Cognitive complexity and marital interaction in newlyweds

BENJAMIN R. KARNEY AND BRYNNA GAUER

University of California, Los Angeles

Abstract

Although newlyweds tend to be satisfied with their marriages, they nevertheless vary in their ability to resolve problems effectively. This study examined whether problem-solving effectiveness was associated with the complexity of spouses' thoughts about their problems. Newlyweds provided open-ended descriptions of marital problems and then engaged in interactions that were coded by independent observers. Results confirmed that the complexity of each spouse's descriptions accounted for unique variance in the quality of their discussions. Moreover, results supported a *weak link effect*, such that the thoughts of the least complex spouse accounted for additional variance, controlling for the main effects of each spouse. These results suggest that interventions to improve problem solving attend to both the structure and the content of partners' cognitions.

Relative to more established couples, newlyweds do not vary much in their marital satisfaction; their responses tend to cluster around the most positive end of any scale (Neff & Karney, 2005b). Nevertheless, newlyweds vary substantially in their ability to resolve disagreements. Among recently married couples, some are able to confront problems in a loving and affectionate way, whereas others descend into anger or withdrawal

(Gottman, Coan, Carrere, & Swanson, 1998; Karney & Bradbury, 1997). In observational studies, the quality of newlyweds' problem-solving behaviors accounts for subsequent changes in their marital satisfaction (Johnson et al., 2005) and predicts whether the marriage will endure or end in divorce (Gottman et al., 1998). In experimental studies, interventions that target marital problem solving have demonstrated some success at preventing declines in satisfaction over time (Halford, Sanders, & Behrens, 2001). Together, this research supports the idea that couples' effectiveness at addressing disagreements and resolving problems is causally linked to stability and change in their marital satisfaction.

Yet identifying communication as a source of stability and change in marriage raises broader questions about why couples vary in their effectiveness at resolving problems in the first place. Referring mostly to established relationships, cognitive behavioral models of marriage (e.g., Baucom, Epstein, Rankin, & Burnett, 1996; Weiss, 1984) have long described a circular relationship between problem-solving behaviors and relationship satisfaction. From this perspective, more

satisfied couples are more likely to exchange positive behaviors around areas of disagreement, supporting their initial satisfaction, whereas less satisfied couples are more likely to exchange negative behaviors, further eroding their initial satisfaction (e.g., Jacobson, Follette, & McDonald, 1982). In newlywed couples, however, problem-solving behaviors share little variance with marital satisfaction (Karney & Bradbury, 1997), and indeed among newlyweds there is little variance in marital satisfaction to share. Where then does the ability to resolve problems effectively come from at the outset of a marriage? Accounting for behavioral skills in couples who are uniformly high in marital satisfaction would be an important step toward identifying the more distal causes of change and stability in marriage.

To address this question, the current study draws a distinction between the content of spouses' cognitions about their marriage and the structure of those cognitions. A premise to be explored here is that couples who are relatively homogeneous in their marital satisfaction may nevertheless vary widely in the way they think about marital problems and disagreements, and this variability should be directly associated with the way couples communicate at the outset of their marriages. The rest of this introduction reviews the justification for this premise, draws out the implications of studying this issue in couples, and describes a study designed to examine these issues through observational and self-report data from newlyweds.

Cognitive content and cognitive structure in intimate relationships

As Schroder (1971) observed, cognitive representations that are equivalent in their content may nevertheless vary in their structure. That is, some spouses may support a positive view of their relationships with a simple set of perceptions and beliefs, whereas others may develop detailed and intricate justifications for their feelings. These cognitive structures are frequently described in terms of two dimensions: differentiation and integration (Schroder, 1971). *Differentiation* refers to

the number of categories or kinds of information taken into account in evaluating persons or events. For example, a spouse with a relatively undifferentiated set of beliefs about the marriage might regard his or her partner's behaviors by categorizing them as either selfish or unselfish. A spouse with a more differentiated set of beliefs would recognize that a specific behavior can have multiple, even contradictory, motives that cannot easily be located on a single evaluative dimension. *Integration* refers to the degree and quality of the connections among differentiated characteristics. For example, spouses with less integrated beliefs about the marriage may acknowledge differences of opinion with their partner, whereas spouses with highly integrated beliefs will acknowledge differences and also recognize the multiple levels at which different positions on an issue connect and interact. Because a set of cognitions cannot be integrated without being differentiated, it follows that spouses' thoughts about marital issues may vary along a continuum from undifferentiated and unintegrated, to differentiated but unintegrated, to differentiated and integrated, that is, from relatively simple to relatively complex (Tetlock & Suedfeld, 1988). As this definition makes clear, the structure of spouses' thoughts can be independent of the content of those thoughts. That is, spouses with equally positive evaluations of their marriages may support those evaluations in ways that vary widely in how they are organized.

Relationship researchers have long recognized this distinction between what partners believe and how those beliefs are structured. Across numerous operationalizations of this distinction, cognitive structures consistently account for unique variance in relationship outcomes, even after controlling for the content of those cognitions. For example, recent studies have assessed the structure of couples' representations of each other through a card sorting task. The standard version of this task asks intimates to arrange a set of positive and negative attributes into groups that describe different facets of their partners. Showers and her colleagues (Showers & Kevlyn, 1999; Showers & Zeigler-Hill, 2004) have shown

that, controlling for the number of negative attributes that intimates use to describe their partners (i.e., the content of the representation), the extent to which positive and negative attributes are arranged together (i.e., the structure of the representation) accounts for how much partners report liking and loving each other and how well the couple maintains these feelings over time. Murray and Holmes (1999) examined couples' cognitions through the card sorting task as well as through coding partners' written descriptions of each other and found convergent evidence across these operationalizations that the structure of couples' cognitions accounted for the quality and longevity of their relationships, controlling for the content of those cognitions. Independent of how much partners view each other positively, relationships were more successful when partners' views of each other were more *complex*, that is, when they were able to acknowledge multiple aspects of their partners and integrate these perceptions into a coherent representation.

Why should a more complex way of thinking about a relationship predict favorable outcomes? The complexity of a set of perceptions affects the salience, accessibility, and interpretation of any specific perception (Showers & Kevlyn, 1999). In a structure that acknowledges multiple facets of the partner (i.e., highly differentiated), a specific negative facet represents a smaller portion of the whole and consequently should be less salient. In a structure that acknowledges links between multiple facets (i.e., highly integrated), a specific negative facet may be linked to other positive facets and consequently should be less threatening. Thus, a more complex cognitive structure puts negative beliefs and experiences in perspective, minimizing the impact of negative content on the larger representation. A more complex structure also offers more flexibility in interpreting specific negative experiences. If I view my partner only as a spouse, then her failure to attend to me represents a failure in the only aspect of her that I acknowledge. If I recognize the many roles that my partner plays (e.g., spouse, parent, employee, etc.), then I can understand her being distracted without needing to judge her

as a spouse in a given moment. It follows that, to the extent that their understanding of the relationship is more complex, partners in initially satisfying relationships should be better able to assimilate new or contradictory information, whereas partners with more simple structures must accommodate in response to discrepant information (Murray & Holmes, 1999).

From this perspective, cognitive complexity should be especially relevant when couples address disagreements, a situation that requires partners to confront their discrepant points of view. For couples with more differentiated (i.e., more complex) perspectives on their issues, different points of view may be understood as equally valid and easily assimilated within a generally positive view of the partner and the relationship. In negotiation contexts, recognizing the validity of opposing viewpoints has been associated with more cooperative behavior (Pruitt & Kim, 2004). To the extent that spouses are able to appreciate multiple perspectives on their problems, then they should also be less defensive, more open to differences of opinion, and more able to identify avenues for compromise and agreement even within an area of general disagreement. For couples with less differentiated (i.e., less complex) perspectives on their issues, however, differences of opinion may be taken as a sign that the partner is biased, mistaken, or unwilling to listen. In negotiation contexts, perceiving the partner as biased is reliably associated with negative escalation during interactions (Kennedy & Pronin, 2008). Between intimate partners, we would similarly expect that, to the extent that spouses' thinking about problems is less differentiated, they may be less accepting of differences of opinion, less likely to accept responsibility for problems, and less willing to acknowledge the validity of positions that differ from their own.

Research that has directly examined associations between cognitive complexity and communication offers suggestive evidence to support these ideas. In a review of 40 studies conducted across a variety of domains, Burleson (1987) concluded that "extant research has firmly established the existence

of a significant, stable, and substantial relationship between cognitive complexity and person-centered communication" (p. 306). Research that has specifically addressed communication in established marriages (Denton, Burleson, & Sprenkle, 1995; Martin, 1992; Tyndall & Lichtenberg, 1985) also suggests that spouses whose cognitions about relationships are more complex are more effective at discussing and resolving problems, although none of these studies controlled for concurrent marital satisfaction. Most recently, Campbell, Butzer, and Wong (2008) used a card sorting task to assess the structure of spouses' perceptions of each other and found that, even after controlling for their global evaluations, spouses in established marriages whose perceptions of each other's positive and negative traits were more integrated behaved more positively during discussions of marital problems.

Despite these consistent findings, the implications of prior research for understanding marital interactions in newlyweds remain unclear, for several reasons. First, prior research has examined longstanding relationships exclusively. To the extent that cognitive structures and experiences in the relationship may affect each other over time, it is likely that the structure of partners' cognitions has already been shaped by their experiences by the time a marriage has endured several years. Moreover, Campbell and colleagues (2008) observed differences in the associations between cognitive structure and the quality of marital interactions between the youngest and oldest relationships in their sample, suggesting that findings from samples of established couples may not generalize to samples of young couples. Second, replicating similar results obtained in dating couples (Showers & Kevlyn, 1999), Campbell and colleagues found that cognitive structure was associated with interaction behavior only in the older and more negative couples in their sample, but not in the younger and happier couples. Such findings suggest that, to the extent that newlyweds are frequently young and happy, cognitive structure may not account for interaction behavior at the outset of marriage, yet common elements of both studies prevent strong conclusions

on this point. Both Campbell and colleagues and Showers and Kevlyn (1999) assessed the structure of partner's perceptions of each other's positive and negative traits. In their youngest and happiest couples, these perceptions of the partner may not have been directly relevant to the specific issues that couples were trying to resolve. Nevertheless, it remains possible that the structure of spouses' thoughts about more specific issues in the marriage may be associated with their problem-solving behavior, even in couples who hold each other in high regard.

Understanding the independent effects of cognitive structure and cognitive content on the way married couples communicate would be advanced by research that meets two criteria. First, couples must be assessed early in the marriage, when the structure and the content of spouses' cognitions are more likely to be independent. Second, researchers must assess the structure of spouses' thoughts about specific marital issues, as these are most likely to affect communication even in couples that are otherwise very satisfied. In the absence of such data, it remains unclear whether complexity is directly associated with the communication patterns that couples bring to the marriage, or whether complexity is better described as a product of unmeasured factors that also predict behavior in later marriage.

Modeling the dyadic effects of cognitive complexity

The quality of an interaction between two people seems likely to be affected by the quality of both partners' thoughts about their problems. Yet prior research on cognitive complexity and marital interaction has seldom taken both members of the dyad into account, instead estimating associations between the complexity of each individual and the behavior of that individual only. Thus, two questions remain open about the way the thoughts of both partners might combine to affect the course of marital interactions.

First, does the complexity of each spouse contribute independently to the quality of a couple's discussions? Although it seems likely that the structure of both spouses'

thoughts play a role in the nature of interactions between them, few prior studies of dyads have examined whether the complexity of each partner has independent effects. Within marital interactions, prior research suggests that each spouse may play a different role depending on who raised the topic under discussion. In particular, research on the demand–withdraw pattern in marital interactions has found that the quality of each spouse's behavior is frequently a function of his or her own investment in the problem being discussed (Christensen & Heavey, 1990; Vogel & Karney, 2002). Similar patterns may arise in the effects of cognitive complexity, such that the association between each spouse's complexity and the quality of the interaction may depend on how much each spouse has thought about the problem. Presumably, the spouse who has raised the issue under discussion has thought about the problem more extensively, and so it can be predicted that the complexity of the spouse who chose the problem to be discussed would have a greater effect on the quality of the interaction than the complexity of the spouse who did not choose the problem.

Second, does the complexity of two partners interact to affect their discussions over and above the main effects of each partner? To date, existing dyadic analyses of cognitive complexity have focused on the benefits of similarity (e.g., Neimeyer & Neimeyer, 1983). In particular, constructivist psychologists have suggested that people should be more attracted to partners whose orientation toward the world resembles their own, and they have proposed that cognitive complexity is a key feature of that orientation. This idea has received some support in research on attraction (e.g., Burleson, Kunkel, & Szolwinski, 1997), but it may not be as useful in understanding the problem-solving behaviors of interest here. Given the proposed main effects of complexity, it would be difficult to justify how two partners who each lacked complexity would benefit from their similarity alone. Indeed, when Campbell and colleagues (2008) examined the effects of similarity of cognitive structure on marital interaction, they found few significant effects.

An alternative model would predict a weak link effect, such that the abilities of the least complex partner constrain the quality of the interaction. This idea draws on the observation that, even within marital interactions among newlyweds, the behaviors of two spouses tend to be highly correlated (Karney & Bradbury, 1997; McNulty & Karney, 2002). To the extent that one spouse exchanges many negative behaviors within an interaction, the other spouse is likely to reciprocate by exchanging negative behaviors in turn. If the quality of each spouse's behavior is indeed affected by the complexity of their thoughts about problems, then the least complex spouse will limit the ability of both partners to bring about an effective resolution. In other words, it may be difficult for even the most cognitively complex spouse to arrive at a compromise with a partner who perceives no avenues for compromise. Thus, the least complex partner in a couple should have a unique effect on the interaction, such that the lower the complexity of this person, the more negative the interaction, even after accounting for the main effects of each spouse.

Overview of the current study

To examine the individual and dyadic associations between cognitive complexity and problem-solving behavior in early marriage, the current study drew on self-report and observational data from newlywed couples. To assess cognitive complexity, each spouse was asked to describe specific marital problems in written and oral open-ended responses, and the complexity of these responses was coded by independent raters. This approach was selected over alternative methods of assessing cognitive structures for several reasons. First, unlike the card sorting task used recently by Showers and Kevlyn (1999) and Campbell and colleagues (2008), the open-ended assessments are intuitive and have face validity—spouses are simply being asked to provide their own thoughts in their own words. Second, this approach captures thoughts that are directly relevant to the kinds of topics that couples address in their problem-solving interactions. Third, in prior

research using this approach, the implications of individual differences in the complexity of people's responses have been profound. For example, in a provocative analysis that coded the complexity of paragraphs taken from the published speeches of historical figures, Suedfeld and Tetlock (1977) demonstrated that the complexity of the public statements released by governments tends to decrease prior to the outbreak of wars.

After they provided their written and spoken descriptions of marital problems, the newlyweds in this study were asked to engage in two problem-solving discussions, with each spouse choosing the topic for one of the discussions. The first hypothesis of the current work was that the quality of newlyweds' problem-solving interactions should be unrelated to their marital satisfaction but that, controlling for marital satisfaction, the complexity of each spouse's thoughts about their problems should be independently associated with the quality of the interactions. In particular, it was predicted that more complex thinking about marital problems would be associated with more effective problem-solving interactions.

The second goal of the current work was to explore the dyadic effects of cognitive complexity on the quality of marital problem-solving interactions. Specifically, this study explored the evidence for the weak link hypothesis by determining whether, after controlling for the unique associations between the quality of a marital interaction and the complexity of each spouse's thoughts, the complexity of the least complex member of the dyad exerts additional effects on the quality of the interaction.

Method

Participants

Newlywed couples were recruited from a university community through two methods. First, advertisements offering up to $300 to "newlyweds interested in participating in a longitudinal study of marriage" were placed in local and community newspapers, bridal shops, and bridal registries. Second, marriage licenses filed in the surrounding county during a 6-month period were reviewed, and couples who were eligible to participate based on information available on their license were sent letters of invitation. All participants who responded to these solicitations were screened over the telephone to ensure they met the following criteria: (a) neither spouse had been married previously, (b) the marriage had taken place less than 3 months ago, (c) neither spouse had children, (d) wives were between the ages of 18 and 36 (to allow for the possibility of conceiving a child over the course of the study), (e) each spouse spoke English fluently and had completed a minimum of 10 years of education (to ensure comprehension of the questionnaires), and (f) the couple did not have plans to move from the area in the immediate future. The 82 couples who met all eligibility criteria and arrived at their scheduled appointment comprised the current sample. There were no significant differences between couples recruited via the two different types of solicitation on the basis of age and years of education.[1]

The mean age of husbands was 25.2 years old ($SD = 3.3$, range = 18–35), and the mean age of wives was 23.7 years old ($SD = 2.8$, range = 19–36). The majority of the husbands (84%) and wives (90%) were White. Forty percent of the husbands and 39% of the wives were employed full-time, whereas 54% of the husbands and 50% of the wives were full-time students. Nearly half the husbands (47%) and the wives (48%) were Protestant, 16% of the husbands and wives were Catholic, and 14% of the husbands and 15% of the wives listed their religious affiliation as "other." The average combined income for these couples was less than $20,000 per year, consistent with the large proportion of full-time students in the sample.

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1. A number of published articles have examined data collected from this sample (Frye & Karney, 2002, 2004, 2006; Karney, 2001; McNulty & Karney, 2001, 2002, 2004; McNulty, Neff, & Karney, 2008; McNulty, O'Mara, & Karney, 2008; Neff & Karney, 2002, 2003, 2004, 2005a, 2005b, 2007). The analyses described here are the only ones to address any of the open-ended cognitive complexity assessments.

Procedure

The data analyzed in this report come from the first wave of a longitudinal study of newlywed marriage. At the Time 1 assessment, couples meeting all eligibility criteria were scheduled to attend a 3-hr laboratory session and were mailed packets of self-report measures to complete at home. Spouses were instructed over the phone and in a letter accompanying the questionnaires to complete their forms independently of one another and then to bring the completed forms with them to their laboratory session.

During the session, spouses were first interviewed individually and assisted in identifying a prominent source of conflict or disagreement in the marriage. Spouses were then brought to the same room and left alone to "try to work toward a mutually agreeable solution" to each spouse's issue during two 10-min interactions. A coin flip was used to determine which spouse's issue would be the topic of the first interaction. If both spouses picked the same issue, the spouse who lost the coin flip was assisted in choosing a second issue. Each interaction was videotaped. Couples received $50 for their participation in this phase of the study.

Measures

Marital satisfaction

Several of the most commonly used measures of marital satisfaction (e.g., the Dyadic Adjustment Scale; Spanier, 1976) contain items that assess spouses' evaluations of specific areas of potential conflict as well as items assessing spouses' sentiments toward the relationship as a whole (see Fincham & Bradbury, 1987). To ensure that these two ideas were not confounded in the current study, marital satisfaction was measured with an instrument that obtains global evaluations of the relationship exclusively. Specifically, spouses completed a 15-item version of the Semantic Differential (SMD; Osgood, Suci, & Tannenbaum, 1957). This scale asked spouses to rate their current feelings about their marriage on 7-point scales between two opposite adjectives (e.g., *bad–good*, *satisfied–dissatisfied*,

unpleasant–pleasant), yielding total scores with a potential range from 15 to 105. The internal consistency of this scale was high for both spouses (Cronbach's αs = .91 for husbands and .93 for wives).[2]

Marital problems

To assist spouses in identifying marital problems, spouses completed a version of the Relationship Problem Inventory (RPI; Knox, 1970) as part of the packet of instruments they completed at home. The RPI is an inventory of 19 potential topics of disagreement in a marriage (e.g., communication, finances, career decisions, etc.). For each topic, this measure asks spouses to rate the extent to which the issue is an area of difficulty for the couple, on a scale from 1 (*not a problem*) to 11 (*major problem*). The RPI has demonstrated adequate reliability in prior research and is a measure frequently used to elicit problems in research on marital interaction (e.g., Gottman, Markman, & Notarius, 1977).

Cognitive complexity

Prior research has suggested that written material tends to be higher in complexity than verbal material (Suedfeld, Tetlock, & Streufert, 1992). To ensure that the results of the current analyses were not unique to a single method of assessing this construct, spouses were asked to provide two open-ended descriptions of marital problems. First, as part of the packet of questionnaires that spouses completed at home, spouses were asked to write a short paragraph describing one of the problems on the RPI. Specifically, the page following the RPI contained the following instructions:

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2. To ensure that the results obtained here were not idiosyncratic to a particular measure of marital satisfaction, spouses also completed the Quality Marriage Index (QMI; Norton, 1983), a six-item scale asking spouses to rate the extent to which they agree with general statements about their marriage (e.g., "We have a good marriage" and "I really feel like part of a team with my partner"). The QMI yields scores from 6 to 45 and demonstrated high internal consistency in this sample (coefficient α = .94 for husbands and for wives). All of the results reported here were replicated when the QMI was used in place of the SMD.

Choose one of the issues on the previous page that you rated as being an area of difficulty or disagreement for you in your marriage. Please describe the problem in more detail on the lines provided below. What is the issue? How could it be resolved?

Second, at the end of the individual interviews during the laboratory session, spouses were asked to describe a marital problem verbally, and these descriptions were audiotaped. Specifically, the interviewer described the marital interactions that follow the interview and explained that each spouse would be asked to choose a topic for one of the problem-solving discussions. The interviewer then presented the following instructions and allowed the spouse to respond without interrupting:

Before we return to the main room for the interactions, could you tell me a little about the problem you would like to discuss? What is the issue? How could it be resolved?

Thus, at Time 1, 74 husbands (90%) and 76 wives (93%) provided written descriptions of marital problems, whereas 79 husbands (96%) and 71 wives (86%) provided verbal descriptions of marital problems.[3] Nearly half of the spouses (47% of husbands and 54% of wives) described the same problem in both descriptions. The topic of the written paragraph matched one of the topics that spouses discussed during their interactions for 56% of husbands and 66% of wives. The topic of the verbal description matched one of the topics that spouses discussed for 85% of husbands and 83% of wives.

The complexity of these descriptions was coded by trained undergraduate raters using a modified version of the Conceptual/Integrative

Complexity Scoring Manual (Baker-Brown et al., 1992). This system rates the level of differentiation and integration displayed in verbal and written material on a scale of 1 to 7, where a score of 1 indicates descriptions showing no differentiation and no integration, and a score of 7 indicates descriptions that are well differentiated and fully integrated. (For more details on the coding system, see the Appendix.) Two raters coded each description. Intraclass correlation coefficients (ICCs) indicated that the reliability of coders' ratings was adequate for both kinds of assessments (for written assessments, ICCs = .71 for husbands and .56 for wives; for verbal assessments, ICCs = .67 for husbands and .56 for wives). Disagreements between raters were resolved by the first author.

Conflict resolution behavior

To analyze the quality of marital interactions, prior observational research has generally used one of two types of coding systems. The microanalytic approach is to parse each interaction into speaking turns and then to assign each speaking turn a behavioral code. The global rating approach is to review the entire interaction and then to make global ratings of each spouse's behavior during the interaction. Studies that have compared both approaches suggest that they provide similar but not identical results (Gill, Christensen, & Fincham, 1999). To ensure that the current results are not dependent on the specific approach used to code the interactions, the current study asked trained observers to provide microanalytic as well as global ratings of spouses' behavior.

The microanalytic coding of these dimensions was conducted with a modified version of the Verbal Tactics Coding Scheme (VTCS; Sillars, 1982). This version of the VTCS assigns each spouse's speaking turn one of four possible codes. A speaker received an Avoidant code for speaking turns that were off-topic or moved the discussion away from the problem at hand. A speaker received one of two negative codes for speaking turns that either directly faulted, rejected, or criticized the partner (Direct Negative), or indirectly

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3. With respect to the written complexity assessments, missing data are the result of spouses who chose to skip this page of their initial survey packet. With respect to the oral complexity assessments, missing data are the result of interviewer error; that is, some interviewers neglected to ask the final question of the interview.

criticized the partner through presumptive attributions, avoiding responsibility, or hostile questions (Indirect Negative). A speaker received a Constructive code for speaking turns that were on topic and not negative. To control for the fact that different couples exchanged different numbers of speaking turns, the number of each kind of code received by each spouse during each interaction was divided by the number of speaking turns for each spouse to calculate the percentage of speaking turns that each spouse spent engaging in each kind of behavior during each interaction.

The reliability of this system was assessed by randomly choosing 30% of the interactions to be coded by a second rater. Degree of agreement between raters was estimated with an intraclass correlation coefficient comparing the amounts of each code observed by each rater across the interactions. ICCs indicated adequate interrater reliability for the codes analyzed here (for Direct Negative, ICCs = .66 for husbands and .83 for wives; for Indirect Negative, ICCs = .83 for husbands and .64 for wives; for Constructive, ICCs = .77 for husbands and .87 for wives; for Avoidant, ICCs = .74 for husbands and .85 for wives). Avoidance was not expected to be associated with complexity, and indeed none of the correlations between avoidance and complexity reached significance for either spouse (rs ranged between .14 and −.14, all p values >.05). Accordingly, avoidance was not addressed further in these analyses.

Global coding of the interactions was conducted by asking the same raters to complete two scales asking them to describe their overall impressions of husbands' behavior and wives' behavior during each interaction. Eight items (e.g., "To what extent did each spouse interrupt the other?" and "To what extent was each spouse defensive during the conversation?") comprised the Global Negativity scale. Scores on this scale could range from 8 to 40, and the internal consistency was adequate for ratings of each spouse in each interaction (Cronbach's αs for spouses' own topic = .75 for husbands and .74 for wives; Cronbach's αs for partners' topic = .75 for husbands and .74 for wives). Ten items (e.g.,

"To what extent was each spouse engaged in the conversation?" and "To what extent did each spouse seem willing to change?") comprised the Global Positivity scale. Scores on this scale could range from 10 to 50, and again the internal consistency was adequate for ratings of each spouse in each interaction (Cronbach's αs for spouses' own topic = .89 for husbands and .91 for wives; Cronbach's αs for partners' topic = .90 for husbands and .85 for wives). To assess interrater reliability on these scales, 25% of the interactions were also rated by a second observer. The ICCs across observers ranged from .67 to .79, indicating adequate interrater reliability on the global scales.

The two forms of behavioral coding (i.e., microanalytic and global) resulted in 5 behavioral codes for each spouse in each interaction, and 20 behavioral codes for each couple across interactions. Before conducting analyses, the correlations among the behavioral codes were examined to determine whether or not each code should be treated as a separate dependent variable. Because microanalytic and global ratings were conducted on two different metrics, all of the behavioral codes were first standardized. Correlating the standardized behavior codes showed a high degree of shared variance among the positive and negative codes assigned to each spouse (average $r = -.77$) and among the codes assigned to both spouses within an interaction (average $r = .62$). In contrast, behaviors were not as strongly (although still significantly) correlated across the two interactions (average $r = .48$). To reduce the level of redundancy in the analyses, the sum of husbands' and wives' standardized negative ratings in each interaction was subtracted from the sum of husbands' and wives' standardized positive ratings in that interaction. The result was two normally distributed dyadic scales indexing the overall quality of each couple's behaviors during each interaction, where more positive scores represent more positive interactions. Coefficient α for the 10 behavioral ratings comprising each scale was high for both problem discussions (αs = .88 for husbands' topics and .86 for wives' topics).

Additional measures

To evaluate the discriminant validity of the cognitive complexity assessment, spouses were asked to complete several additional measures that might plausibly be expected to share variance with this construct. First, spouses completed the Relationship Attributions Measure (RAM; Fincham & Bradbury, 1992), a 24-item measure assessing the degree to which spouses tend to blame their partners for negative events in the marriage. The items on the RAM combine to form two subscales, capturing spouses' maladaptive causality and responsibility attributions, respectively. In the current sample, coefficient alpha was adequate for both scales across spouses (causality subscale: αs = .85 for husbands and .73 for wives; responsibility subscale: αs = .89 for husbands and .90 for wives). Second, spouses completed the Personal Need for Structure Scale (PNS; Neuberg & Newsome, 1993), an 11-item measure assessing an individual's preference for clear ideas and predictable situations. In the current sample, coefficient alpha for this scale was adequate for both spouses (αs = .73 for husbands and .83 for wives). Finally, spouses reported on the number of years of formal education they had received (for husbands, $M = 16.4$, range $= 10–21$; for wives, $M = 16.3$, range $= 12–21$).

Analysis strategy

The primary outcome of interest in this study was the observer-rated quality of newlyweds' problem-solving interactions. To account for variability in this outcome, the data described above were examined with hierarchical multiple regression. To ensure that what little variance in marital satisfaction there was in this sample was controlled, spouses' marital satisfaction scores were entered into the first level of the regression. Each spouse's cognitive complexity scores were entered into the second step of the regression.

To evaluate possible interaction effects between husbands' and wives' cognitions, past research on couples has entered the product of both spouses' scores into the regression equation, after controlling for the main

effects of each spouse (e.g., Campbell et al., 2008). Kenny (1996), however, has reminded researchers that "the choice of the specification of the interaction should be guided by theoretical considerations and the product term should not be routinely used" (p. 284). In the current study, the specific hypothesis for the interaction was that the spouse with the lowest level of complexity would limit the ability of both spouses to engage in problem-solving discussions effectively. To address this particular kind of interaction effect, a new variable was created that took the lowest complexity score available for either spouse in a couple. Husbands' scores were lowest for 39% of couples, and wives' scores were lowest for 41% of couples. In the remaining couples, where spouses' scores were equal, that score was used. This new variable was entered into the final level of the regressions to estimate the effects of the weak link controlling for the main effects of each spouse's complexity. Because the focus on the least complex spouse requires that both spouses provided complexity scores, listwise deletion of missing data was warranted, resulting in a final sample of 59 couples (e.g., in 72% of the total sample, both spouses provided both of the complexity assessments).

Results

Descriptive statistics

Means and standard deviations for the variables examined in this study are presented in Table 1. As the table shows, husbands and wives reported relatively high satisfaction on average. Indeed, the satisfaction scores of both spouses were highly skewed. This is not surprising in a sample of first-married newlywed couples. Nevertheless, standard deviations show substantial variability in marital satisfaction across couples, justifying further analyses.

The average cognitive complexity rating for spouses' written descriptions of a marital problem was 3. Thus, on average, spouses described multiple positions on their problems without any acknowledgment that these positions might be integrated, despite explicit

Table 1. *Descriptive statistics*

	Husband			Wife			Couple		
	M	*SD*	Skew	*M*	*SD*	Skew	*M*	*SD*	Skew
Marital satisfaction	96.3	8.8	−1.7	97.8	10.7	−3.1			
Cognitive complexity									
Written	3.0	1.1	−0.23	3.0	1.1	−0.01			
Verbal	2.6	0.92	−0.24	2.4	1.1	0.10			
Problem severity									
Written	5.5	3.0	0.25	5.0	2.8	0.39			
Verbal	5.0	2.8	0.19	5.1	2.8	0.39			
Problem-solving behavior during husbands' topics							0.0	6.9	−0.32
Problem-solving behavior during wives' topics							0.0	6.6	−0.40

instructions to address how problems might be resolved. The complexity scores of spouses' verbal descriptions were significantly correlated with the ratings of their written descriptions in the roughly 50% of cases where spouses addressed the same topic in both assessments, for husbands, $r(42) = .37$, $p = .02$; for wives, $r(48) = .36$, $p = .01$. When spouses addressed different topics in each assessment, the correlation between the scores was not significant for either spouse, for husbands, $r(25) = .13$, $p = .52$; for wives, $r(25) = .13$, $p = .53$. Consistent with prior research using this system (e.g., Suedfeld et al., 1992), the verbal descriptions were on average rated as significantly less complex than the written descriptions, for husbands, $t(70) = −2.7$, $p = .008$; for wives, $t(66) = −3.4$, $p = .001$. Paired sample t-tests showed no significant differences between husbands' and wives' scores on either assessment, for written assessments, $t(70) = .08$, $p = .93$; for verbal assessments, $t(67) = 1.1$, $p = .28$. Spouses' cognitive complexity scores were only weakly associated. The complexity of wives' written problem descriptions was marginally associated with their husbands' written descriptions, $r(69) = .22$, $p = .07$, and significantly associated with husbands' verbal descriptions, $r(71) = .25$, $p = .04$, but the complexity of wives' verbal descriptions was not significantly associated with either complexity assessment in husbands (rs $< .05$). To ensure that the results of this study were not specific to a single

procedure, the central analyses of this study addressed the sum of the written and verbal ratings for each spouse.[4]

Table 1 also presents spouses' average ratings, taken from the RPI, of the severity of the problems that they wrote and spoke about for the complexity assessments. Paired sample t tests compared the severity of these problems with the average severity of all of the problems on the RPI for each spouse. These comparisons indicated that the problems that spouses chose to describe in their written and verbal assessments tended to be significantly more severe than spouses' average problems (all ps $< .001$).

Finally, Table 1 describes the average quality of each problem-solving discussion, as rated by the independent coders. It is worth noting that although the marital satisfaction scores of the couples in this sample were highly skewed, the observed quality of their interactions was normally distributed. Thus, even the highly satisfied newlywed couples in this sample nevertheless varied significantly in their ability to address topics of disagreement in the marriage. Paired sample t tests compared the observed quality of the discussions of wives' topics with the observed quality of the discussions of husbands' topics. These comparisons showed that observed quality of the discussion did not differ as a

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4. When the written and verbal descriptions were examined separately, the results were nearly identical to those described here.

Table 2. *Discriminant validity of cognitive complexity ratings*

| | Wives' variables | | | | |
	Marital satisfaction	Written complexity	Verbal complexity	Written problem severity	Verbal problem severity
Husbands' variables					
Marital satisfaction	—	.09	.04	−.27*	−.32**
Written complexity	.17	—	.25*	.07	−.22
Verbal complexity	.09	.29*	—	−.14	−.10
Written problem severity	−.33**	.10	.13	—	.68***
Verbal problem severity	−.10	.14	.17	.70***	—

Note. Correlations among wives' variables are presented above the diagonal; correlations for husbands' variables are presented below the diagonal.
$^*p < .05$. $^{**}p < .01$. $^{***}p < .001$. All p values are two-tailed.

function of who chose the topic, $t(81) = .00$, $p = 1.00$.

Discriminant validity of complexity ratings

A preliminary assumption of this study was that the structure of spouses' thoughts about their marital problems would be independent of the content of those thoughts. To evaluate this assumption, Table 2 presents the correlations among each spouse's complexity ratings and their Time 1 marital satisfaction and problem severity ratings. As the table shows, the assumption of independence between content and structure was supported in this sample. For both written and verbal assessments, cognitive complexity ratings were not reliably associated with marital satisfaction or with the severity of the problem being described.

The association between cognitive complexity and the specific problems being described was also examined. Of the 19 problems listed in the RPI, 6 problems were chosen for over 50% of the written and verbal problem descriptions: communication, in-laws, leisure time, time spent together, money management, and household management. One-way analyses of variance (ANOVAs) comparing the mean complexity ratings for each topic on the RPI proved nonsignificant for both kinds of assessment and both spouses, for husbands' written, $F(14, 59) = 1.7$, $p = .08$; for husbands' verbal, $F(15, 63) = .94$, $p = .53$; for wives'

written, $F(16, 59) = 1.1$, $p = .34$; and for wives' verbal, $F(13, 57) = 1.4, p = .19$. Thus, the cognitive complexity of spouses' descriptions did not appear to vary systematically with the specific problems spouses chose to describe.

Finally, correlations were estimated between the two complexity assessments and spouses' years of education, scores on the Relationship Attributions Measure, and scores on the PNS. None of these correlations approached significance (rs ranged from .16 to −.16, all nonsignificant). Thus, the cognitive complexity of spouses' descriptions appears to be independent of their level of education, their tendency to make maladaptive attributions for partner behavior, and their preference for simple structure in their lives.

Cognitive complexity and marital interaction

The first hypothesis of this study was that the way spouses structure their thoughts about marital problems should account for variance in their ability to discuss problems constructively. Spouses whose thoughts about marital problems were more complex were expected to engage in more positive behaviors and less negative behaviors than spouses whose thoughts were less complex. Table 3 presents results of the regression analyses for each spouse's topic.

As Table 3 shows, neither spouse's marital satisfaction was significantly associated with

Table 3. *Unique and interactive associations between cognitive complexity and observer ratings of problem-solving behavior*

Predictor	Husbands' topic			Wives' topic		
	Change in R^2	Standardized beta	Partial correlation	Change in R^2	Standardized beta	Partial correlation
Step 1	.05			.02		
Husbands' SMD		.04	.04		.05	.04
Wives' SMD		.21	.19		.12	.11
Step 2	.21***			.26***		
Husbands' complexity		.34***	.37		.28*	.29
Wives' complexity		.25*	.27		.40**	.42
Step 3	.16***			.00		
Lowest complexity		.95***	.47		.13	.06

$^* p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$ All p values are two-tailed.

the quality of their problem-solving interactions during either discussion. This finding is consistent with other longitudinal research on newlyweds suggesting that problem-solving behavior is unrelated to marital satisfaction in newlyweds, emerging as a predictor of change in marital satisfaction only later in the relationship. Controlling for spouses' marital satisfaction, however, Table 3 shows that during the discussions of both spouses' problems, the cognitive complexity of both spouses was independently associated with the quality of their problem solving. Specifically, couples' discussions of their problems were observed to be more constructive when husbands' and wives' descriptions of their marital problems were more cognitively complex.

Although the complexity of both spouses was independently associated with the quality of both interactions, it is nevertheless possible that the complexity of the spouse who nominated each topic matters more for the discussion of that topic. To address this possibility, we ran additional tests on the constraint that the association between husbands' and wives' complexity and the quality of the interaction was equal within each interaction. These tests

showed that, for discussions of topics nominated by husbands, the hypothesis that the complexity of both spouses had equal associations with the quality of the interaction could not be rejected, $F(1, 52) = 1.08$, $p = .30$. For discussions of topics nominated by wives, however, the equivalence hypothesis could be rejected, $F(1, 52) = 3.98$, $p = .05$. In other words, when discussing a marital problem raised by the wife, the complexity of the wife was associated with the quality of the interaction more strongly than the complexity of the husband.

The third step of the multiple regression described in Table 3 examined whether the least complex spouse in a couple has an additional effect on the nature of their problem solving, controlling for the main effects of each spouse's complexity. As Table 3 shows, this dyadic hypothesis was supported for the discussions of husbands' problems only. Controlling for the significant effects of each spouse's levels of cognitive complexity, the least complex spouse had additional effects on the nature of couple's discussions, such that discussions were less negative the higher the complexity of the least complex spouse. In other words, the spouse whose thoughts about

marital problems are least complex affects the quality of marital problem-solving behavior above and beyond the main effects of each spouse's level of complexity. This dyadic effect was not significant for discussions of wives' problems.[5]

To examine whether the strength of the weak link effect depended on the gender of the least complex spouse, we examined the main effect of a dummy code indicating the gender of the least complex spouse and examined the interaction between this dummy code and the weak link variable. None of these additional parameters approached significance for either interaction, suggesting that the unique ability of the least complex spouse to account for variance in the quality of the discussion of husbands' topics did not depend on the gender of the least complex spouse.

Discussion

Rationale and summary of results

Although most newlyweds feel positively about their relationships and about their future (e.g., Huston, Caughlin, Houts, Smith, & George, 2001), they nevertheless demonstrate a wide range of skill at resolving marital

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5. To evaluate whether different ways of assessing inter-action effects provide different results, these analyses were repeated with two alternative interaction terms. First, following guidelines proposed by Aiken and West (1991), spouses' complexity scores were cen-tered around their means and then the product of these centered variables was computed. The main effects of these variables were identical to the effects reported in Table 3, but the product term did not account for significant additional variance in the observed quality of either interaction. Second, to assess the similar-ity hypothesis, the absolute value of the difference between spouses' complexity scores was entered into the regression analyses as an interaction term, after controlling for the main effects of each spouse's com-plexity. These analyses mirrored the results reported in Table 3, such that, after controlling for the main effects of each spouse, the quality of the discussions of hus-bands' topics was lower to the extent that the differ-ence between spouses' complexity scores was greater. Closer examination of the difference score explained the similarity in the results from the two types of inter-action terms: The absolute difference between spouses was significantly correlated, $r(59) = -.47$, with the lowest complexity score in a couple. In other words, as the mean complexity score of the couple increases, the absolute difference between spouses tended to decrease in this sample.

problems (Johnson et al., 2005). Given the importance of effective problem solving for maintaining marital satisfaction, how can mar-ital research account for the quality of newly-weds' problem-solving interactions?

To address this question, the current study drew from cognitive behavioral approaches to marriage, which suggest that the behaviors that spouses exchange during marital interac-tions are likely to be associated with the way they think about each other and about the rela-tionship (Bradbury & Fincham, 1989; Weiss, 1984). Most of the prior research drawing from this perspective has focused on the con-tent of spouses' thoughts in established mar-riages (e.g., Baucom, Sayers, & Sher, 1990; Bradbury & Fincham, 1992), but newlyweds do not vary much in the content of their thoughts. Instead, the current study explored the idea that behaviors may be associated with the structure of spouses' thoughts, and in par-ticular with the cognitive complexity of their thoughts about marital problems.

The first goal of the current study was to test the prediction that, among newly-wed couples, more complex thoughts about marital problems would be associated with more effective problem solving during a marital interaction. Results indicated strong support for this idea. When spouses' writ-ten and verbal descriptions of marital prob-lems were rated as more complex, they were observed exchanging more positive and fewer negative behaviors during a subse-quent problem-solving discussion. Further-more, multiple regression analyses showed that the complexity of each spouse was inde-pendently associated with the quality of the interaction. Because couples engaged in two interactions, with each spouse selecting one of the topics, the current study was able to exam-ine whether the complexity of each spouse had a greater effect on discussions of top-ics chosen by that spouse. Results offered weak but consistent support for this view. The behaviors of both spouses tended to be more strongly associated with the complexity of the spouse who chose the topic, but the complex-ity of both spouses affected both discussions, and the difference between the effects of each spouse was not substantial.

It is noteworthy that the cognitive complexity of spouses' thoughts was associated with behavior even though cognitive complexity was independent of marital satisfaction, problem severity, level of education, personal need for structure, and attributional style. This suggests that it is indeed the structure of spouses' thoughts that is having the effect, rather than any aspect of cognitive content with which the complexity scores might have been associated. It may be that with respect to marital problems, the content of spouses' thoughts determines each spouse's position on an issue, but the structure of spouses' thoughts determines how each spouse reacts to new information relevant to that position. Within a discussion of a potential area of disagreement, how spouses react to views that differ from their own is a crucial determinant of the effectiveness of the discussion. For spouses who take into account only their own perspective on marital issues, a partner's different opinion may be threatening. Such spouses are trapped between two undesirable options: abandon their own position completely or reject their partner's position completely. In contrast, spouses whose thoughts about problems integrate their own position with an awareness of alternative views may face a wider range of options in the same situation. They should be less defensive and more willing to consider avenues for compromise. Increased complexity should therefore allow spouses to avoid the behavioral rigidity that is a trademark of the most distressed relationships (Burman, Margolin, & John, 1993). Over time, newlyweds who can think about their problems in this way may be better able to maintain their initial satisfaction, and indeed there is evidence from research on dating couples that the structure of partner beliefs predicts the longevity of their relationship (Murray & Holmes, 1999). The current study suggests that associations between complexity and problem-solving behavior may mediate these effects.

The idea that cognitive complexity promotes behavioral flexibility has implications for understanding the dyadic effects of cognitive structures. In any negotiation, rigidity on one side is enough to prevent a compromise, even if the other side is extremely flexible. Marital interactions may also be vulnerable to this sort of weak link effect, such that the effectiveness of a problem-solving discussion should be limited by rigidity on the part of the least complex spouse. The second goal of the current study was to evaluate the support for this idea by determining whether the least complex spouse affected the quality of the interaction even after the main effects of each spouse were taken into account. The weak link effect was significant for discussions of topics chosen by husbands but not for discussions of topics chosen by wives. Given the lack of a priori hypotheses about gender differences in these effects, the difference between the two discussions should be interpreted with caution. One speculative explanation for the difference is that husbands in this sample may have been more likely to choose to discuss problems that were issues for the couple, whereas wives may have been more likely to choose topics that were problems for themselves and not for their husbands. If this were true, then, it would make sense that the topics chosen by husbands were more likely to activate dyadic effects.

Evidence for a weak link effect is noteworthy because this kind of dyadic effect may be very prevalent in close relationships and yet is rarely examined directly. One exception to this trend is work by Attridge, Berscheid, and Simpson (1995) showing that the least satisfied partner in dating couples was also the best predictor of the longitudinal stability of the relationship. The least committed partner, the least faithful partner, and the least forgiving partner may also affect their relationships over and above the main effects of each partner's commitment, fidelity, and willingness to forgive. By drawing attention to these possibilities, these results support Kenny's (1996) call to broaden the ways that dyadic effects are operationalized in research on couples.

Cognitive complexity: State or trait?

The implications of associations between the complexity of spouses' thoughts and the quality of their interactions depend in part on whether cognitive complexity is conceived as

an aspect of the spouse or as an aspect of the problem being considered. To the extent that complexity is similar across different content domains, then cognitive complexity may reflect an ability that remains relatively stable across situations. In contrast, to the extent that the complexity of a spouse's thoughts varies across domains, then complexity may reflect a spouse's experience of each domain more than it reflects a stable tendency. In domains outside of close relationships, the question of whether cognitive complexity is state-like or trait-like has received considerable attention. Originally, the construct was conceived as a relatively stable individual difference (Schroder, 1971) that is nonetheless capable of short-term changes in response to situational demands (Streufert & Streufert, 1978; Tetlock, 1985). The observation that the complexity of written and oral problem descriptions was significantly correlated, and the fact that complexity was unrelated to problem severity and problem topic, supports this view, suggesting that complexity may be more a function of the cognitive abilities of the spouse than of the problem being described.

Future research confirming this perspective would raise two additional questions. First, what are the factors that enhance or inhibit the complexity of spouses' thoughts about their problems? In research suggestive of an answer, Tetlock (1983) found that people who were made to feel accountable for their decisions tended to consider their choices in a more complex way. Similarly, the spouses who feel more responsible for maintaining the relationship, either because of high levels of commitment or few alternatives, may also be motivated toward greater complexity in their thoughts about marital issues. Second, where does the general ability to consider multiple perspectives on marital problems come from? In the past, research on cognitive complexity has been more successful in identifying traits that complexity is not correlated with than in identifying potential sources of complexity (Burleson, 1987). Recent work by Graham and Clark (2006), however, has found that the structure of partners' views of each other's positive and negative traits is associated with

self-esteem, such that those with higher self-esteem are more integrated. Further research along these lines is clearly a next step for research that seeks to identify distal causes of marital interaction behavior.

Strengths and limitations

A number of strengths of the current study heighten confidence in its results. First, the data addressed here were obtained from a relatively homogenous sample of newlywed couples. Thus, it is unlikely that the observed associations were confounded by uncontrolled sample characteristics, such as marital duration, ethnicity, or age. Second, both complexity and behavior were rated by independent groups of objective coders, eliminating the possibility that associations between the two resulted from common method variance or self-report biases. Third, unlike all prior research on cognitive complexity in couples, the current study examined the complexity of spouses' descriptions of specific problems within their own marriage. Other available measures of cognitive complexity (e.g., card sorting tasks and projective techniques) involve more contrived assessments that may be far removed from the way spouses actually think about their disagreements. Fourth, the current study obtained both oral and written assessments of spouses' thoughts, ensuring that the current results were not specific to a single method of assessing the construct.

Despite these strengths, several factors nevertheless may limit interpretations of the present findings. First, and most importantly, because all of the data were obtained in a correlational design, these results do not support strong causal statements about the effects of complexity on marital interactions. It is worth noting that these data did contain a temporal dimension, such that complexity was assessed prior to the marital interactions, and thus the idea that complexity affects behavior is perhaps more plausible than the idea that behavior affects complexity. Still, the current data cannot rule either interpretation out, and so all causal statements must be considered tentative. Second, whereas the homogeneity of the sample enhances the internal validity of this

study, it also prevents these results from being easily generalized to other groups. In particular, these associations may not replicate within samples that include very distressed couples. It is possible that, among partners who are already disappointed with the relationship, the structure of their beliefs may have little effect on the quality of the interaction. Cognitive complexity may be associated with the ability of spouses to resolve problems; without a preliminary motivation to do so, that ability may be irrelevant.

Implications for intervention

To date most cognitive behavioral interventions designed to alleviate or prevent marital distress have focused on the content of spouses' cognitions as a target of change (e.g., Baucom & Epstein, 1989). The current results suggest an alternative, and perhaps easier, approach. Rather than inviting spouses to change their beliefs or feelings about aspects of their relationship, it may be more effective to encourage spouses instead to organize their existing beliefs differently. If spouses were to adopt a more multifaceted and integrated perspective their marital difficulties, their skills at coping with and resolving those difficulties might naturally improve.

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Appendix

To evaluate the complexity of spouses' open-ended descriptions of marital problems, verbal and written materials were coded using a modified version of the *Conceptual/Integrative Complexity Scoring Manual* (Baker-Brown et al., 1992). This system was originally developed for use in coding the structure of individual ideas. In this study, the system was applied to descriptions of interpersonal problems. As a result, the system as it has been applied here differs in three ways from the system as it has been applied in other research. First, in many cases, differentiation means accepting as legitimate multiple perspectives on a problem, as opposed to multiple dimensions or ideas. Second, because the reference to interpersonal problems frequently implies multiple perspectives, the mean ratings of these materials were higher than the mean ratings of materials coded in other research. Third, whereas prior uses of the system have coded each thought unit, here the system was used to give a single rating to an entire description. Otherwise, the principles of the system described by Baker-Brown and colleagues (1992) have been preserved.

This system rates the level of differentiation and integration displayed in verbal and written material on a scale of 1 to 7. Within this system, problem descriptions receive a score of 1 when only one way of viewing the problem is acknowledged. For example:

> Her parents are very intrusive. They frequently meddle into our affairs, and have little respect for our privacy. For reasons I can't understand, my wife puts up with and even encourages it.

A score of 3 indicates differentiation without integration. A spouse receiving this score typically acknowledged at least two different viewpoints but did not recognize connections between these viewpoints. For example:

> We have a problem dealing with her family, who live nearby. She loves her parents and still feels very close to them, so she wants to see them a lot. I think that, at our

age, it is important for us to establish our own lives and get some independence from them.

A score of 5 indicates differentiation with some integration. Not only are multiple viewpoints acknowledged, but some relationship between viewpoints is articulated. For example:

> We both want the room to develop our own family, but she is very determined that her parents should be a part of that somehow. What we are trying to do is balance the new life that we are building together with the old life that my wife shared with her parents.

A score of 7 indicates material showing high differentiation and high integration. Not

only is a relationship between different viewpoints acknowledged, but the nature of that relationship is articulated clearly. For example,

> Every step we take towards developing ourselves as an independent couple affects our previous roles in our own families. For me, this is not such a big issue, since my family was never very close to begin with. For her, coming from a very close family, there is much more at stake. Resolving this tension will require redefining our relationship with her parents as we further define our relationship to each other.

Scores of 2, 4, and 6 represent transition points between these levels.