

**Ending the Silo Effect: A Test of the Relational Domain Spillover Model**

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### Abstract

Couple interventions are limited in their effectiveness for reducing marital distress and dissolution. One explanation for this may be the narrow focus on conflict management and a limited understanding of how other domains in marriage influence one another over time. We present the first test of the *relational domain spillover model* (RDSM) to understand the extent to which poor functioning in either positive or negative areas of the relationship spill over into other aspects of relationship functioning across time. Husbands and wives reported annually on the quality of five relationship domains (emotional intimacy, sex, support, power/control, and conflict) over the first seven years of marriage. Longitudinal dyadic multilevel modeling techniques were used to examine how domains change over time and how earlier declines in positive areas of couple functioning predict later problems in negative areas of couple functioning and vice versa. We found support for both directions of the RDSM model. Earlier declines in sexuality and support predicted later declines in conflict and, for wives, earlier declines in couple sexuality were linked to later control issues. Earlier declines in conflict communication and control predicted later problems with emotional intimacy. For men, longitudinal associations between sexuality and conflict, and control, were bidirectional. These findings point to the need to move toward a multi-dimensional, dynamic conceptualization of relationship functioning across time and the importance of focusing on different relational domains as targets for couple interventions.

**Keywords:** conflict, control, intimacy, sex, support, marriage

Decades of research on the longitudinal course of romantic relationships has shown that marriages are likely to become less satisfying over time (Karney & Bradbury, 1995) and are at greater risk for dissolution today than they were 50 years ago (Greenwood & Guner, 2004). Prevention programs, such as the Prevention and Relationship Enhancement Program, have been developed to prevent the deterioration of marriage based on the assumption that marital conflict and problem-solving communication are the primary causes of relationship dysfunction and that addressing these aspects of relationship functioning is key to improving the course of marriage (Lavner et al., 2016). Although some prevention and intervention programs based on these assumptions have been shown to be effective in reducing marital distress (Markman et al., 1993), changes in conflict and problem-solving communication only account for a small proportion of the variance in predicting longitudinal marital outcomes (Hawkins et al., 2012). This suggests that there are other important factors that contribute to the well-being of relationships. In order to improve upon current prevention and intervention programs, we assert the need to move beyond focusing on conflict and expand our framework to include other aspects of relationship functioning. Additionally, to design better interventions, we must move beyond global relationship satisfaction as a primary outcome and, instead, seek to understand how changes in certain domains of relationship influence other aspects of couple functioning across time. The purpose of the present study was to begin to clarify the longitudinal interrelationships between different aspects of couple functioning to inform the design of multi-dimensional couple interventions. In the service of this goal, we examined five domains of relationship functioning over time and examined the extent to which these domains reciprocally predict changes in one another. More specifically, we focus on the bidirectional associations between positive domains, areas of relationship functioning that are inherently rewarding and desirable in love relationships

(e.g., emotional intimacy and trust, sexual functioning, and partner support), and negative domains, areas of relationship functioning that are less rewarding and more likely to be damaging to the relationship (e.g., conflict management and power/control). This study represents an initial test of a new model of relationship functioning, the Relationship Domain Spillover Model (RDSM), in which changes in one domain of relationship functioning may spill over into couple functioning in other relationship domains over time.

### **Development of the RDSM**

We developed the Quality of Relationship Domains Framework (QRDF; authors' citation), in which we conceptualized five domains of couple functioning (i.e., emotional trust and intimacy, couple sexuality, partner support, power and control, and conflict management) as multidimensional, dyadic, dynamic processes that are related yet distinct facets of the higher-order construct of couple relationship quality. We then began thinking about how these domains co-exist and interact with each other in a romantic relationship. Simultaneously, we were using the stress spillover model to study support transactions within the QRDF and concluded that a key limitation of the stress spillover model was that spillover among interpersonal factors were not also considered. We developed the RDSM to (a) adapt the stress spillover model to include a more comprehensive conceptualization of interpersonal functioning; (2) account for research showing that interpersonal functioning is more amenable to change than enduring vulnerabilities and stressors; and (3) account for more relationship factors in stress spillover than what was most common in the literature at the time (conflict interactions, attributions, and discord). We include more detailed information about the development of the QRDF and our selection of relationship domains for the RDSM in the supplemental materials section. This paper represents the first test of the RDSM. Below, we describe these domains in greater detail (i.e., emotional trust and

intimacy, couple sexuality, partner support, power and control, and conflict management) and outline the associations between them.

### **Positive and Negative Domains of Relationship Functioning**

We conceptualize some domains of relationship functioning as more positive because they are inherently rewarding in relationships (e.g., emotional intimacy, sex, and support). That is, these domains of relationship functioning are operationalized such that the presence of facets of these domains (the presence of affection, the presence of sex, the presence of support) enhance the relationship whereas the absence of those facets is associated with relationship distress. In contrast, we conceptualized other domains as negative because the presence of those facets of those domains (the presence of aggression, the presence of interpartner control) are destructive to the relationship.

Positive qualities of romantic relationships are key to what makes them satisfying and worthwhile. Longitudinal research has demonstrated that the positive qualities in relationships tend to be strong in earlier relationship stages and deteriorate over time. This suggests that bolstering the positive qualities of relationships, including emotional intimacy, couple sexuality, and partner support, are important in maintaining a healthy relationship. At the same time, more negative relationship qualities, including destructive conflict communication and controlling behaviors can be highly damaging and are often considered a strong determinant of relationship dissatisfaction. High conflict and negative communication patterns were cited as one of the top contributing factors to couples' decision to seek couples therapy or divorce (Doss et al., 2004; Scott et al., 2013). What is less clear is how positive domains such as sexuality, trust, and support impact more negative domains such as conflict or control, and in turn how negative domains like conflict spillover to influence more positive areas of functioning. In order to

understand the processes through which relationships decline over time, we must understand how different elements of couple functioning predict cumulative changes in each other across time. Before we examine these associations, we provide a brief review of positive domains (emotional intimacy and trust, sexuality, and partner support) and negative domains (conflict management and power/control issues), as well as the current knowledge base on how they are connected.

### ***Positive Couple Functioning***

**Emotional trust and intimacy.** Emotional trust and intimacy refer to a couple's ability to feel and express emotional closeness, confide and be vulnerable with each other, and show warmth, love, and affection (Laurenceau et al., 2005). Emotional intimacy is linked to relationship trust and feeling psychologically connected to and secure or safe with a partner (Barnes & Sternberg, 1997). Emotional self-disclosures are a core part of emotional intimacy – indeed, greater levels of daily emotional self-disclosure in couples were linked to higher levels of couple intimacy over time (Laurenceau et al., 2005). Emotional safety, the ability to be vulnerable with a partner, and emotional intimacy are both important predictors of marital satisfaction (Greeff & Malherbe, 2001).

**Couple sexuality.** Healthy couple sexual functioning comprises a wide range of factors, including mutual desire, communication, a focus on pleasure, and a mutual commitment to sexual health (Metz & McCarthy, 2007). Research questions in this area have mostly been limited to examining the frequency of intercourse, sexual satisfaction, orgasm, sexual dysfunction, and associations between sexual and marital satisfaction. Indeed, there is consistent evidence demonstrating a bidirectional link between sexual satisfaction and marital satisfaction (e.g., McNulty et al., 2016), such that higher levels of marital satisfaction at one assessment

predicted positive changes in sexual satisfaction at the next assessment and vice versa. The frequency of intercourse is also associated with better well-being and relationship quality (Brody, 2010). Unfortunately, the frequency of sex is known to decline over time in couples, with the steepest drop occurring during the early years of marriage (Call et al., 1995). We contend that the quality of sexual functioning as a construct in couple relationships comprises not only the frequency of sexual activity, orgasm, and satisfaction, but also levels of sexual desire and arousal, balance in initiation of sexual activity, sensual activity like massage, communication about sexuality, and working through sexual difficulties.

**Partner support.** Social support refers to the ways that close others respond in a caring manner and provide resources during times of distress or challenge. There has been a dramatic increase in the number of studies and attention paid to the role of partner support in marriage (e.g., Gable et al., 2006; Neff & Karney, 2005). Support can be provided in many forms (emotional, tangible, informational and esteem support), with positive, neutral, or negative valences. Support providing may also be balanced or more one-sided in a dyad (Ryon & Gleason, 2018). The quality of support transactions is based on how a partner asks for support, the quality and quantity of support provided, how that support is received and perceived (the adequacy of that support), and the extent to which the support is recognized and acknowledged by the recipient (see Brock & Lawrence, 2008). Couples who report more satisfaction with the support received from their partners are more satisfied with their marriages overall (Lawrence et al., 2008). Additionally, receiving an appropriate amount of social support from a partner is also key to relationship health, as support overprovision and underprovision are linked to lower levels of marital satisfaction and more negative feelings about one's relationship (Bar-Kalifa & Rafaeli, 2013). Partner support is key to healthy relationship functioning (Dehle et al., 2001) and, in fact,

becomes a stronger predictor of relationship satisfaction over time (Logan & Cobb, 2013).

### *Negative Couple Functioning*

**Power and control.** The construct of power and control (referred to as “control” in this manuscript) refers to the couple’s ability to “share power.” It includes whether partners view each other as equals and respect one another’s autonomy. It encompasses their ability to divide responsibilities, make decisions, and negotiate finances, schedules, and time with family or friends (*authors’ citations*). A lack of respect and acceptance for the partner, or contempt, has also been linked to adverse marital outcomes (Gottman et al., 1998). Spouses who feel less controlled by their partners experience less marital distress (Ehrensaft et al., 1999). Interestingly, marital power or the extent to which one partner has more control than the other is not associated with marital satisfaction (Sarantakos, 2000); however, for husbands, a power imbalance can increase the likelihood of future internalizing symptoms (depression and anxiety; Brock & Lawrence, 2011).

**Conflict management.** Conflict management comprises the frequency, length and intensity of couples’ arguments; dysfunctional dyadic patterns of negative behavior such as escalation and demand-withdraw patterns; the presence and nature of verbal, psychological, and physical aggression during conflict; and conflict recovery behaviors (Booth et al., 2016). There is a wealth of research documenting the relation between conflict behaviors (as well as skills and affect) and marital satisfaction (e.g., Greeff & Bruyne, 2000). Destructive behaviors engaged in during conflict are associated with lower levels of marital satisfaction longitudinally (Rosen-Grandon et al., 2004). Johnson et al. (2005) found that couples’ positive and negative affect during conflict interacted to predict marital satisfaction trajectories, such that more negative affect and less positive affect predicted greater declines in marital satisfaction over time. A

couple's ability to have constructive conversations during conflict can also impact their reports of efficacy in the relationship, such that conflict management skills may be able to aid in feeling more equipped to handle relationship problems ahead (Johnson & Anderson, 2015).

### ***Links among Domains of Couple Functioning***

These different aspects of couple functioning are also interrelated, both conceptually and empirically. Emotional intimacy is associated with higher levels of sexual desire and satisfaction (Štulhofer et al., 2013) and higher odds of sexual activity (Van Lankveld et al., 2018). Emotional intimacy is also linked to conflict processes, such that lower levels of emotional intimacy were associated with a stronger presence of a dysfunctional conflict communication pattern (Laurenceau et al., 2005). Related to these constructs, couples' sexual satisfaction is negatively correlated with couple conflict (Haning et al., 2007). Social support is also predictive of other aspects of couple functioning, such that more positive support behaviors were predictive of better conflict communication assessed at a later timepoint (Sullivan et al., 2010). Additionally, relationship intimacy is positively associated with receipt of support (Gleason et al., 2008) and more satisfaction with support (Johnson et al., 1993). Control issues in couples also are linked to sexual functioning – couples with more equitable and desirable power dynamics reported more sexual desire (Brezsnyak & Whisman, 2004).

These findings provide key insights into how different aspects of couple functioning may affect one another, but the longitudinal relations among these domains are less understood. Additionally, these multiple domains of couple functioning are often examined in isolation and not considered collectively in the same study. A greater understanding of how changes in these positive areas of couple functioning come to predict later changes in a more negative domain of couple functioning, or vice versa, will provide key information about early intervention targets

for couples who may otherwise exhibit more prominent declines in relationship functioning.

### **Relational Domain Spillover Model: A Conceptual Framework**

In conceptualizing how domains of couple functioning come to influence one another across time, we reason that problems in one domain of relationship functioning may later spill over into other areas of the relationship to contribute to its more global deterioration. These processes are analogous to models of how work strain impacts relationships, in which stress from the work environment (e.g., stress due to a high workload, demanding supervisor, or unhappy customer) spills over into relationships to contribute to relationship distress (Bakker & Demerouti, 2013; Bakker et al., 2008; Buck & Neff, 2012). Stress spillover effects on marriage are well-documented, including, for example, how work-related stress is associated with more displays of negative marital behavior (Repetti, 1989). In the same way that external stressors such as job stress spill over into relationships, poor functioning in one area of marital life can influence the quality of another marital domain. We proposed this relational spillover domain model (RDSM) previously (*authors' citation*), and sought to conduct an initial test of this model in the present study.

To demonstrate the RDSM, we consider various routes through which different domains of couple functioning come to influence each other. In this specific project, we focus the analyses on how more negative domains of relationship functioning (such as conflict management or power and control) influence more positive domains of relationship functioning (such as emotional intimacy and trust, couple sexuality, and partner support) and vice versa (see Figure 1). For instance, a couple who experiences significant and problematic conflict early in the relationship may begin disengaging from each other as a strategy to avoid conflict, which may culminate in a lack of emotional intimacy or support over time. Couples who engage in

controlling behaviors earlier in the relationship may over time feel less connected to their partners as a result of not feeling like they have an equal voice in the relationship. These scenarios exemplify how poor functioning in negative domains of relationships, like conflict, may eventually lead to poorer functioning in a more positive domain, like support. The opposite pattern, in which deterioration in positive areas of couple functioning come to predict later changes in negative domains, is also probable. A couple who has difficulties maintaining emotional intimacy may have more and more difficulty over time working together to resolve conflicts. Similarly, a couple's lack of emotional and sexual intimacy may lead to escalating demands for attention and intimacy that contribute to the development of control behaviors. Additionally, couples who are dissatisfied with the support a partner offers may over time become more critical and resentful of the partner, which spills over into the domain of conflict behavior. Thus, declines in positive areas of couple functioning may also initiate a series of problems that lead to later declines in more negative domains. We examine both pathways in the current study.

### **The Current Study**

The purpose of the present study was to conduct an initial test of the RDSM by examining how positive domains of couple functioning (emotional intimacy and trust, sexuality, and partner support) spill over into couple functioning in negative domains (conflict and control), as well as how poor functioning in negative areas of marriage spill over into positive areas of couple functioning (see Figure 1). Toward this goal we analyzed data from couples who reported on each of these five domains of relationship functioning five times over the course of the first seven years of marriage. In a series of multilevel models, we tested two aims. Our first aim was to assess how domain-specific system-level functioning develops and changes over time during

the early, high-risk, formative years of marriage. The second aim was to perform the first direct test of the RDSM and to clarify how functioning in one domain impacts subsequent functioning in another. We were particularly interested in understanding whether the spillover phenomenon was specific to some domains and not others or if some paths were bidirectional. To address this aim, we evaluated how changes in more positive domains might predict changes in negative domains the following year, and how changes in the negative domains of couple functioning might predict changes in positive domains the following year.

## **Method**

### **Participants and Procedures**

Marriage license records from the Midwest were collected to recruit participants. Newlywed couples were mailed letters inviting them to participate in the study. Couples interested in participating were screened over the telephone. Newlyweds were eligible to participate if they were between the ages of 18 and 55, married for less than six months, in their first marriage, and could read and write in English. From the 350 couples who expressed interest in the study, the first 105 couples who were eligible were enrolled. Of the 105 newlyweds who participated in the first wave of data collection, one couple's data were deleted because it became apparent that it was not the wife's first marriage, and one couple's data were removed when his responses at Time 1 were deemed unreliable. Thus, the final sample size comprised 103 couples.

At the first assessment, husbands' average age was 26.37 ( $SD = 4.71$ ), and wives' average age was 25.08 ( $SD = 4.71$ ). About 90% of our husbands and wives stated that they attended some college. The average joint income was \$30,001-\$40,000. Approximately 79% of the couples lived together before marriage and the average length of the relationship before marriage was almost 4 years ( $M = 46.23$  months;  $SD = 27.60$  months). More than 80% of our

sample identified as catholic, protestant, or non-denominational Christian, and approximately 92% of husbands and wives identified as White non-Hispanic. More than 80% of husbands and wives were employed and approximately one-third of husbands and wives were in school at least part-time.

All procedures were approved by the University's Institutional Review Board. After eligibility was confirmed through a telephone screening process, couples who had been married less than six months were scheduled for a three-hour laboratory session (Time 1). After reviewing and signing Informed Consent Documents, spouses completed the Relationship Quality Interview (RQI; *authors' citation*), which assesses five key domains of couple functioning predictive of prospective marital dysfunction. Participants made ratings of the quality of functioning on each domain after discussing each domain in detail with the interviewer. Interviewers went through the entire interview in detail with each couple to clarify how to complete the participant ratings. Couples also completed a variety of measures and procedures beyond the scope of the present study. At each subsequent wave of data collection (Times 2-5), couples completed similar questionnaires, including the participant version of the RQI, which they completed at home. Spouses were instructed to "complete the questionnaires independently and seal their completed packets in the separate envelopes provided." Couples completed the participant version of the RQI five times across seven years: at 3-6 months of marriage (Time 1), 18-21 months (Time 2), 33-36 months (Time 3), 61-64 months (Time 4), and 76-79 months (Time 5). Data was collected approximately every 15 months, including an assessment during months 48-51 in which the RQI was not included as part of the assessment and is therefore not included in this study. Couples were paid \$100 for Time 1 and \$50 for each assessment thereafter.

## Measures

**Relationship Quality Interview (RQI; authors' citations).** The RQI is a 60-minute semi-structured interview yielding ratings of the quality of couples' relationships. Partners are interviewed individually in separate rooms by different interviewers. After obtaining information on relationship history, participants are asked to describe the quality of their relationship across five dimensions over the past 6 months. RQI domains include (a) emotional trust, closeness and intimacy ("Emotional Intimacy"); (b) inter-partner support transactions ("Support"); (c) quality of the sexual relationship ("Sex"); (d) issues of power and control in the relationship ("Control"); and (e) quality of problem-solving/conflict interactions ("Conflict"). Open-ended questions, followed by a series of closed-ended questions, are asked to allow novel contextual information to be obtained. During the spouse's description of each dimension of relationship quality, interviewers probe using detailed behavioral indicators and exemplars of each area (see Prescott et al., 2000). The interview is branch-structured to facilitate conditional questions, and answers are coded into ordinal categories. The RQI has been validated in dating and married couples and demonstrates strong reliability, convergent validity, and divergent validity. (See authors' citations for the development of interview items and psychometric properties.) Spouses rated the quality of their couple functioning along each domain, taking into consideration all facets of that construct. Ratings may range from 1 ("extremely poor functioning" to 9 ("very high functioning"). Exact questions and anchors for each domain can be found in Appendix A.

## Data Analyses

Data were analyzed using multilevel modeling techniques using the HLM 6 computer program (Raudenbush et al., 2004). As recommended by Raudenbush and colleagues (1995), we used a double-intercept (2-level) model, which estimates repeated measures within person and

accounts for the interdependence at the couple level by simultaneously modeling separate effects for each gender. Time was measured continuously across the first seven years of marriage; time was calculated as days since the wedding and divided by 30 (to estimate months) for each couple.

As recommended by Kenny and colleagues (2006), a series of strategies were implemented to address the interdependence inherent in our dyadic data. First, all four paths (two actor and two partner paths) were included in all analyses. Second, correlations between husbands' and wives' data were estimated in all analyses. This task was accomplished by including both husbands' and wives' predictors in all equations. Third, error terms (residuals) for husbands and wives were included in all equations. The fourth strategy was the estimation of residual terms as would be indexed by significant chi-square test results of Level 1 variance for each baseline model. Due to limited power, the error terms were not estimated as outcome variables, though husbands' and wives' error terms were included as predictors in all equations.

We also accounted for initial levels of domain functioning as well as rates of change over time for husbands and wives (unless otherwise noted). To understand which positive domain (i.e., emotional intimacy, sexuality, or support) was the strongest predictor of a negative domain, we entered all positive domains simultaneously in the same model as competing predictors. We followed the same procedure to understand which negative domains (i.e., conflict and control) predicted each positive domain. We statistically compared husband and wife paths and the paths of competing negative or positive domains (e.g., conflict vs. control) to assess whether they were statistically significant from one another.

At Level 1 we compared t-tests, chi-square tests of variance, and deviance statistics for intercept-only and linear models to determine the model that best fit the data for each domain.

Intercept-only models, estimated using the equation,  $Y_{ij}(\text{Outcome}) = \beta_{1j}(\text{Husband Intercept}) + \beta_{2j}(\text{Wife Intercept}) + r_{ij}$ , indicate that participant scores vary around their own individual means over time. Linear models, estimated using the equation,  $Y_{ij}(\text{Domain}) = \beta_{1j}(\text{Husband Intercept}) + \beta_{2j}(\text{Wife Intercept}) + \beta_{3j}(\text{Husband Time}) + \beta_{4j}(\text{Wife Time}) + r_{ij}$ , indicate that the data for the sample as a whole demonstrates average systematic change (a linear increase or decrease) over time. In these equations,  $Y_{ij}$  represents couple functioning for a given outcome domain (i.e., conflict) for individuals;  $\beta_{1j}$  and  $\beta_{2j}$  represent intercepts of husbands and wives, respectively (i.e., initial level of conflict);  $\beta_{3j}$  and  $\beta_{4j}$  represent average linear slopes of husbands and wives, respectively (i.e., change in conflict over time); and  $r_{ij}$  represents residual variance. Random error parameters ( $\epsilon$ ) were estimated for each coefficient. Scores of initial levels of couple functioning on each domain were included as Level 2 predictors (e.g.,  $\beta_{1j} = \gamma_{10} + \gamma_{11} + \mu_{1j}$ ).

To investigate how the quality of couple functioning in the negative domains (conflict and control) predicted subsequent dyadic functioning in the positive domains (emotional intimacy, support, and sexuality) at the subsequent assessment (1 year later), we ran three different models: conflict and control for both partners predicting time-lagged emotional intimacy (Model 1), support (Model 2) and sexuality (Model 3). To examine how the positive domains predicted each of the negative domains at the subsequent assessment we ran two different models: emotional intimacy, support and sexuality for both partners predicting time-lagged conflict (Model 4) and control (Model 5). We included cross-spouse paths as well as linear time for husbands and wives if the addition of time was a better fit for our data.

## Results

Mean scores for all domains started off relatively high for both husbands and wives, ranging from 7.11 to 8.23 (with *SDs* of 1.00 to 1.89) at the first assessment. At the final

assessment (approximately 6 years later) means for all domains decreased ranging from 5.61 to 7.23 (*SDs* of 1.54 to 2.29). Paired samples *t*-tests were conducted to evaluate sex differences. All *t*-tests were significant ( $t_s = .27 - .66, p_s < .05$ ) supporting our decision to analyze husbands' and wives' data separately yet simultaneously to account for interdependence. Within-spouse bivariate correlations across domains were weakly to moderately correlated (husbands,  $r_s = .39 - .63$ ; wives,  $r_s = .23 - .57$ ), providing additional support for our contention that these are distinct domains of functioning and can be measured as such. These correlations also suggest that we are not simply tapping into global marital sentiment, which would presumably yield higher correlations. Interspousal correlations ranged from small to moderate ( $r_s = .27 - .50$ ), again supporting our decision to analyze husbands' and wives' data separately yet simultaneously.

### **How Does the Quality of Couple Functioning Change Over Time?**

For the domains of Emotional Intimacy, Sex, and Control, the intercept-only model best fit the data. Husbands' and wives' scores varied around their own means on Emotional Intimacy (husbands:  $b = 7.88, p < .001$ ; wives:  $b = 7.96, p < .001$ ), Sex (husbands:  $b = 6.38, p < .001$ ; wives:  $b = 6.42, p < .001$ ), and Control (husbands:  $b = 7.44, p < .001$ ; wives:  $b = 7.64, p < .001$ ). There was significant between-subject variability among all parameters ( $\chi^2$  tests of variance tests ranged from 255.22 to 334.26,  $p < .001$ ). For the domains of Support and Conflict, the linear model best fit the data. Although we found no significant systematic linear decline over time for husbands and wives for Support ( $t(102) = -.89, p = .38$ ;  $t(102) = -.70, p = .39$ ) and Conflict ( $t(102) = -1.68, p = .10$ ;  $t(102) = -.90, p = .37$ ), there was significant between-subject variability for both Support ( $\chi^2 = 127.56, p < 0.01$  for husbands;  $\chi^2 = 131.56, p < 0.01$  for wives) and Conflict ( $\chi^2 = 125.85, p < 0.05$  for husbands;  $\chi^2 = 126.44, p < 0.05$  for wives) in these models.

### **Does Couple Functioning in Negative Domains Predict Later Changes in Positive Domains?**

**Conflict & Control → Emotional Intimacy** (see Table 1, Model 1). Husbands' ratings of the quality of control and conflict in their relationship significantly predicted their ratings of the quality of emotional intimacy the subsequent year. This means that when the quality of control was rated lower, husbands reported a poorer quality of emotional intimacy the following year. Wives' ratings of control in their relationship significantly predicted their ratings of the quality of emotional intimacy the subsequent year; those who reported more problems with control had later declines in wives' ratings of intimacy. Husband versus wife paths and conflict versus control paths did not statistically differ in strength, as indicated by linear hypothesis testing in HLM that used a chi-square test to compare the strength of associations.

**Conflict & Control → Sexuality** (see Table 1, Model 2): Husbands' and wives' ratings of the quality of conflict in the relationship were associated with their own ratings of sexuality at the subsequent timepoint. Lower husband ratings of the quality of conflict predicted later decreases in the quality of their sexuality relationship for both husbands and wives. Husband and wife conflict paths did not differ in their ability to predict sexuality.

**Conflict & Control → Support** (see Table 1, Model 3): Husbands' ratings of the quality of conflict management in their relationship significantly predicted their rating of support in their relationships the subsequent year; as ratings of the quality of conflict for husbands decreased, their subsequent ratings of support also decreased. Wives' ratings of the quality of conflict, as well as quality of control, were also significantly associated with their rating of couple support the following year. Wives who rated the quality of conflict or control lower exhibited later decreases in the quality of support. These paths did not statistically differ in strength, as indicated by linear hypothesis testing in HLM comparing the strength of associations.

**Does Couple Functioning in Positive Domains Predict Later Changes in Negative Domains?**

**Emotional Intimacy, Sexuality, & Support → Conflict** (Table 1, Model 4): Husbands' and wives' ratings of the quality of sexuality and support predicted subsequent quality of conflict management. Specifically, as the quality of sex and support decreased, the quality of conflict decreased later on for both partners. The strength of these paths did not differ statistically.

**Emotional Intimacy, Sexuality, & Support → Control** (Table 1, Model 5): Finally, only the quality of sexuality for husbands significantly predicted their subsequent quality of control, indicating that as the quality of sexuality decreased for husbands, ratings of couple functioning in the domain of control declined the following year.

Please see Figure 2 for a visual summary of our findings.

### **Discussion**

The present study demonstrates the dynamic interplay among different aspects of couple functioning across time. We found support for the RDSM in both directions, in which declines in positive areas of couple functioning predicted later deterioration in more negative domains of couple functioning, and vice versa. Using a multi-faceted, dyadic, and dynamic framework of couple functioning, which goes beyond global marital satisfaction, these findings provide initial promising evidence for the RDSM and identify potential areas of early intervention for couples at risk for relationship decline over time.

Our findings supported the theoretical pathway of the RDSM that poor functioning in positive domains of couple functioning predicted later problems in more negative aspects of the relationship (see Figure 2). Specifically, we found that couple dysfunction in the domains of couple sexuality and support predicted later problems with couple conflict. First, regarding couple sexuality, this adds to prior findings that show concurrent links between sexual satisfaction and conflict, in which dissatisfaction with sex is linked to higher levels of conflict

(Metz & Epstein, 2002). Our findings demonstrate that this link exists not only cross-sectionally but longitudinally as well, with declines in sexual functioning predicting later problems with conflict. Additionally, our measure of couple sexuality assesses additional aspects of sexual functioning beyond just satisfaction, suggesting that this more inclusive definition of couple sexual functioning is also linked to risk for later problems with couple conflict. Couples who may engage in little sensual touch, infrequent or dissatisfying sex, or who lack effective communication about sex, may have more difficulty with arguments over time as they lack in the exciting and/or bonding aspects of sex. Additionally, for women in particular, we found for the first time that a lack of these positive experiences related to sex were predictive of later issues with power and control, in which partners may have engaged in greater amounts of demeaning comments and attempts to restrict or control the other's behavior.

Second, our findings regarding support are in line with previous research suggesting that couples who showed more positive social support behavior had better conflict communication behaviors at a later assessment (Sullivan et al., 2010). The present study validates these findings with an additional assessment method of these constructs, which takes into account five different types of support and both conflict communication and conflict recovery. Couples who struggle with how to support each other may over time feel invalidated, ignored, criticized or pressured by their partner, which may lead to increased feelings of frustration or resentment that contribute to problems with conflict. These findings warrant further study and are key to identifying early targets to prevent marital dissatisfaction and dissolution.

This study also supports the RDSM pathway that couple functioning in negative domains can spill over to impact more positive domains (see Figure 2). We found that couples' problems in the areas of conflict or control at earlier timepoints predicted later issues with emotional

intimacy. This suggests that as couples engage in more problematic conflict, disrespectful behavior, and/or efforts to control each other, their feelings of emotional closeness and emotional safety suffer over time. Our findings suggest that a lack of closeness is not necessarily predictive of later negativity in the relationship, but instead may be an outcome of more negative functioning in the relationship. For example, as conflict or control problems escalate, couples may avoid engaging in open communication and vulnerable disclosures to avoid upsetting each other, leading to increased emotional distance across time. These findings are in line with prior research showing that conflict and emotional intimacy are linked when assessed concurrently (Du Rocher Schudlich et al., 2013), but show that this link also exists across time, in which problems with conflict predict later issues in emotional closeness. Regarding power and control, to our knowledge, this is the first study to demonstrate that problems in these domains predict later declines in emotional intimacy. Partners may come to feel resentful, disliked or pressured after an accumulation of disrespectful comments and controlling behavior, leading them to disconnect from their partners emotionally over time. These findings suggest that directly targeting emotional intimacy may be more crucial at middle and late stages of preventive interventions as problems with conflict and control become more difficult to manage.

Further supporting the pathway in which poor functioning in negative domains spills over into positive domains, we found that for husbands, the longitudinal links between sexuality and conflict, and support and conflict, were bidirectional. As husbands experienced more difficulties managing conflict with their partners at earlier time points, they reported having a poorer sexual relationship and more problems in the area of social support. It is possible that as couples struggled to discuss problems with partners in effective ways and recover from conflicts, they may, over time, anticipate that partners would be too conflictual, reactive, or avoidant to be a

good source of support. Similarly, as conflicts become more difficult to manage, the couple may become less willing to maintain a healthy sex life over time as a result of increasing frustration and resentments. These findings show more broadly that, for husbands, the cross-sectional link between the domains of sexuality or support and conflict also remains true across time. That is, promoting better couple functioning in the domains of support or sexuality may reduce risk for later problematic conflict, and also that early intervention for conflict management may reduce risk for later problems in couples' sex lives and ability to support each other.

This study has several important strengths. This study is the first to examine longitudinal associations between multiple facets of couple functioning and the dynamic interplay among these five different domains of couple functioning across time. Our study also considered separately the positive and negative domains of couple functioning in our models, rather than looking at one or two domains in isolation, and when considered together, identified which domains predicted downstream changes in couple functioning in other domains. This approach takes into account, for example, the ways that sexual and emotional intimacy are related (Yoo et al., 2014) when examined in the same model to represent positive domains of couple functioning. Moreover, the longitudinal nature of this study enables us to identify early warning signs of later relationship problems that can be targeted in couple interventions. We also used a highly reliable, valid and unique assessment of these different domains of relationship functioning (Lawrence et al., 2011), which distinguishes it from and adds to other previous studies.

Our study also has several limitations that can be addressed in future research on this topic. Although the longitudinal nature of this study allows us to estimate predictive effects, these findings remain correlational in nature and causal inferences cannot be inferred. Future

intervention studies targeting these domains will be needed to make more causal inferences about the nature of these findings. Next, our models examined the bidirectional associations between positive and negative domains, and future research would benefit from analyzing the associations within positive or negative domains (i.e., assessing how changes in emotional trust correlate with couple sexuality). Moreover, we measured domain spillover from year to year, providing a macro view of the interplay among domains across the first seven years of marriage. Different effects may be observed when using smaller assessment intervals, such as those found in daily diary studies. Another important variable that may impact the functioning of these marital domains is the relationship models that couples witnessed as children and the attachment styles they developed as a result of these earlier experiences. Future research would benefit by examining couples' attachment patterns and understanding how couples' relationship histories might impact the current functioning of these domains. Additionally, as a function of the state in which these data were gathered, our study was mainly comprised of White non-Hispanic, newlywed, middle-class, and heterosexual couples. Future research is needed to determine how these associations between domains might differ for couples with different cultural backgrounds and characteristics such as those from a lower socioeconomic status, couples from more collectivistic cultures, or couples that do not identify as heterosexual.

In sum, findings from this study provide initial support for the RDSM such that positive aspects of couple functioning at earlier stages of marriage predict downstream effects on negative domains of couple functioning and, conversely, that negative aspects of couple functioning predict later changes in positive domains of couple functioning. Knowing that important elements of relationships may decline over time – especially emotional intimacy, couple sexuality and control – these studies provide key information to help therapists consider

the influence of all of these domains and identify early intervention strategies. The complex interplay between these domains should be considered for intervention development and implementation. In addition to targeting conflict management skills, preventive interventions should also target couple sexuality, partner support and maintaining respect and equity in relationships. These findings can also be applied to improving current couple therapies by including skill building and other interventions designed to rebuild couple functioning in emotional intimacy, partner support, couple sexuality, conflict management and recovery, and power and control. Finally, given that the temporal precedence of the domains was system-specific rather than consistent across the entire sample (different domains declined first in different couples), we recommend that clinicians use a multi-dimensional, dyadic and dynamic conceptualization of couple functioning such as the RQI as an assessment tool for interventions to decide which domains should be targeted first in a given couple. In conclusion, the present study provides new insights for moving the field of couple interventions forward and recalibrating the focus of our interventions to prevent the deterioration of relationships over time.

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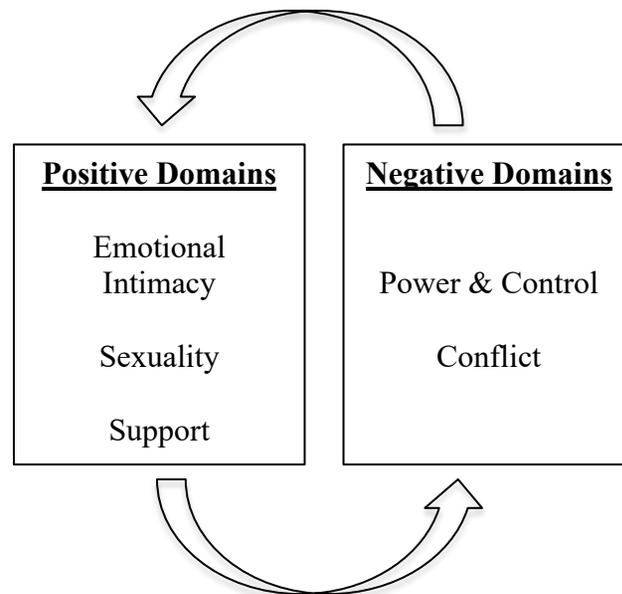
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Table 1: Fixed Effects for Positive Domains Predicting Negative Domains (Model 1-3), and Negative Domains Predicting Positive Domains (Model 4-5)

|                                                       | <b>Coeff.</b> | <b>SE</b>   | <b>t</b>       | <b>r<sub>effect</sub></b> |                                                                 | <b>Coeff.</b> | <b>SE</b>   | <b>t</b>       | <b>r<sub>effect</sub></b> |
|-------------------------------------------------------|---------------|-------------|----------------|---------------------------|-----------------------------------------------------------------|---------------|-------------|----------------|---------------------------|
| <b>Model 1: Conflict &amp; Control → TL Intimacy</b>  |               |             |                |                           | <b>Model 4: Intimacy, Sexuality &amp; Support → TL Conflict</b> |               |             |                |                           |
| <b>H Control → H Intimacy</b>                         | <b>0.16</b>   | <b>0.07</b> | <b>2.18*</b>   | <b>.22</b>                | H Intimacy → H Conflict                                         | 0.17          | 0.12        | 1.51           | .16                       |
| <b>H Conflict → H Intimacy</b>                        | <b>0.18</b>   | <b>0.07</b> | <b>2.54*</b>   | <b>.26</b>                | <b>H Sex → H Conflict</b>                                       | <b>0.13</b>   | <b>0.06</b> | <b>2.31*</b>   | <b>.24</b>                |
| <b>W Control → W Intimacy</b>                         | <b>0.22</b>   | <b>0.08</b> | <b>2.69*</b>   | <b>.28</b>                | <b>H Support → H Conflict</b>                                   | <b>0.27</b>   | <b>0.12</b> | <b>2.23*</b>   | <b>.23</b>                |
| W Conflict → W Intimacy                               | 0.10          | 0.07        | 1.56           | .16                       | W Intimacy → W Conflict                                         | 0.13          | 0.08        | 1.59           | .17                       |
| H Control → W Intimacy                                | 0.03          | 0.05        | 0.50           | .05                       | <b>W Sex → W Conflict</b>                                       | <b>0.14</b>   | <b>0.06</b> | <b>2.41*</b>   | <b>.25</b>                |
| H Conflict → W Intimacy                               | 0.11          | 0.06        | 1.77           | .19                       | <b>W Support → W Conflict</b>                                   | <b>0.22</b>   | <b>0.06</b> | <b>3.49***</b> | <b>.35</b>                |
| W Control → H Intimacy                                | 0.06          | 0.07        | 0.89           | .09                       | H Intimacy → W Conflict                                         | -0.17         | 0.10        | -1.70          | NA                        |
| W Conflict → H Intimacy                               | 0.05          | 0.06        | 0.78           | .08                       | H Sex → W Conflict                                              | -0.03         | 0.05        | -0.56          | NA                        |
| <b>Model 2: Conflict &amp; Control → TL Sexuality</b> |               |             |                |                           | <b>Model 5: Intimacy, Sexuality, and Support → TL Control</b>   |               |             |                |                           |
| H Control → H Sexuality                               | 0.01          | 0.12        | 0.09           | .00                       | H Intimacy → H Control                                          | 0.21          | 0.11        | 1.95           | .20                       |
| <b>H Conflict → H Sexuality</b>                       | <b>0.39</b>   | <b>0.10</b> | <b>3.80***</b> | <b>.38</b>                | <b>H Sex → H Control</b>                                        | <b>0.16</b>   | <b>0.05</b> | <b>3.17***</b> | <b>.32</b>                |
| W Control → W Sexuality                               | 0.05          | 0.09        | 0.54           | .06                       | H Support → H Control                                           | 0.16          | 0.09        | 1.73           | .18                       |
| W Conflict → W Sexuality                              | 0.16          | 0.09        | 1.69           | .18                       | W Intimacy → W Control                                          | 0.20          | 0.10        | 2.03           | .21                       |
| H Control → W Sexuality                               | 0.03          | 0.11        | 0.25           | .03                       | W Sex → W Control                                               | 0.04          | 0.06        | 0.62           | .07                       |
| <b>H Conflict → W Sexuality</b>                       | <b>0.30</b>   | <b>0.08</b> | <b>3.57***</b> | <b>.37</b>                | W Support → W Control                                           | 0.13          | 0.07        | 1.79           | .19                       |
| W Control → H Sexuality                               | 0.02          | 0.10        | 0.24           | .03                       | H Intimacy → W Control                                          | -0.09         | 0.12        | -0.73          | NA                        |
| W Conflict → H Sexuality                              | -0.00         | 0.10        | -0.02          | .00                       | H Sex → W Control                                               | 0.07          | 0.06        | 1.30           | NA                        |
| <b>Model 3: Conflict &amp; Control → TL Support</b>   |               |             |                |                           | H Support → W Control                                           |               |             |                |                           |
| H Control → H Support                                 | 0.10          | 0.09        | 1.08           | .12                       |                                                                 | 0.20          | 0.10        | 2.10           | NA                        |
| <b>H Conflict → H Support</b>                         | <b>0.24</b>   | <b>0.09</b> | <b>2.63*</b>   | <b>.27</b>                |                                                                 |               |             |                |                           |
| <b>W Control → W Support</b>                          | <b>0.20</b>   | <b>0.09</b> | <b>2.14*</b>   | <b>.22</b>                |                                                                 |               |             |                |                           |
| W Conflict → W Support                                | 0.15          | 0.08        | 1.81           | .19                       |                                                                 |               |             |                |                           |
| H Control → W Support                                 | 0.08          | 0.08        | 1.00           | .11                       |                                                                 |               |             |                |                           |
| H Conflict → W Support                                | 0.10          | 0.09        | 1.05           | .11                       |                                                                 |               |             |                |                           |
| W Control → H Support                                 | 0.12          | 0.08        | 1.59           | .17                       |                                                                 |               |             |                |                           |
| W Conflict → H Support                                | 0.02          | 0.08        | 0.22           | .08                       |                                                                 |               |             |                |                           |

Note. Coeff. = unstandardized coefficients for all fixed parameters. W and H = wives' and husbands' ratings of the quality of couple functioning in that domain, respectively. TL = time-lagged. In Model 4 and 5, husband to wife paths were fixed to allow models to converge; therefore, no effect sizes were computed for these paths and are noted as "NA." \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



*Figure 1.* We propose the *relational domain spillover model (RDSM)*, which suggests that different areas of marital functioning can spillover to influence one another over time. (e.g., as sexual satisfaction decreases the satisfaction with conflict management might decrease over time). We put RDSM to the test by specifically examining the associations between more positive and negative domains. We hypothesize that changes in the functioning of marital domains that are more positive or rewarding will be associated with changes in the functioning of marital domains that are more negative or aversive in nature. We suggest that these associations are bidirectional and evaluate how each negative domain influences each positive domain and visa versa across the first seven years of marriage.

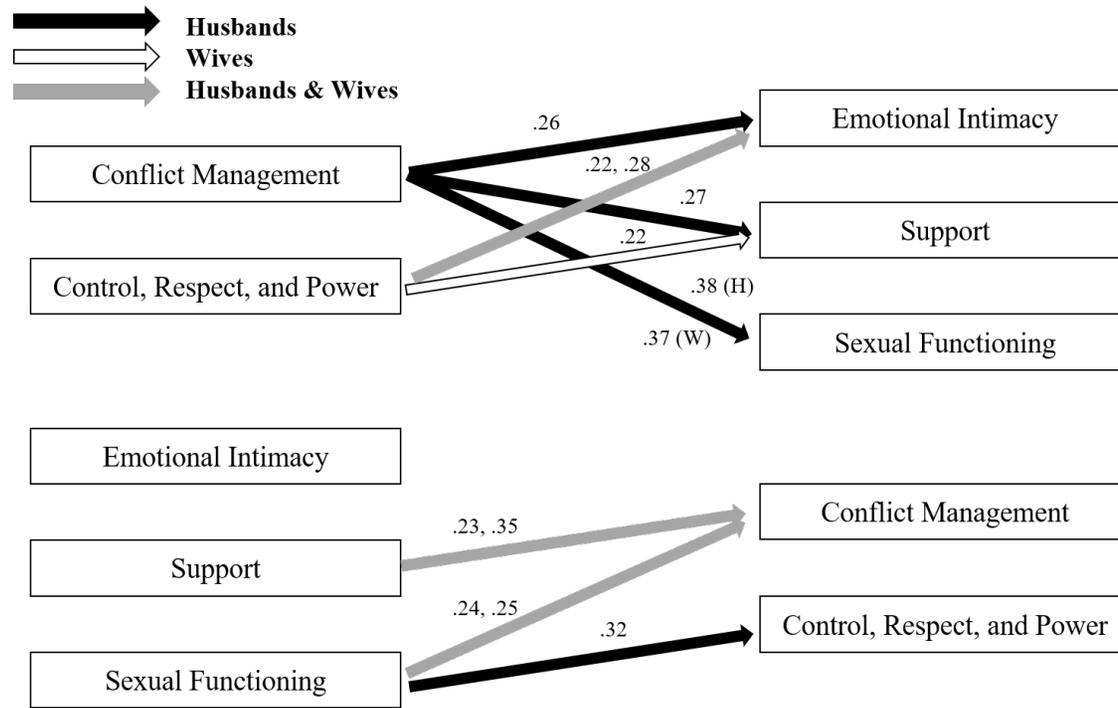


Figure 2. Summary of an initial test of the RDSM. Arrows represent all statistically significant paths in the models tested. The top half shows pathways where earlier changes in negative domains (on the left) predict later changes in positive domains (on the right), and the bottom half shows the reverse pathway. Black arrows indicate actor effects for husbands, white arrows indicate actor effects for wives, and grey arrows indicate actor effects for both spouses. Where two values are included on grey arrows, husband effects are reported first and wife effects second. The pathway from conflict management to sexual functioning in the top section indicate both an actor effect for husbands (.38) and a partner effect for husbands (.37). Effect sizes ( $r_{effect}$ ) are displayed for each significant effect.

### **APPENDIX A: Participant Version of the Relationship Quality Interview**

Item prompts for the participant version of the Relationship Quality Interview (RQI) are listed below. Each domain is rated on a scale of 1 to 9, with 1 indicating poor functioning on each domain (e.g., low levels of intimacy or poor conflict management) and 9 indicating extremely high functioning on each domain (e.g., high levels of intimacy and excellent management of conflicts).

#### **TRUST AND CLOSENESS IN YOUR RELATIONSHIP**

*Please consider the following over the last 6 months:* How close you feel to your partner; whether you can be yourself around your partner; how much you trust and confide in each other.

#### **SUPPORT IN YOUR RELATIONSHIP**

*Please consider the following over the last 6 months:* Whether you support each other (when one has a bad day, feels down, has a problem); whether you're supported in the way you want to be; whether there are ways you don't feel supported (your needs are dismissed, s/he doesn't seem to care).

#### **SEXUALITY AND SENSUALITY IN YOUR RELATIONSHIP**

*Please consider the following over the last 6 months:* How frequently you have sex; how satisfied you are with your sexual relationship; whether you engage in sensual behavior (touching, cuddling, hugging, massage); sexual difficulties.

#### **DECISION MAKING, RESPECT, AND CONTROL IN YOUR RELATIONSHIP**

*Please consider the following over the last 6 months:* Whether you respect each other, treat each other as competent, and accept each other; who makes major decisions and whether you're comfortable with that division; whether one has more control over certain aspects of the relationship.

#### **COMMUNICATION AND CONFLICT IN YOUR RELATIONSHIP**

*Please consider the following over the last 6 months:* how often you argue; how each of you typically behave during arguments (e.g., get defensive, call each other names, threaten to leave the relationship, block the other's way, push or grab the other); how arguments get resolved.

## **APPENDIX B: Quality of Relationship Domains Framework (QRDF) Background**

### **Identification of Domains of Relationship Quality**

The QRDF was developed as a multi-dimensional framework of relationship quality (*author citation*), which is a construct distinct from other commonly used marital constructs such as relationship satisfaction (referring to global relationship sentiment) and relationship adjustment (referring more broadly to both relationship processes and relationship sentiment; see Snyder et al., 2005, Heyman et al., 1994, and *author citation*). Relationship quality as a construct refers solely to relationship processes, such as emotional intimacy and conflict management processes.

The domains of relationship quality in the QRDF were identified during the process of measure development. The author's research team worked over the past two decades to develop a comprehensive, multi-dimensional measure of relationship quality to assess dyadic processes like conflict management, which was often a focus of marital research, as well as other dyadic processes relevant to the longitudinal course of marriage. Our research team conducted a thorough review of close relationships research across various disciplines that study relationship processes (e.g., clinical and social psychology, communication studies). We identified and operationalized five dimensions of relationship quality based on our exhaustive review: (1) emotional intimacy and trust, (2) partner support, (3) couple sexuality, (4) respect, power and control, and (5) conflict management. Items to assess each construct were developed through an iterative process of generating items, having teams of students and relationship experts sort the items into each domain, deleting items that did not have enough specificity to each domain, and refining and clarifying the operational definition of each domain. A thorough review of each domain and its definition can be found in [*author citation*].

The research team was unable to identify any additional relationship processes in the literature that did not fit into one of these five domains. We regularly discussed whether any additional domains of relationship quality existed in our team meetings, and these discussions of the literature on dyadic processes continued to confirm that these are the core domains of relationship quality. Consultation with other relationship experts also did not yield any additional domains of relationship quality and confirmed the five-domain framework reflected in the QRDF. See Supplemental Figure S1 for a depiction of the QRDF.

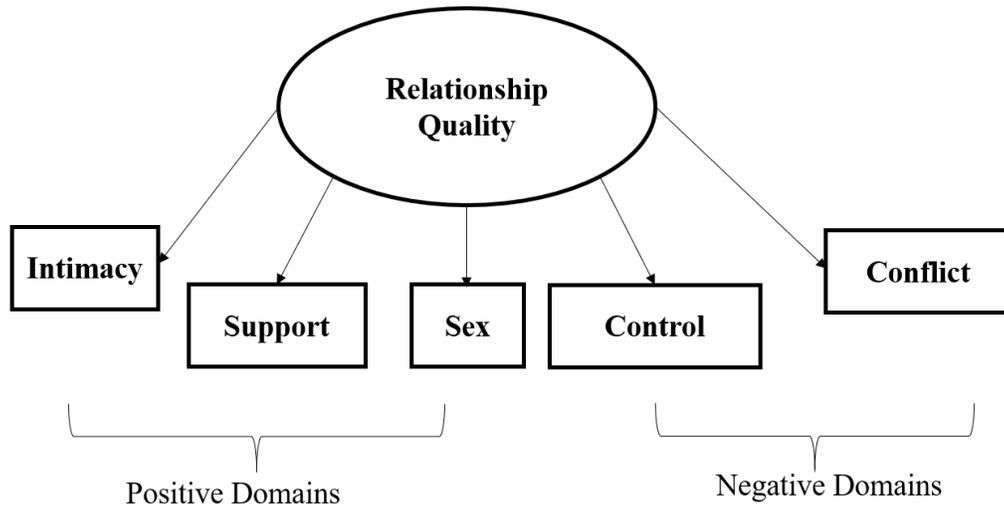
### **Distinctiveness of Relationship Domains**

Based on the comprehensive, multi-dimensional measure we developed of relationship quality – the Relationship Quality Interview (RQI; *author citation*) – we assessed associations between the five subscales of the RQI (each reflecting the five domains of relationship quality) in a sample of dating and married couples to determine the distinctiveness of the five domains. We found that RQI ratings across domains were correlated (.24-.65), showing that they are related and that they are subdomains of a larger construct, but not so highly correlated that they are overlapping or redundant (*author citation*). The two subscales (support ratings and respect and control ratings) that were the most highly correlated (.65-.70) also predicted different long-term outcomes (*author citation*).

### **Reliability and Validity of the RQI**

To determine construct validity of the RQI, we examined in the same study correlations between the RQI scale ratings for each domain and scores on self-report measures and behavioral observation codes for the same constructs. RQI scale ratings were weakly to moderately correlated with parallel self-report questionnaires (.24-.56 in the married sample and .03-.23 in the dating sample), and uncorrelated with behavioral measures (.05-.25). We found evidence for strong to

excellent convergent and discriminant validity based on Campbell and Fiske's (1959) criteria. We also used zero-order correlations to assess whether RQI scores reflected related traits (e.g, RQI emotional intimacy scores and trait attachment, RQI conflict and trait anger), and found each of these associations to be small across both samples (.004-.34), suggesting that the RQI measures a construct specific to the relationship and not individual differences. We also found that correlations between the RQI domain scores and global relationship satisfaction scores were small to moderate (.002-.46), suggesting that each relationship domain measured in the RQI does not simply reflect the construct of relationship satisfaction. Regarding reliability, ICC's for interviewer ratings ranged from .71-.94.



*Figure S1. Quality of Relationship Domains Framework.* The Quality of Relationship Domains Framework (QRDF) is depicted here, in which the construct of relationship quality includes relationship processes in five core domains: intimacy, support, sex, control, and conflict. We identify intimacy, support, and sex as the positive domains of couple functioning, and control and conflict as the negative domains of couple functioning. The RDSM, as described and tested in this paper, is based on the Quality of Relationship Domains Framework and examines longitudinal spillover effects between positive and negative domains of couple functioning.