage and 77% of them cohabited. Average estimated annual joint income of couples was between \$30,001– \$40,000. Husbands' average age was 25.91 ($SD = 3.09$) and their modal years of education were 14 years. Wives' average age was 24.5 ($SD = 3.46$) and their modal years of education were also 14 years. For 15% of the couples, at least one member of the couple identified him or herself as a member of an ethnic minority group. (The proportion of non-Caucasian individuals in the

state in which the research was conducted is 7%; US Census, 2002.) Demographics did not significantly correlate with the key variables in this study.

Procedure

At Time 1 ($M = 3$ months of marriage), participating couples completed questionnaires at home including the Marital Adjustment Test (MAT; Locke & Wallace, 1959). Couples then came into the laboratory to complete more questionnaires, were individually administered the Relationship Domains Interview (RDI; Lawrence et al., 2007), and participated in other procedures beyond the scope of the present study. Couples were paid \$100 for participation at Time 1. At Times 2–4 (9–12 months, 21–24 months, and 30–33 months of marriage, respectively), couples completed questionnaires at home including the MAT. For all questionnaires completed at home, couples were instructed to complete the questionnaires independently and to return them in the individual, stamped, sealed envelopes provided. Couples were paid \$50 at each time point for Times 2–4.

Measures

Demographics—Participants reported their age, race, education level, annual joint income, whether they cohabited prior to marriage and the length of their relationship prior to marriage.

The Marital Adjustment Test (MAT; Locke & Wallace, 1959) is a widely used 15-item self-report measure assessing marital adjustment. MAT scores have a test-retest reliability of .75 over a 3-week interval (MacEwen & Barling, 1988), a split-half reliability of .90 (Locke & Wallace, 1959). The MAT discriminates between nondistressed spouses and spouses with documented marital problems (Locke & Wallace, 1959). Scores on the MAT range from 2 to 158, with higher scores reflecting higher levels of marital adjustment.

Relationship Domains Inventory (RDI; Lawrence et al., 2007). The RDI is a 60-minute semi-structured interview designed to guide functional analyses of couple relationships across a variety of important interactional domains, and to yield objective ratings of the quality of couples' functioning for each dyadic skill or behavior. Partners are administered the interview individually in a session they attend together to assure that one member of the dyad does not discuss the interview with the other prior to a session. Open ended questions -- followed by a series of closed ended questions -- are asked to allow novel contextual information to be obtained. Answers are coded into nominal or ordinal categories; responses also guide decisions about which subsequent questions are asked. Thus, the interview is branch-structured to facilitate conditional questions.

After obtaining information on relationship history, participants are asked to describe aspects of five relationship domains over the past six months; during the spouse's description of each relationship domain, the interviewers probe using detailed behavioral indicators and exemplars of each area to establish veridicality of report (see Prescott et al., 2000). The five domains are: (a) emotional closeness and intimacy, (b) spousal support, (c) sensuality and quality of the sexual relationship, (d) decision-making and relational control, and (e) communication and conflict management.

Broad domains and specific items originally were selected following a multidisciplinary review of the close relationships literature. Following the compilation of a pool of potential domain-specific items, a team of six psychology pre-doctoral and doctoral students specializing in couple relationships sorted the pool into the domain categories. Items were deleted if there was less than 80% agreement among raters on their dimension classification. To get at the domain of *Emotional Closeness and Intimacy*, items were included that aimed to measure a couple's ability to create a mutual sense of emotional closeness and intimacy in their marriage. Sample

items include “How close do you feel to your spouse?” and “Are there any specific personal (i.e., non-marital) topics that either of you avoid talking about with the other?” Items in the *Spousal Support* section of the interview measured the level of support provided in the relationship, the type of support (emotional, tangible, etc.), whether the support is given in a variety of situations, and the mutuality of the support in the couple. Sample items include “Does your spouse try to support you by spending a lot of time talking with you when you have a problem?” and “Can your spouse tell when you are feeling down or need support, even if you don’t say anything?” In the section on the domain of *Sensuality and Quality of the Sexual Relationship*, items were included that asked about the frequency of sexual and sensual behaviors, the spouse’s satisfaction, negative emotions, and difficulties in this area. Examples of items include “How satisfied are you with your sexual relationship?” and “Do you engage in sensual behaviors together, such as touching, cuddling, hugging or massage?” Items in the *Decision-Making and Relational Control* domain ask about dyadic decision-making across a variety of topics, and the balance of control in the relationship. Sample items include “Does one of you tend to make most of the decisions in your relationship?” and “How is money managed in your relationship?” Items included to assess the domain of *Communication and Conflict Management* ask about negative affect in the relationship, verbal, psychological, and physical aggression, and conflict resolution strategies. Sample items include “Do you feel comfortable expressing your own opinions during a discussion with your spouse?” and “Do either of you ever threaten to leave the relationship during an argument?”

Interviewers independently rated the relationship on each domain using five-point scales. Ratings may range from 1–5 and scores of .5 (e.g., 3.5) are permissible. For example, in the domain of *Spousal Support*, a rating of 1 indicates that the spouses “blame, challenge, give advice when not requested; neither partner gives much/any support, or amount of support is extremely skewed in favor of one partner over the other.” A rating of 3 is assigned if “some support is provided, but skewed in favor of one partner over the other or provided in only certain situations. Variety of support is limited.” A rating of 5 indicates “a high level and quality of support from both partners; large variety of types of support spanning a variety of situations.” Interviewers made objective ratings to eliminate the possibility that associations between poor functioning in a key domain and other factors (e.g., marital distress) were due to reporting biases. All interviews were audio-taped, and inter-rater reliability was assessed using a random sample of 20% of the interviews. Coders were considered to be in agreement if two independent raters were within .5 on the 5-point scale. Inter-rater reliability correlations were all above .7. The RDI demonstrates strong internal consistency, strong convergent, divergent and criterion validity, and adequate incremental predictive validity (Lawrence et al., 2007). In particular, between-domain correlations were examined based on item-level analyses. Bivariate correlations ranged from .35 to .49 for husbands and wives, lending support to our contention that these domains represent separate, albeit generally related constructs. (See Lawrence et al., 2007 for further details on the reliability and validity of the RDI in a newlywed sample.)

Data Analyses

All analyses were conducted with growth curve analytic techniques (GCA; Raudenbush & Bryk, 2001) and the HLM 6 computer program (Raudenbush, Bryk, & Congdon, 2004). GCM allows for a two-stage process in data analysis. The first stage (Level 1) estimates a trajectory of change (growth curve) for a variable that is described by two parameters: intercept (initial level of the variable) and slope (rate of change over time). GCM provides tests of whether, on average, intercepts and slopes differ significantly from zero, and whether there is variability in parameter estimates across spouses. Effects on each parameter of the trajectory are estimated through simultaneous equations. As such, effects on one parameter are estimated controlling for effects on other parameters. As recommended by Raudenbush, Brennan, and Barnett (1995), we analyzed husbands’ and wives’ data within the same equations (as opposed to

nesting spouses within couples). Time was estimated in days since the couple's wedding. Linear trajectories for marital satisfaction were estimated from the four longitudinal data points in the present study. The linear model was specified by the following equation: $Y_{ij} = \beta_{0j} + \beta_{1j}(Time) + r_{ij}$ where Y_{ij} is the outcome variable for individual j at Time i ; β_{0j} is the intercept of individual j at Year 0 (i.e., the initial level of the outcome variable); β_{1j} is the rate of change in the outcome for individual j over time (i.e., slope); and r_{ij} is the residual variance in repeated measures for individual j . In GCM, the coefficients can be understood as functionally similar to unstandardized regression coefficients, and they represent the degree of association between two variables. Each parameter includes a constant and a unique error term such that $\beta_{0j} = \gamma_{00} + \mu_{0j}$ and $\beta_{1j} = \gamma_{10} + \mu_{1j}$. Each Level 1 coefficient is modeled as a function of the grand mean (i.e., γ_{00}) and error (i.e., μ_{0j}). Coefficients were modeled as random; that is, a random error parameter was estimated for the coefficient.

The second stage of HLM (Level 2) allows for the examination of between-subject differences in associations between time-invariant covariates and outcomes; that is, specific couple characteristics can be examined as predictors of the intercepts and slopes. As noted above, predictor variables were entered simultaneously into all of the Level 2 equations (predicting husbands' intercepts, wives' intercepts, husbands' slopes, and wives' slopes). The five predictors were entered simultaneously to control for collinearity across domains. At Level 2, Level 1 coefficients were modeled as a function of time-invariant covariates – quality of relationship behaviors across domains -- using the following equations:

- $\beta_{0j} = \gamma_{00} + \gamma_{01}(Emotional\ intimacy) + \gamma_{02}(Support) + \gamma_{03}(Sex) + \gamma_{04}(Decision - making) + \gamma_{05}(Conflict) + \mu_{0j}$.
- $\beta_{1j} = \gamma_{10} + \gamma_{11}(Emotional\ intimacy) + \gamma_{12}(Support) + \gamma_{13}(Sex) + \gamma_{14}(Decision - making) + \gamma_{15}(Conflict) + \mu_{1j}$.

Results

Preliminary and Descriptive Analyses

Skewness and kurtosis were within normal limits for all variables and no outliers were detected. Bivariate correlations among the objective ratings for the five dyadic behaviors and initial marital satisfaction scores were examined. Correlations between ratings of dyadic behaviors (RDI ratings) and concurrent marital satisfaction were low for husbands and wives (r s ranged from .08 to .36), indicating that the relationship behaviors measured with the RDI were distinct from cross-sectional measures of marital satisfaction. That is, dyadic behaviors as measured via the RDI did not simply represent indicators of an underlying latent variable of initial marital satisfaction. Cross-spouse correlations on RDI ratings were generally moderate in magnitude (r s ranged from .27 to .58), suggesting that husbands and wives were providing somewhat different (but related) information and perspectives on their relationship functioning. Even though ratings were objective and generated based on behavioral indicators of relationship functioning, spouses may be giving at least somewhat different behavioral indicators, which then guide those objective ratings. However, the magnitude of the majority of the interspousal associations suggested the potential utility of aggregating across RDI ratings based on husbands' and wives' interviews to create a more reliable rating for each domain. Finally, husbands' and wives' marital satisfaction scores at Time 1 were moderately correlated ($r = .45$), which is consistent with prior research using the MAT (e.g., Karney & Bradbury, 1997).

Table 1 contains mean objective RDI ratings based on husbands' and wives' interviews, and mean levels of marital satisfaction for husbands and wives across the four waves of data. As the t -tests revealed, ratings based on husbands' and wives' individual interviews were not significantly different (t s (100) ranged from -1.32 to -0.51 , all n s), supporting our decision to aggregate across the two interviewer ratings to yield one objective rating for each couple on each relationship behavior. Thus, RDI scores were averaged across the two objective ratings for each domain (see the fifth column of Table 1). Marital satisfaction scores appeared to

demonstrate linear decline over time for husbands and wives, and husbands' and wives' MAT scores did not significantly differ from each other at any of the time points.

Preliminary Growth Curve Analyses

We examined the slope of each spouse's marital satisfaction over four years and the mean of the within-subject satisfaction scores for each spouse: $Y_{ij}(\text{Satisfaction}) = \beta_{0j} + \beta_{1j}(\text{Time}) + r_{ij}$. The baseline model was estimated successfully, providing reliable estimates of all of the model parameters. The reliability coefficients of the intercepts were .71 for husbands and .72 for wives, and coefficients of the slopes were .44 for husbands and .39 for wives. The t -tests indicated that husbands' and wives' slopes significantly differed from zero and were negative, demonstrating that, on average, marital satisfaction declined over time (husbands: $t = -3.73$, $p < .001$; wives: $t = -3.88$, $p < .001$). Husbands' and wives' coefficients were not significantly different regarding initial levels of marital satisfaction ($X^2(1) = .01$, ns) or rates of change in satisfaction over time ($X^2(1) = .35$, ns). There was significant variance in all parameters (i.e., in intercepts and slopes for both husbands and wives; X^2 s ranged from 10.98 to 36.64; all $ps < .05$). In sum, all of the parameter estimates for marital satisfaction were estimated with adequate reliability and there was significant between-spouse variability in initial levels and rates of change in satisfaction. Thus, examination of variables that moderate initial levels and rates of change in husbands' and wives' marital satisfaction was warranted.

Initial Dyadic Behaviors as Predictors of Marital Satisfaction Trajectories

To evaluate unique associations between the quality of dyadic behaviors at the time of marriage and trajectories of marital satisfaction, husbands' and wives' Time 1 RDI scores were entered into the Level 2 (between-couple) equations accounting for variance in each of the parameters specified at Level 1 (within-couple). Results of all growth curve analyses are presented in Table 2. For each of the five domains, dyadic behaviors uniquely and significantly predicted initial marital satisfaction for husbands and wives such that higher levels of dyadic functioning were associated with higher levels of initial marital satisfaction even after controlling for the baseline model, interdependence, and the effects of the other predictors on satisfaction (t -values ranged from 1.84 to 5.05; all $ps < .05$). Predictors of husbands' and wives' intercepts did not differ significantly from each other in the areas of emotional closeness, interspousal support, or quality of the sexual relationship (X^2 s ranged from .004 to 1.79, all ns). Decision-making and relational control was a significantly stronger predictor of husbands' initial satisfaction compared to wives' initial satisfaction ($X^2(1) = 5.62$, $p = .017$), and communication/conflict management was a significantly stronger predictor of husbands' initial satisfaction compared to wives' initial satisfaction ($X^2(1) = 4.89$, $p = .025$).

With regard to predictors of satisfaction slopes, a series of interesting patterns emerged. First, dyadic behaviors for three of the five domains – sexual relationship, decision-making/control, and communication/conflict management -- each uniquely and significantly predicted rates of change in husbands' marital satisfaction such that poorer dyadic skills at the beginning of marriage were associated with steeper declines in husbands' marital satisfaction above and beyond time, interdependence, and the effects of the other predictors on satisfaction (ts ranged from 1.67 to 3.08, $ps < .05$). However, the sexual relationship was a significantly stronger predictor of husbands' satisfaction slopes compared to all other domains (X^2 s ranged from 3.19 to 10.82, $ps < .05$). Second, communication/conflict management uniquely and significantly predicted wives' satisfaction slopes such that poorer communication/conflict management skills at marriage were associated with steeper declines in wives' marital satisfaction ($t(100) = 1.23$, $p < .05$). Moreover, communication/conflict management was a significantly stronger predictor of wives' satisfaction slopes compared to all other domains (X^2 s all > 2.00 , $ps < .05$). Third, quality of the sexual relationship at marriage was a significantly stronger predictor of husbands' satisfaction slopes compared to wives' satisfaction slopes ($X^2(1) = 12.24$, $p < .001$).

Discussion

The purpose of the present study was to examine the extent to which couples' skillfulness across multiple dyadic behaviors when they first enter their marriages uniquely predicts the longitudinal courses of their marital satisfaction over the early, high risk period of marriage (Cherlin, 1992). Semi-structured individual interviews were administered separately to husbands and wives at 3–6 months of marriage and interviewers generated objective ratings of the quality of couples' dyadic behaviors or skills across five domains: emotional closeness and intimacy, spousal support, the sexual relationship and sensuality, decision-making and relational control, and communication and conflict management. Objective ratings were used to predict trajectories of marital satisfaction for husbands and wives based on four waves of data collected over the first three years of marriage.

Summary and Interpretation of Results

For each of the five domains, interactional skills at the time of marriage uniquely predicted initial marital satisfaction for husbands and wives such that higher levels of dyadic functioning were associated with higher levels of initial marital satisfaction. When predicting rates of change in marital satisfaction, an interesting pattern of sex differences emerged. Relational functioning for three of the five domains (sex, decision-making and control, and communication/conflict management) uniquely predicted rates of change in husbands' marital satisfaction, and quality of the sexual relationship was a significantly stronger predictor compared to the other domains. For wives, only communication and conflict management uniquely predicted changes in marital satisfaction, and conflict management was a significantly stronger predictor compared to the other domains. The fact that not all relationship skills predicted rates of change in marital satisfaction lends support to our assertion that we are tapping into distinct (albeit related) dyadic behaviors, and adds to previously reported data on the reliability and validity of the Relationship Domains Inventory. Further, the significant sex differences that emerged demonstrate the importance of gathering data from both partners and the possibility that different relational behaviors serve different functions for husbands and wives.

The finding that dyadic communication/conflict management skills at marriage was a particularly strong predictor for wives' trajectories of marital satisfaction is consistent with the strong and replicated finding in the marital literature linking conflict behaviors and marital distress (for reviews see Bradbury & Karney, 1995; Weiss & Heyman, 1997). Our finding that this link was significantly stronger for wives' satisfaction slopes compared to husbands' satisfaction slopes is also consistent with prior literature (e.g., Karney & Bradbury, 1997). The results of the present study support the importance of this longstanding line of research by demonstrating that conflict behavior remains a significantly strong predictor *even after* controlling for other dyadic behaviors such as support, emotional intimacy, and decision-making.

Why would sex be a significantly stronger predictor of husbands' satisfaction slopes compared to other predictors and compared to sex as a predictor of wives' slopes? One possible explanation can be found by examining these sex differences from evolutionary (e.g., Buss, 1998; Buss & Schmitt, 1993) and/or socialization perspectives (e.g., DeLamater, 1987; Reiss, 1981), in which men and women are viewed as experiencing sexual activity differently. Birnbaum et al. (2006) summarized these perspectives in the following way:

Women tend to adopt a more emotional-interpersonal orientation to sexuality, emphasizing interpersonal factors related to sexual intercourse, whereas men tend to adopt a more recreational orientation toward sexuality, emphasizing the expression and fulfillment of sexual needs. Empirical studies have shown that, compared with

men, women are more concerned with their romantic relationships during sexual intercourse and tend to experience intercourse as a reflection of relationship quality.... Consequently, during sexual interactions, women are likely to be relatively more attuned to affect-related cues implying their partner's intentions and willingness to invest resources (e.g., expressions of love)... On the other hand, men have been shown to be relatively more motivated by physical release and to emphasize satisfaction derived from the sexual act itself..." (p. 930).

Given that the sexuality and sensuality section of the interview was designed to capture features of sexual relations themselves rather than affect-related cues or emotional components of sexual activity, this explanation seems consistent with our finding that sexuality as operationalized in the present study was a significantly stronger predictor of marital satisfaction for men than for women.

Strengths, Limitations and Implications of the Present Study

Several factors strengthen our confidence in the results of the present study. First, the current study was embedded within a larger theoretical framework. The purpose of this study was to contribute to research testing the social-learning and vulnerability-stress-adaptation approaches to understanding marital dysfunction. Second, objective ratings of relational behaviors were generated rather than relying on self- or partner reports, which may be tainted by social desirability, cognitive dissonance (particularly among couples married only 3–6 months), or concurrent depression or marital satisfaction, for example. Third, multiple behaviors were considered in the present study, including several behaviors that have received relatively little attention in the literature to date. We also analyzed these behaviors simultaneously to allow us to examine and compare the relative influences of specific dyadic behaviors. Fourth, multiple (four) waves of data were analyzed. Fifth, the impact of dyadic behaviors on marital satisfaction was examined longitudinally (over three years). Sixth, hypotheses were analyzed using growth curve analytic techniques, a sophisticated statistical approach that allows for the examination of multiple parameters of the outcome variable. Seventh, the use of a newlywed sample allowed us to examine the quality of dyadic behaviors couples develop before those processes are influenced by factors such as stress or marital distress. The use of a newlywed sample was also a strength given that couples whose marriages will end in divorce were not excluded from the sample, thus increasing the generalizability of the findings.

Interpretation of the present findings must also be qualified by several factors. First, the sample size was relatively small. Analyses of the present hypotheses with a larger sample are needed to overcome this limitation. Second, the emphasis placed on the internal rigor in this study (e.g., all heterosexual married couples) is offset by constraints on the generalizability of the findings. Third, the non-experimental nature of this study precludes strong causal inferences.

The present study demonstrates the need to return to the broader conceptual frameworks initially proposed by social learning theorists so as to include a consideration of other important domains of marital functioning, particularly sensuality and sexuality for husbands and communication and conflict management for wives. We also call for more basic research targeting marital interactions in addition to the ongoing work on marital conflict and support. In the present study, we have contributed to this move by examining three additional domains – emotional closeness and intimacy, sensuality and sexuality, and decision-making and relational control. Moreover, future studies should incorporate quality of initial skills (as was done in the present study) with changes in those interactive behaviors over time as predictors of marital satisfaction.

In accord with our call and the call of others (e.g., Karney & Bradbury, 1995) for marital research to be routinely embedded in established theoretical frameworks, we recommend incorporating components of the behavioral and social-learning models of marriage with the vulnerability-stress-adaptation (VSA) model of marriage. Historically, in the VSA model of marriage (e.g., Bradbury et al., 2000), vulnerabilities are conceptualized as individual differences (e.g., personality traits, attachment styles) whereas dyadic behaviors such as those examined in the present study are conceptualized as (mal)adaptive responses by the dyad to stress. Additionally, the vulnerabilities that spouses bring to a marriage are expected to influence a couple's ability to adapt to stressors. Based on the results of the present study, we recommend conceptualizing the dyadic skills or behaviors that couples have at the beginning of the marriage as vulnerabilities in and of themselves. That is, if a couple enters the marriage with poor problem-solving skills (e.g., due to poor family of origin models as would be hypothesized within a social learning model), those skill deficits will place the couple at risk for longitudinal marital distress. Conceptualizing skill deficits as risk factors – particularly in the area of problem-solving skills – is certainly not novel. Indeed, basic marital research and couple interventions (e.g., Behavioral Marital Therapy; Jacobson & Margolin, 1979; Prevention and Relationship Enhancement Program; Floyd et al., 1995) have long been guided by similar notions drawn from behavior theory. However, behavior theorists and interventions grounded in behavior theory have focused almost exclusively on the direct links between skill deficits and marital distress. We argue that such skill deficits at the beginning of a marriage should also be conceptualized as vulnerabilities within a VSA model. Specifically, skill deficits at the beginning of a marriage may or may not lead to longitudinal marital distress depending on the stressors or transitions that a couple encounters, and a couple's ability to manage or cope with those stressors when they do arise. We also believe that a couple's skills when marital satisfaction is high (e.g., at the beginning of the marriage) will be strongly related to a couple's ability to adapt to stressors or transitions (e.g., the transition to parenthood) when they arise, as both phenomena represent dyadic skills. Thus, future researchers should examine trajectories of these dyadic behaviors over the early, high risk period of marriage with a particular emphasis on how initial behaviors predict the longitudinal course of these behaviors when moderated by stressful events or life transitions.

Finally, in accord with our view that the quality of couples' interactions across a variety of domains at the onset of marriage serve as vulnerabilities (or protective factors) for the developmental course of marital satisfaction, the findings from the present study have implications for psychological intervention programs. First, the present study demonstrates the importance of empirically-derived prevention programs targeting the dyadic behaviors that predict marital distress. Second, we call for changes in the components that are typically incorporated into those prevention programs. The Prevention and Relationship Enhancement Program (PREP; Floyd et al., 1995) is the most thoroughly researched prevention program targeting marital distress; published treatment outcome studies for PREP span up to 20 years. Although PREP has evolved over time, its primary focus is still on teaching couples conflict management skills. Similarly, Guerney and colleagues (Guerney, 1977; Guerney, Brock, & Coufal, 1986) developed the Relationship Enhancement program (RE). Again, the focus is primarily on conflict resolution, although their approach is less structured and more affectively focused compared to PREP. Moreover, RE does not formally extend the practice of these skills into other domains of dyadic interactions. Within the last few years, there has been a growing trend to expand the scope of marital interventions beyond conflict resolution skills. For example, the Compassionate and Accepting Relationships through Empathy program (CARE; Rogge, Cobb, Johnson, Lawrence, & Bradbury, 2002) is based on the view that effective conflict resolution skills alone do not ensure satisfying relationships and that positive interchanges might even be more important than conflict management skills.

In sum, we call for the development of (or return to) theoretical models and intervention efforts targeting marital distress based on published data such as those presented in the current study. Such programs should be derived from a conceptualization that multiple dyadic skills must be targeted to not only prevent marital distress but also promote the establishment and maintenance of satisfying, fulfilling marriages. Finally, we call for an emphasis on prevention efforts based on the concept that spousal skills and emerging couple interactions at the onset of marriage set the stage – either as vulnerabilities or buffers -- for the longitudinal course of marital satisfaction.

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Table 1
Descriptive Statistics for Predictor and Outcome Variables for Husbands and Wives

	Husbands	Wives		
	Mean (SD)	Mean (SD)	<i>t</i> (100)	Average RDI Scores
Relational Domains Inventory (RDI): scores may range from 1–5				
Emotional Closeness/Intimacy	4.13 (.53)	4.2 (.39)	–1.06	4.17
Interspousal Support	3.99 (.47)	3.98 (.50)	–.78	3.99
Sexuality and Sensuality	3.92 (.65)	3.87 (.64)	.79	3.90
Decision-Making/Control	3.97 (.55)	4.01 (.47)	–.51	3.99
Communication/Conflict Management	3.73 (.74)	3.82 (.66)	–1.32	3.78
Marital Satisfaction (MAT): scores may range from 2–158				
Time 1 (3–6 mos.)	122.45 (20.87)	124.37 (18.22)	–.89	----
Time 2 (12–15 mos.)	117.87 (20.99)	119.41 (22.92)	–.64	----
Time 3 (21–24 mos.)	116.05 (23.65)	117.74 (22.18)	–.80	----
Time 4 (30–33 mos.)	113.75 (24.29)	114.86 (26.13)	–.38	----

N = 101 couples. Two-tailed *t*-tests.

Table 2
 Domain-Specific Relational Skills as Unique Predictors of Trajectories of Marital Satisfaction

	Husbands			Wives		
	Coefficient (SE)	t (100)	Effect size <i>r</i>	Coefficient (SE)	t (100)	Effect size <i>r</i>
			Intercepts			
Emotional Closeness/Intimacy	20.08 (4.48)	4.48****	.41	14.29 (4.85)	2.94**	.28
Interspousal Support	14.01 (6.08)	2.31*	.23	13.58 (5.47)	2.48*	.24
Sexuality and Sensuality	12.08 (3.77)	3.20****	.30	7.70 (4.19)	1.84*	.18
Decision-Making/Control ^a	19.88 (4.47)	4.45****	.41	10.23 (4.84)	2.11*	.21
Communication/Conflict Mgmt ^a	15.38 (3.05)	5.05****	.45	7.20 (3.37)	2.14*	.21
			Slopes			
Emotional Closeness/Intimacy	.01 (.01)	1.50	.15	.003 (.01)	.40	.04
Interspousal Support	-.01 (.01)	.51	.05	.002 (.01)	.21	.02
Sexuality and Sensuality ^a	.02 (.01)	3.08****	.29	.001 (.01)	.11	.01
Decision-Making/Control	-.01 (.01)	1.67*	.16	.001 (.01)	.10	.01
Communication/Conflict Mgmt.	.01 (.01)	1.94*	.19	.01 (.004)	1.23*	.12

N = 101 couples;

* = *p* < .05;

*** = *p* < .005;

**** = *p* < .001; two-tailed tests. Effect size $r = \sqrt{t^2/(t^2 + df)}$. Sex was a significantly stronger predictor of husbands' slopes compared to all other domains. Communication/conflict management was significantly stronger predictor of wives' slopes compared to all other domains.

^aThese domains were significantly stronger predictors of husbands' outcomes than of wives' outcomes.