

## Thinking About Oneself and Others: The Relational-Interdependent Self-Construal and Social Cognition

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These studies focus on the relational-interdependent self-construal's association with implicit or indirect cognitive processes. In the relational-interdependent self-construal, the self is defined largely in terms of close relationships, resulting in variation in self-related processes. In Studies 1 and 2, the relational self-construal was associated with positive implicit evaluations of relational concepts and with tightly organized cognitive networks of relational terms. Studies 3 and 4 demonstrated that this self-construal was associated with memory for and implicit organization of relational information. In Studies 5 and 6, the relational self-construal was positively related to the degree to which participants described themselves and a friend similarly. The implications of the relational self-construal for theories of relationship cognition and for other self-related cognitive processes are discussed.

How individuals define themselves influences how they think, feel, and interact with others. Until recently, research by social-personality psychologists assumed that the self was composed of internal, private attributes and characteristics, and viewed self-representations as bounded and separated from representations of others (termed the *independent self-construal* by Markus & Kitayama, 1991). Recent cross-cultural research has shown that this self-structure does not adequately represent the ways that members of many collectivist cultures represent the self. In these cultures, the self is understood to be part of a larger whole and is largely defined in terms of connections to significant others and groups (termed the *interdependent self-construal* by Markus & Kitayama, 1991). Mounting research demonstrates that cultural differences in the structure of the self influence many cognitive, emotional, and motivational processes (Kim & Markus, 1999; Markus, Kitayama, & Heiman, 1996).

In a recent review, Cross and Madson (1997) suggested that insights gained from cross-cultural investigations of the self can help explain gender differences in behavior. Many gender theorists argue that women in this society are socialized to attend to and be concerned for relationships, and thus are more likely to view themselves as connected to or interdependent with others. Integrating the cross-cultural literature on differences in the structure

of the self with the existing literature on the function of the self, Cross and Madson detailed how gender differences in the self could account for many observed gender differences in psychological phenomenon. They hypothesized that women in Western cultures are more likely than men to define themselves in terms of close relationships, and that this self-construal will affect the self's function in many domains. For example, the person with an interdependent self-construal may be more likely than others to look to relationships as a source of self-esteem. Research on gender differences in self-esteem supports this hypothesis; interdependence is positively related to self-esteem for women, but is not related to self-esteem for men (Stein, Newcomb, & Bentler, 1992; see Cross & Madson, 1997, for a review).

The specific form of the interdependent self-construal developed by women and others in Western, individualist cultures will differ from the interdependent self-construal of members of collectivist cultures described by Markus and Kitayama (1991). In East Asian cultures such as Japan and China, the person is defined in terms of their position in groups, their social roles, and their responsibilities to others. Thus, the inclusion of important in-groups (*Sony employees*) and social roles (*eldest son*) marks the interdependent self-construal in these cultural contexts. In Western cultural contexts, in-groups are less important; group loyalties are voluntary and may change frequently (Triandis, 1989). Thus, in the Western cultural context, individuals are more likely to include individual relationships (e.g., mother, spouse, best friend) than particular in-groups in the self. Thus, we have termed this the *relational-interdependent self-construal*. These two forms of the interdependent self-construal share the process of including others in the self, but differ in the types of relationships that are included (in-groups and particular social roles vs. dyadic relationships).

Although women in North American culture will be more likely than men to construct a self-construal based on relationships with close others, there are also individual differences within the sexes on this dimension. Until recently, individual differences in this construct were not easily examined. Researchers had to resort to using either culture or gender as a proxy for differences in the self-construal (e.g., Gabriel & Gardner, 1999), or had to use

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measures that were developed for use with East Asian populations and were inappropriate for North American samples. These measures primarily focus on the importance of in-groups in the interdependent self-construal; many of them also include dimensions characteristic of collectivism, such as respect for authority, that are conceptually independent of the concept of the self as interdependent with others (see Cross, Bacon, & Morris, 2000, for more review of existing measures). Consequently, Cross et al. developed the Relational-Interdependent Self-Construal scale, which directly assesses the degree to which individuals define themselves in terms of close relationships.

With the development of this new measure, it is now possible to more critically examine the psychological consequences of variation in the self-structure. Although it is necessary to test the hypothesis that many gender differences can be accounted for by differences in the self, the goal of these studies is to examine the association between the relational self-construal and social cognition. These studies focus on the role of the relational self-construal in implicit associations, knowledge representation, memory, and similarity of descriptions of the self and others.

#### Structural Variation in the Self: The Relational-Interdependent Self-Construal

In the relational-interdependent self-construal, representations of significant others and relationships share the self-space with other attributes, such as abilities, traits, and goals. (We refer to this as the *relational self-construal* throughout the article.) Persons with a highly relational self-construal will think and act in ways that support and maintain this self-view. They will tend to emphasize their connectedness to others and behave in ways that promote and strengthen existing relationships.

Drawing upon existing research on the self and its influence on psychological processes, Cross and Madson (1997) articulated several ways that the relational self-construal may influence cognition, emotion, motivation, and social behavior. With respect to cognition, the person with a highly relational self-construal should pay attention to self-defining others and take the perspective of relationship partners. Because relationships are self-defining, information about relationships should be well organized in memory and easily accessed. This self-construal should also influence encoding, organization, and memory for others, particularly information about others' relationships. For these highly relational persons, protecting or enhancing self-esteem will require protecting and enhancing close relationships. Individuals with a highly relational self-construal should be more likely than others to develop and exhibit social behaviors that serve to support close relationships, such as self-disclosure and accurate decoding of others' nonverbal communication. This research begins to test these hypotheses, starting with an examination of the association of the relational self-construal with implicit or indirect cognitive processes.

This conceptualization of the relational self-construal is heir to earlier research that represented the self as a cognitive structure, especially research on self-schemas. Consistent with this earlier research, we have conceptualized the self as a cognitive structure that organizes information about the individual. These self-representations are linked to other representations in an associative memory network (Kihlstrom & Cantor, 1984). Most previous work

on the self as a cognitive structure assumed what has been termed an *independent self-construal*, in which the self is viewed as separate from others, and the defining features of the self are internal attributes, such as traits, values, goals, wishes, and fears (Markus & Kitayama, 1991). Some of these specific self-representations, called *self-schemas*, are especially important, well elaborated, and chronically activated (Markus, 1977). These self-schemas influence what an individual attends to and remembers, affective reactions to schema-relevant situations, and interpersonal perception (Markus & Wurf, 1987).

Although our work is clearly indebted to the discoveries made by self-schema researchers, the conception of the relational self-construal goes beyond the traitlike orientation to the self that characterized self-schema research. In the self-schema research, the effects of individual characteristics that were highly descriptive and important to the person were examined in isolation from other aspects of the self. In contrast, the concept of the relational self-construal is more global and foundational than the construct of the self-schema. The effects of defining oneself largely in terms of relationships are extensive and will direct the operation of other self-views. In other words, the relational self-construal is a higher order self-representation than self-schemas for particular characteristics, which are lower order elements in a hierarchical structure. This higher order self-construal will dictate how lower order self-schemas are defined and expressed. Consider the case of two individuals who have self-schemas for being competitive. One of these individuals has constructed a highly relational self-construal; the other has not. For the first individual the expression of competitiveness will be regulated by the overarching goal of maintaining self-defining relationships. Recognizing that being highly competitive with close others can cause jealousy or conflict in a relationship, this person may choose to display his or her competitiveness in interactions with others who are not close. The second individual may tend to ignore the relational aspects of competitive situations because consideration of the effects of this behavior on a relationship is not particularly important.

The relational self-construal also differs fundamentally from self-schemas in other ways. Persons with a highly relational self-construal may have self-schemas for relational attributes such as *caring* or *supportive of close others*, but will also have included in their self-construal representations of close others and of themselves in particular relationships. If close others are part of the self, then the representations of these others will be activated when self-representations are engaged. The activation of representations of close others will affect other cognitive and motivational processes. For example, the needs and wishes of these others are more likely to be considered when the individual is making important decisions (Cross et al., 2000). From the perspective of self-schema research, the activation of the caring self-schema would not necessarily invoke representations of close others and their perspectives when one is making important decisions. For a person who has self-schemas for relational traits, close relationships will be important, but not necessarily included in the self. Thus, this work on the relational self-construal is indebted to previous research on social-cognitive perspectives on the self, but focuses on variation in the global structure of the self rather than on specific self-schemas.

This research on the self-construal and cognition is also indebted to the innovative work of Aron and his colleagues on close

relationships and the inclusion of a specific relationship partner in the self (Aron, Aron, Tudor, & Nelson, 1991). They suggested that almost everyone includes particular close relationships in the self (such as relationships with a spouse or with one's mother), and they showed that including a relationship partner in the self influences many cognitive processes. Individuals who include a close relationship partner in the self are less likely to differentiate between the self and the other in allocating resources, tend to vicariously share the other's characteristics, and tend to think about the other much like they think about the self (Aron et al., 1991). Fundamentally, Aron et al. argued, relationship closeness may be characterized as a cognitive closeness that can then be examined by using the tools of social cognition research.

Aron et al.'s (1991) work on the consequences of including a relationship partner in the self has importantly informed this research on the relational self-construal, and there are both similarities and differences in these two theoretical perspectives. Like Aron and his colleagues we assume that including a relationship in the self creates an overlap between representations of the self and the other, which then influences subsequent information processing. Individuals who have constructed a highly relational self-construal will be more likely than others to habitually and thoroughly include others in their self-representations, however. Consequently, one would expect that individuals with a highly relational self-construal would describe their close relationships as more likely to be included in the self. In fact, Cross et al. (2000) found that scores on a measure of the relational self-construal were positively related to the extent that a close relationship was included in the self (in which the Aron, Aron, & Smollen, 1992, Inclusion of Other in the Self scale was used). Individuals with a highly relational self-construal may be more likely than others to engage in the processes described by Aron et al.

More important, the scope or focus of our research differs from that of Aron and his colleagues. Aron et al.'s (1991) work focuses on specific close relationships, on how closeness in a particular relationship may be represented as including the partner in the self, and on the consequences of this inclusion for romantic relationships. Our research, rather than focusing on a specific close relationship, focuses on understanding variation in the structure and function of the self and on the consequences of this variation for a wide array of cognitive, motivational, and relationship processes. The relational self-construal may be conceptualized as a global self-structure that is a source of motivation to develop close relationships with others. This global representation of the self as interdependent with others will influence cognitive, emotional, and motivation processes that are not necessarily linked to a specific close relationship.

Mental models of the self and relationships are also a key component of other research on relational cognition. Variation in the relational self-construal may be a potentially important component of relational schemas (Baldwin, 1992, 1997), which consist of the individual's self-schema, a schema for the other person, and an interpersonal script linking the two. Individual differences in the self-construal could influence the nature and function of interpersonal scripts (e.g., "If I care about another person, then I treat them as part of my self") as well as representations of the relationship partner. Similarly, representations of the self constitute one element of individuals' attachment styles (Bartholomew & Horowitz, 1991). Collins and Read (1994) suggested that working

models of attachment may include multiple components, including beliefs, attitudes, and expectations about the self and others, as well as attachment-related goals and needs, arranged in a global-to-specific hierarchy. The relational self-construal may represent a global view of the self that shapes specific mental models of relationships.

In summary, this perspective on the relational self-construal intersects with other viewpoints on the self, relationships, and cognition. By conceptualizing individual differences in a relational orientation in terms of the self as a cognitive structure, researchers are able to draw upon the vast literature on the role of the self in psychological phenomena. From this vantage point, one can articulate cognitive and motivational processes that underlie not only explicitly relational cognitions or behaviors in particular relationships, but also more general self-related processes, such as memory-related or affective processes. Just as understanding the nature of motivation has profited by breaking down the concept of self-esteem into component parts and processes (e.g., Campbell, 1986; Luhtanen & Crocker, 1992; Showers, 1992), theories that examine the self in relation to others may profit by intense scrutiny of one component of these models—self-construal.

### The Relational Self-Construal and Implicit Cognition

Although the relational self-construal is theoretically associated with many explicit aspects of cognition (such as decision making, perspective taking, and self-judgments), many important self-related processes occur implicitly and outside of awareness. If the relational self-construal is a higher order self-structure, then it should influence information processing without deliberate activation or conscious control. The methods used in these studies were selected to examine the extent to which variation in the relational self-construal was associated with a broad range of implicit or indirect processes, including implicit cognitive associations and networks, implicit memory, and implicit similarity of self and others.

In Studies 1 and 2, we examined cognitive associations and networks associated with individual differences in the relational self-construal. In general, information that is self-relevant is viewed positively (Greenwald & Banaji, 1995) and recognized more quickly than non-self-relevant information (Markus, 1977). When people have positive associations for relationships, they are more likely to have an accepting and open stance toward developing new relationships, remember information about relationships better, and attend to relationship information more thoroughly than others. Given that relationship-oriented terms are self-defining and important for individuals with highly relational self-construals, Study 1 tests the hypothesis that such terms will be evaluated more positively and quickly for high relationals than for lows.

Using the Greenwald, McGhee, and Schwartz (1998) Implicit Associations Test (IAT), we examined positive and negative associations with relationship-oriented terms for individuals who scored high versus low on a measure of the relational self-construal. One advantage of this approach is that it minimizes social desirability biases and potential demand effects inherent in explicit measures. It therefore reveals a relatively unbiased picture of individuals' evaluations of relational terms (Greenwald & Farnham, 2000). A positive association between the relational self-

construal and implicit positive associations for relational terms would demonstrate one way in which the self-construal can account for individual differences in attitudes toward and behavior in relationships.

When individuals define themselves in terms of a domain, they tend to pay close attention to domain-relevant stimuli and to develop elaborate knowledge structures for that domain (Markus & Wurf, 1987). Thus, individuals who define themselves relationally are expected to have well-developed cognitive-associative networks for the domain of relationships (Collins & Loftus, 1975). Cognitive associations among closely related constructs result in spreading activation, such that once a node in the network is accessed or stimulated, activation spreads to other constructs in the network. Activation of dense, well-organized cognitive networks for relational terms will prime other constructs associated with relationships and promote memory for relational information. In Study 2, we examined the hypothesis that for individuals with a highly relational self-construal, relationship-oriented constructs stored in memory would be tightly linked together. Participants in the study rated the similarity between relationship terms and terms unassociated with relationships. Using the Knowledge Network Organizing Tool based on the Pathfinder algorithm, we constructed spatial network models from these similarity data (see Schvaneveldt, 1990; Schvaneveldt, Durso, & Dearholt, 1989). Pathfinder models have been used to examine a wide variety of knowledge structures, including expert versus novice representations of computer programming (Cooke & Schvaneveldt, 1988), cognitive associations between aggressive and ambiguous terms (Bushman, 1996), and statistical reasoning (Jones & Cooke, 1990). Using these spatial models, we were able to compare the proportions of links between relationship and nonrelationship terms separately for high- and low-relational participants, and thereby derive a "picture" of the associative networks of the participants.

If individuals with a highly relational self-construal have constructed a densely interconnected network of relational concepts that is connected to the self, then they should be more likely to attend to and remember relational information about others. When meeting new people, details about their background, interests, profession, characteristics, and relationships are potential elements of the information acquired. The person who defines him- or herself in terms of relationships is expected to notice and remember other people's statements about their relationships. Study 3 tested this hypothesis by using a memory task in which participants were exposed to relational and nonrelational information about a target person and were subsequently asked to recall the information.

An individual's self-views also direct the organization of information in memory (Fong & Markus, 1982; Markus, 1977). Perceivers spontaneously organize information about others in terms of social categories such as race, gender, and age (Brewer, Dull, & Lui, 1981). Sedikides, Olsen, and Reis (1993) found that relationships also serve as an important category for implicitly organizing information about others. This tendency to organize information in terms of relationships may be especially strong among individuals with a highly relational self-construal. The information that the targets are in a relationship may grab the attention of those with a highly relational self-construal, leading to deeper processing of information about the targets as a unit, rather than thinking of them as individuals. As a result, information about the two targets may cluster together in memory. In Study 4 we used the paradigm

designed by Sedikides et al. to examine the role of the relational self-construal in this process.

Finally, the relational self-construal is hypothesized to influence a different type of clustering in memory—the extent to which individuals describe themselves and close others similarly. With this hypothesis, we move from relatively "cold" cognitive processes to "hot" or motivated cognition. As others have described, many components of cognition are influenced by motivational factors (Kunda, 1990). In particular, aspects of self-directed information processing serve motivational goals, such as the goal of obtaining support and belonging (Baumeister & Leary, 1995), the goal of maintaining a sense of consistency (Swann, 1990), and the goal of enhancing the self or maintaining self-esteem (e.g., Taylor & Brown, 1988; Tesser, 1988). In Studies 5 and 6, we assumed that the goal of establishing a sense of closeness to a friend would influence the degree to which individuals describe themselves and their relationship partners similarly.

Individuals with a highly relational self-construal may be especially motivated to view themselves and close others similarly. Representing the self and a close other as alike can decrease the cognitive distance between oneself and the other and thus enhance a sense of belonging in the relationship (Mikulincer, Orbach, & Iavnieli, 1998). Representing the self and others differently facilitates differentiation from others and a sense of uniqueness and individuality. Perceiving another person as resembling oneself may also promote the belief that one can better anticipate and predict the other person's behavior, resulting in greater relationship harmony. Thus, individuals who define themselves in terms of close others may notice and remember information that depicts the friend as similar to the self or may construct self-views that depict the self as similar to the friend.

These studies used an indirect assessment of similarity. We asked participants in Studies 5 and 6 to describe themselves and a close other, and we calculated similarity from these descriptions. We also compared participants' descriptions of themselves with their descriptions of other college students at their university. Because individuals who define themselves relationally are motivated to protect and maintain close relationships, they were expected to perceive more similarity between themselves and a close friend than between themselves and a large and diverse in-group. Thus, we predicted that scores on a measure of the relational self-construal would be positively related to similarity with a close friend, but not related to similarity with other college students at one's university. We examined this hypothesis in Study 5, in which participants rated themselves and the other targets on 60 trait attributes. Study 6 replicated and extended the findings of Study 5 by having participants evaluate themselves and the two targets on traits, abilities, and values.

### Study 1: The Relational Self-Construal and Implicit Associations

Given that individuals tend to evaluate information associated with the self positively, we hypothesized that individuals who defined themselves in terms of close relationships would have positive associations for relationship-oriented terms. To test this hypothesis, we used the IAT (Greenwald et al., 1998), a five-step reaction time procedure that assesses the association between target categories and evaluative categories. In this study, the target

categories were *relationship* versus *individual*, and the evaluative categories were *pleasant* versus *unpleasant*. In brief, this task assesses participants' speed to respond when responses to the target and evaluative categories are combined (this is explained further in the *Method* section). If relationship-oriented terms are viewed positively by the participant, then responses should be quicker when relationship terms are paired with pleasant terms than when relationship terms are paired with unpleasant terms (and the reverse for the terms in the individual category). The difference in response time of these two tasks represents the measure of implicit association. Thus, we hypothesized that individuals with a highly relational self-construal would have higher IAT scores than lows.

## Method

### Participants

The Relational-Interdependent Self-Construal (RISC; Cross et al., 2000) scale was first administered in a large data collection session that included more than 1,000 students enrolled in introductory psychology courses. Participants who scored in the top and bottom quartile were recruited for the laboratory session.<sup>1</sup> Sixty-one participants completed the study: 32 in the top quartile of the RISC scale (69% women) and 29 in the bottom quartile (34% women). The RISC scale was administered again at the end of the laboratory session. Overall, the scores on the RISC scale demonstrated good consistency,  $r(61) = .71, p < .01$ , but a total of 16 participants changed more than a full scale point over the intervening interval of 8 to 12 weeks (i.e., from 4 to 5 on a 1–7 point scale). These participants (1 woman and 5 men in the high-RISC group and 3 women and 7 men in the low-RISC group) were dropped from all subsequent analyses, leaving an effective sample size of 45 (81% women in the high-RISC group and 37% women in the low-RISC group).

### Measures

The RISC scale (Cross et al., 2000) was used to assess the relational self-construal. This measure correlates moderately strongly with other measures of empathy, communal orientation, and interdependence, and does not correlate with measures of independence or instrumentality. It is generally unrelated to self-esteem and other measures of well-being, but it correlates positively with measures of commitment to relationships, self-disclosure to others, and social support. Test–retest reliability ranges from .63 to .73 over a 2-month period. In these six studies, participants rated items on a 7-point scale with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha across the studies ranged from .84 to .94.

Cross et al. (2000) reported moderate gender differences in RISC scale scores across eight studies ( $d$ s ranged from  $-.24$  to  $-.57$ ). There were significant gender differences in the RISC scale in four of the six studies described here, with effect sizes ( $d$ ) ranging from  $-.34$  (Study 5) to  $-.95$  (Study 1). For Study 2, the gender difference was not significant,  $t(96) = -1.34, p > .15, d = -.31$ , nor was it significant in Study 3,  $t(140) = -1.50, p < .15, d = -.27$ . There were no significant interactions with gender in these studies, thus gender is not discussed further.

### Procedure

Upon arrival at the laboratory, participants were seated in individual cubicles and were asked to provide informed consent. They then completed the implicit associations tasks. In the first step (initial target discrimination), participants were presented with the relationship target words (*together, us, mutual, commitment, and share*) and the individual target words

(*self, separate, independent, uncommitted, and one*).<sup>2</sup> They were then asked to judge whether each word fit the relationship category (indicated by pressing the *S* key with the left hand) or the individual category (indicated by pressing the *K* key with the right hand). In the second step (evaluative discrimination), participants decided if each evaluative word was pleasant (*love, peace, happy, paradise, and heaven*; assigned to the *S* key) or unpleasant (*abuse, murder, cancer, poison, and hatred*; assigned to the *K* key). In the third step (first combined task), participants pressed the *S* key if the word presented on the screen belonged to the relationship or pleasant categories and the *K* key if the word belonged to the individual or unpleasant categories. In the fourth step (reversed target discrimination), only the words in the target category were presented, and the keys that the participants pressed were reversed for the terms so that participants pressed the *S* key if the word was from the individual category and the *K* key if the word was from the relationship category. In the fifth step (reversed combined task), participants pressed the *S* key if the word belonged to the individual or pleasant categories and the *K* key if the word belonged to the relationship or unpleasant categories. To review, the five steps were (a) initial target discrimination, (b) evaluative discrimination, (c) first combined task, (d) reversed target discrimination, and (e) reversed combined task.

As in Greenwald et al. (1998), there were 100 trials in each step. In the first, second, and fourth steps each word was repeated 10 times. In the third and fifth steps, each word was repeated 5 times. The order of words within each step was randomized for each participant. The intertrial interval was 250 ms. When participants incorrectly classified a target word, the computer made a beep and left the computer screen blank for 500 ms before moving to the next trial.

Reaction times were recorded for every trial of every step, but the first 50 trials of the first, second, and fourth steps were practice trials and were not used in computing average reaction times. Because the latencies of the first 2 trials in a block are typically longer than average, these were eliminated from the analyses (as in the Greenwald et al., 1998, studies). To reduce the effects of temporary inattention and anticipations, we recoded latencies so that times above 3,000 ms became 3,000 ms and times below 300 ms became 300 ms. Trials in which the participants classified the words into the incorrect categories were eliminated from analyses. Finally, the reaction times of each trial were log transformed and averaged by step, as suggested by Greenwald et al. The IAT effect is computed by subtracting the average latency of the third step (relationship and pleasant terms share the same response key) from the average latency of the fifth step (relationship and unpleasant terms share the same response key). The larger the IAT effect, the more positively the individual perceived relationship words relative to individual words.

After performing the IAT procedure, participants completed the RISC scale again and the Rosenberg (1965) self-esteem scale. They were then thanked, debriefed, and dismissed.

## Results and Discussion

As hypothesized, the participants who scored higher on the RISC scale also had higher IAT scores ( $M = 0.19, SD = 0.12$ ) than did the participants who scored low on the RISC scale ( $M = 0.09, SD = 0.17$ ),  $t(43) = -2.43, p < .02, d = 0.69$ . Figure 1

<sup>1</sup> In general, women score higher on the RISC scale than do men (Cross et al., 2000). In the large sample from which these participants were drawn, the top quartile was composed of 71% women and the bottom quartile was 35% women.

<sup>2</sup> Greenwald et al. (1998) found that five words per target category were sufficient to find significant differences between categories, and thus five words per category were used.

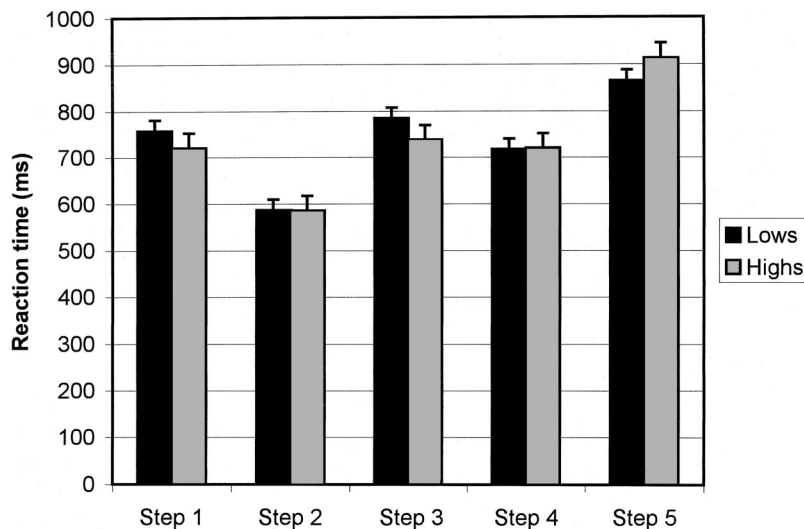


Figure 1. Mean reaction time for each step of the Implicit Associations Test procedure separately for highs and lows on the Relational-Interdependent Self-Conceptual scale (Study 1). Error bars represent standard error of the mean.

presents the differences in response times at each step of the procedure for highs and lows on the RISC scale.

This result shows that individuals who define themselves in terms of close relationships are more likely than others to have positive associations with relationship terms. One might, however, wonder whether this pattern is a function of differences in self-esteem. Do high scorers on the RISC scale demonstrate this pattern because they evaluate themselves negatively, and thus respond quickly to the pairing of individual, nonrelational words (such as *self*) with negative terms? Additional analyses suggest that the answer is no. High scorers on the RISC scale had scores on the Rosenberg (1965) self-esteem scale ( $M = 5.86$ ,  $SD = 0.90$ ) that were similar to those of the low scorers on the RISC scale ( $M = 6.00$ ,  $SD = 0.79$ ),  $t(43) < 1.0$ , *ns*. The IAT effect was also not associated with self-esteem ( $r = .00$ ). Thus, the difference in IAT scores for highs and lows on the RISC scale was not attributable to different levels of self-esteem. In addition, we suspect that because of the context of the task, words such as *self* and *one* were framed in contrast to the words that implied relationships (e.g., *together*, *us*), implying the condition of being alone or the absence of a relationship rather than an evaluation of one's worthiness as an individual. In summary, differences in self-esteem do not account for these differences in positive and negative associations with relational terms. In Study 2, we extended this focus on cognitive associations to examine individuals' networks of connections among terms associated with relationships.

### Study 2: Cognitive Networks Study

Persons with a highly relational self-construal are expected to attend to and be concerned about relationships, developing a sort of expertise in this domain. As a result, they are hypothesized to have dense, tightly linked networks of associations for relational terms, which will in turn influence other aspects of information processing. In this study, participants rated the similarity of words associated with relationships (e.g., *intimate*) and nonrelational

words (e.g., *alert*). The mean similarity ratings for different types of pairs of words (e.g., relational terms with relational terms) were compared for participants with high versus low scores on the relational self-construal measure. In addition, the cognitive networks of high and low scorers were compared by using the Knowledge Network Organizing Tool, which is based on the Pathfinder algorithm (Schvaneveldt, 1990). Pathfinder computes distances between all the constructs in a network and places links between constructs, or nodes, if the distance between them is the shortest distance among the set of alternatives. By constructing associative networks for people who scored either high or low on the RISC scale, it was possible to examine differences in the organization of relationship-oriented and non-relationship-oriented terms. We hypothesized that people who scored high on the RISC scale would tend to judge relationship-oriented terms as more similar to each other and have a greater proportion of links between relationship-oriented terms in their associative networks than would people who scored low on the RISC scale.

### Method

#### Participants

Participants were 146 college students who participated in exchange for course credit. Seven noncitizens were excluded from the analyses. Participants were split into three groups based on RISC scale scores (the high, middle, and low thirds), but only the high and low groups were used to conduct Pathfinder analyses (see the *Materials* section). The final sample of participants used for analysis included 50 participants in the high group (84% women) and 48 participants in the low group (65% women). RISC scale scores were significantly higher for the high group ( $M = 6.51$ ) than for the low group ( $M = 4.55$ ),  $t(96) = 20.68$ ,  $p < .001$ ,  $d = 2.13$ .

#### Materials

Stimulus words were selected on the basis of pretesting on a separate group of participants ( $N = 30$ ). Participants rated the extent to which each

of the 146 words was associated with relationships on a 5-point Likert-type scale with responses ranging from 1 (*not at all associated with relationships*) to 5 (*strongly associated with relationships*). Relational words selected for the study were judged to be more strongly associated with relationships ( $M = 4.01$ ) than were nonrelational words ( $M = 2.72$ ),  $t(29) = 9.82, p < .001$ . These words were assigned to either the positive category or the negative category by using Anderson's (1968) published rankings of 555 words based on likability ratings. The average ranking of the positive terms used in this study was 500, whereas the average ranking of the negative terms was 91. The four categories of words were (a) positive relational (*understanding, intimate, unselfish, cooperative, and warm*), (b) negative relational (*insincere, thoughtless, unkind, untrustworthy, and unforgiving*), (c) positive nonrelational (*alert, efficient, resourceful, clever, and self-disciplined*), and (d) negative nonrelational (*maladjusted, incompetent, loud-mouthed, unethical, and offensive*).

### Procedure

Participants volunteered for a study on "cognitive associations." Once in the laboratory, participants were seated in individual cubicles and were asked to provide informed consent. Participants were presented with pairs of words (e.g., intimate-alert) on a computer screen and were asked to rate how "similar, associated, or related" each of the pairs was. They rated each pair on a 7-point Likert-type scale with responses ranging from 1 (*not at all similar*) to 7 (*very similar*). Participants rated a total of 190 pairs (20 words, each word paired with each other word). Order of the words within each pair was randomized, and this order was the same for all participants. The presentation order of the pairs themselves was randomized for each participant. After performing the similarity ratings, participants completed the RISC scale and other background measures (e.g., age, gender) on the computer. Finally, participants were debriefed, thanked, and dismissed.

## Results and Discussion

### The Self-Construal and Similarity Ratings

The first analyses examined differences in similarity ratings of various word pairs for high and low scorers on the RISC scale. Mean similarity ratings were constructed for each type of word pairing. In the current study we were most interested in positive relational words paired with positive relational words (PRPR), negative relational words paired with negative relational words (NRNR), positive relational words paired with negative relational words (PRNR), positive relational words paired with all nonrelational words (PRAN), and negative relational words paired with all nonrelational words (NRAN).

The results show that those who scored high on the RISC scale perceived more similarity than lows for PRPR,  $t(96) = 2.84, p < .01, d = 0.55$ ; NRNR,  $t(96) = 3.15, p < .01, d = 0.61$ ; and PRAN,  $t(96) = 2.69, p < .01, d = 0.53$ ; but not PRNR,  $t(96) = -0.56, p > .50, d = -0.11$ ; or NRAN,  $t(96) = 1.51, p > .10, d = 0.30$ . (Means and standard errors associated with these  $t$  tests are displayed in Figure 2.) People who scored high on the RISC scale tended to see a tighter organization of positive and negative relational terms with each other, and also tended to see positive aspects of relationships as more associated with nonrelationship terms than did low scorers on the RISC scale.

### Associative Networks in Pathfinder

Two sets of network representations based on the Pathfinder algorithm were constructed with all words: one for people who

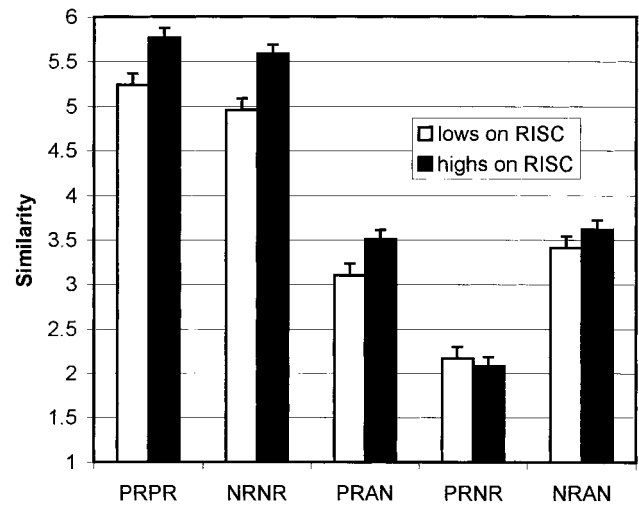


Figure 2. Mean similarity ratings for highs and lows on the relational-interdependent self-construal (RISC) scale (Study 2). Error bars represent standard error of the mean. PRPR = positive relational terms with positive relational terms; NRNR = negative relational terms with negative relational terms; PRAN = positive relational terms with all nonrelational terms; PRNR = positive relational terms with negative relational terms; NRAN = nonrelational terms with all nonrelational terms.

scored high on the RISC scale and one for those who scored low on the RISC scale. Differences in the networks constructed for highs and lows on the RISC scale can be compared by examining the proportions of different types of links. For example, if high relationals have tight networks of associations for relationships, they should have a higher proportion of relational-relational links than lows. Accordingly, we compared highs and lows on the RISC scale on the proportions of relational-relational links, relational-nonrelational links, and nonrelational-nonrelational links (collapsing across positive and negative words). For each set of networks, the parameter  $q$ , which determines the maximum number of links, was manipulated from 2 to 19, resulting in slightly different network representations. Summaries of the proportions of link types for those who scored high and low on the RISC scale by  $q$  parameters are displayed in Table 1.

The Pathfinder analyses revealed that high scorers on the RISC scale tended to have higher proportions of relational-relational links, indicating that they clustered relational words more in their cognitive networks than did low scorers on the RISC scale. Low scorers on the RISC scale, in contrast, tended to have more relational-nonrelational links than high scorers, indicating less perceived separation between relational and nonrelational words. This pattern suggests that, relative to those who score high on the RISC scale, people who score low on the RISC scale tend not to differentiate between relational and nonrelational concepts.

In summary, people who score high on the RISC scale are more likely to have a tightly organized network of relationship-oriented concepts, which may facilitate information processing about relationships. For example, if the cognitive network for relationships is activated when perceiving another person, the perceiver may pay more attention to and have better memory for relational information about the target. In Study 3, we examined the association

Table 1  
*Proportions of Links for Participants With High Versus Low RISC Scale Scores From Pathfinder (Study 2)*

<i>q</i> parameter/type of word pair	RISC scale score		<i>h</i>
	High	Low	
$q^2$			
RelRel	.43	.15	.63*
NonNon	.33	.33	.00
RelNon	.24	.52	-.59*
$q^3-q^{19}$			
RelRel	.40	.20	.44*
NonNon	.35	.25	.22
RelNon	.25	.55	-.62*

*Note.* RISC = relational-interdependent self-construal; RelRel = relational-relational link; NonNon = nonrelational-nonrelational link; RelNon = relational-nonrelational link; *h* = Cohen's (1988) effect size for the difference between two independent proportions. According to Cohen, *h* = .2 is a small effect, .5 is a medium effect, and .8 is a large effect.  
 \*  $p < .05$ .

between the self-construal and memory for relational versus nonrelational information about a target individual.

### Study 3: Memory for Relational Versus Nonrelational Information

This study tested the hypothesis that individuals who define themselves in terms of relationships would tend to selectively perceive and remember information pertaining to others' relationships. This selective memory has been viewed in past research as evidence of self-relevant processing (Higgins & Tykocinski, 1992). In this task, participants were exposed to a series of statements about another student's experiences and behaviors in the course of a typical day. Half of the statements described a relationship or a social interaction and half were nonrelational. If the self-construal directs information processing, then the participants with a highly relational self-construal should remember the relational statements better than the low relational participants, but there should be no differences in memory for the nonrelational information.

#### Method

##### Participants

Participants were 152 undergraduates who participated in exchange for course credit. Twenty-four noncitizens were excluded from the analyses, leaving 128 participants (63% women).

##### Materials and Procedure

Upon arrival at the laboratory, participants were seated in individual cubicles and were asked to provide informed consent. Participants were then instructed to engage in an impression formation task, in which they read 40 statements about a student named Chris. Chris was described as male for the men in the study and as female for the women; the behaviors were identical for both groups. The statements were presented in random order by computer, and participants were given 6 s to read each statement. Participants were instructed to pay close attention to each statement, so as to form an accurate impression of Chris. The set of statements about Chris

included 20 relational statements (e.g., "Chris talked with some classmates in the hall after class") and 20 nonrelational statements (e.g., "Chris had some cereal and a banana for breakfast"). The distinction between relational and nonrelational statements was based on whether the statement indicated anything about another person that Chris came in contact with. If the statement did not mention another person, it was coded as nonrelational. In a pilot study, a separate sample of students ( $N = 22$ ) rated each statement on the dimensions of gender typicality (1 [*female*] to 7 [*male*]), student typicality (1 [*ordinary*] to 7 [*unusual*]), and valence (1 [*negative*] to 7 [*positive*]) in which 7-point bipolar scales were used. The statements used in the impression-formation task were gender neutral ( $M = 3.9$ ,  $SD = 0.31$ ), typical of college students ( $M = 2.5$ ,  $SD = 0.73$ ), and mostly positive ( $M = 5.36$ ,  $SD = 0.61$ ).

After they read the statements, participants completed an 8-min filler task, and were then given a surprise free-recall task, in which they were asked to list as many of Chris's actions as they could remember. They were given 8 min to complete the recall task. Finally, they completed the RISC scale, which was embedded in a questionnaire with other filler items.

### Results and Discussion

Participants' answers to the recall task were coded as either relational or nonrelational by research assistants who were unaware of the participants' RISC scale scores; a tally was obtained for each category. For both categories, interrater reliability was .98. As predicted, participants who scored higher on the relational self-construal measure recalled more relational items than did those who scored lower ( $r = .20$ ,  $p < .05$ ), but there was no relation between the RISC scale and recall of nonrelational items ( $r = .03$ , *ns*).

These results support the prediction that people who scored high on relational interdependence are more likely to attend to and remember information about others' relationships than those who scored low. Study 4 examined further the influence of the relational self-construal on the use of relationships to spontaneously organize information in memory.

### Study 4: Relationships as an Organization Tool

Recent research shows that individuals tend to implicitly organize information in memory around relationships (Sedikides et al., 1993). Because relationships are especially important to individuals with a highly relational self-construal, we hypothesized that this tendency would be stronger among them than among individuals with a low relational self-construal. This study replicates the essential aspects of Sedikides et al. Participants viewed a series of statements about a set of target persons, and were told that either the targets were married to other targets (married condition) or the targets were married, without naming the spouse (control condition). We predicted that people with highly relational self-construals would tend to cluster information in memory in the married, but not in the control, condition more than those with low relational self-construals.

Married couples are perhaps the most interdependent social units in Western culture. Sedikides et al. (1993) found that weaker relationships (e.g., acquaintances and football team fans) were less likely to organize information than was the marriage relationship. In this study we explored sibling relationships as an additional relationship category. We reasoned that siblings might be a more relevant relationship for these participants because the vast majority of students have siblings. Because sibling relationships are not

always close, however, the impact of sibling information may not be as strong as that of a more interdependent relationship, such as marriage. We expected the effects of the sibling condition would be intermediate between those of the marriage condition and the control condition because sibling relationships may be thought of as weaker and less interdependent relationships than marriage.

Sedikides et al. (1993) found no condition effects (married vs. control) on the total amount of information recalled or recognized. However, individuals who define themselves in terms of close relationships may be more attentive to social information when relationships are explicitly involved, as in the married condition, and perhaps to a lesser extent in the sibling condition. In fact, the tendency to cluster information in memory by relationships may facilitate overall memory. When information about a couple is primed, information about both individuals may be more readily accessed than when information about an individual is primed. Thus, we examined the extent to which clustering of information in terms of a relationship mediated the relations between the self-construal and total memory.

### Method

#### Participants

Two-hundred and eight participants (72% women) from introductory psychology courses completed the study in exchange for extra course credit.<sup>3</sup> We reasoned that people who are married might be more likely to cluster information according to a marital relationship than people who are not married. Therefore, the sign-up materials for the study asked that only single students volunteer. During the experimental session, all participants indicated that they were single.

#### Procedure

The RISC scale was administered at a large data collection session between 1 and 6 weeks prior to participation in the laboratory phase of the experiment. Only students who participated in the large data collection session were allowed to participate in the laboratory phase. On arrival at the laboratory, the participants were seated in individual cubicles, were asked to provide informed consent, and were given instructions by computer for the memory task. They were informed that they were participating in a study of person perception and that they would be presented with information concerning several target persons. Participants were told that they were to form an impression of each target and remember as much about him or her as possible.

The participants were randomly assigned to conditions. As in Sedikides et al. (1993), the stimulus materials consisted of five information items for 8 persons: 4 women and 4 men. Information for each target was presented by computer on a single screen, with the target's name on the top of the screen and the five items below it. The first information item of each target screen presented the condition manipulation. Participants in the married condition were told that each target was married and were given the name of his or her spouse (who was one of the other targets). Participants in the sibling condition were told that each target was the brother or sister of one of the other targets (and were given his or her name). The control participants were told that each person was married, but were not given the spouse's name. The remaining four information items for each target were held constant. In general, these items described the target's interests ("Enjoys watching tennis"), characteristics ("Is tall"), and experiences ("Has never traveled outside of Iowa").

The original 32 information items used by Sedikides et al. (1993), and an additional 40 information items that we generated, were pilot tested on a separate group of participants ( $N = 24$ ). These participants were provided

with descriptions of the independent and interdependent self-construals and were asked to rate the extent to which each item might describe a person who was independent or interdependent (with responses on a scale ranging from 1 [*very independent*] to 7 [*very interdependent*]). Because items rated as *very interdependent* might be likely to be remembered especially well by those with highly relational self-construals, items with means closest to 4, the midpoint of the scale, were used in the study. Thirty-two items were selected, 28 of which also appeared in the Sedikides et al. (1993) studies. The selected information items are displayed in the Appendix.

As in Sedikides et al. (1993), the eight target screens were presented three times: once each in three blocks. In the first block, each screen was presented for 25 s; in the second block, each screen was presented for 15 s; and in the third block, each screen was presented for 5 s. The second and third blocks followed immediately after the first and second blocks, respectively.<sup>4</sup> The order of screens was randomized and the same order was presented to all participants, as in the Sedikides et al. Experiment 1.

After the presentation of target information, participants worked on a distracter task for 2.5 min. As in the Sedikides et al. (1993) study, the experimenter then presented the participants with a booklet that contained 32 blank quarter-pages. The participants listed as many of the information items as they could remember, in any order. They were asked, however, to place only one information item on each page, not to write down the names of the targets, and not to look back at items they had already written down. Participants took as long as they wished to complete this free-recall task.

Participants were then given a scrambled list of the eight names and the 32 information items and were asked to match the information items with the names. Participants again had as long as they wished to complete this matching task. When they finished the matching task, they were thanked, thoroughly debriefed, and dismissed.

#### Clustering Indices

To measure organization in memory, we computed two dependent measures: one from the free-recall task and one from the matching task. To assess the extent of clustering in the free-recall task, we calculated a clustering index for each participant that measured the extent to which participants organized information around relationships. The adjusted ratio of clustering (ARC) index is regarded as the most problem-free measure of clustering in free recall (Murphy, 1979) and is unaffected by factors such as the number of categories recalled, the distribution of the total items recalled across categories, and the total number of items recalled. In

<sup>3</sup> To reduce the effect of outliers, we eliminated responses that were more than 2.7 standard deviations from the mean. Given this criterion, data from 4 participants (1 man and 1 woman in the control condition and 2 women in the married condition) were excluded from the analyses.

<sup>4</sup> In the Sedikides et al. (1993) studies, the authors manipulated the number of times participants saw each target's screen. The difference between the married and control conditions for within-couple confusions was larger when each target's information was presented once, but smaller when each target's screen was presented three times. In contrast, the difference between the married and control conditions for adjusted ratio of clustering (ARC) scores was smaller when each target's screen was presented once, and larger when each target's screen was presented three times. In short, there is a trade-off between within-couple confusions and ARC scores, such that increasing the number of times each target's screen is presented increases the differences for ARC scores but decreases the differences for within-couple confusions. Because ARC scores have a longer history of use in psychology and are a better index of clustering, the choice was made to present each target's screen three times. This served to help magnify differences in ARC scores, but minimized differences for within-couple confusions.

specific, the ARC score “represents the ratio of obtained category repetitions above chance to the total possible category repetitions above chance” (Roenker, Thompson, & Brown, 1971, p. 46). In the context of this experiment, the couple was used as the relevant category. For example, if Mary and Fred were a married couple (or sibling pair), an information item about Fred followed by an information item about Mary (or Fred) would constitute a repetition. An information item about Jane, followed by an information item about Mary, would not. It is assumed that when repetitions are made within a category (e.g., a couple), there is some underlying cognitive organization.

An alternative measure of organization in memory can be obtained by examining the mistakes that participants made in the matching task. Within-couple confusions occur when an information item that belongs to one member of a couple is matched with the other member’s name. Such mistakes tend to indicate that the two couple members are associated in memory. Again, we predicted that participants with high RISC scale scores would tend to make more within-couple confusions than those with low scores, but only in the married and sibling conditions.

### Results

We hypothesized that RISC scale scores would be most strongly associated with clustering indices in the married condition. We also expected a moderate relation between RISC scale scores and clustering indices in the sibling condition, but no relation between RISC scale scores and clustering indices in the control condition. To test these hypotheses, we performed a series of hierarchical regressions for each dependent variable. In the first step, a contrast coding variable (coded control condition =  $-1$ , sibling condition =  $0$ , and married condition =  $1$ ) and RISC scale scores (centered prior to analyses) were entered, followed in the second step by the interaction term. The correlations among the variables by condition are presented in Table 2, separately by condition. The hierarchical regression results are presented in Table 3.

#### Clustering of Information in Free Recall

The equation examining the effects of the self-construal and condition on clustering revealed a significant main effect for the relational self-construal,  $t(201) = 2.19, p < .03$ , and a significant interaction between the RISC scale scores and contrast-coded condition,  $t(200) = 2.35, p < .02$ . The main effect for condition was not significant,  $t(201) = -0.74, p > .46$  (see Table 3).

Examining correlations separately by condition revealed the predicted pattern, displayed in Figure 3. In the married condition, there was a positive relation between the relational self-construal and ARC scores,  $r(69) = .33, p < .01$ . In the sibling condition, there was a small relation between the relational self-construal and ARC scores,  $r(71) = .12, p < .31$ . In the control condition, there was no relation between the relational self-construal and ARC scores,  $r(64) = -.03, p = .84$ . Additional regression analyses revealed that the slope of the line for the married condition was significantly different than the slope for the control condition,  $t(132) = 2.24, p < .03$ , and marginally different than the slope for the sibling condition,  $t(139) = 1.71, p = .09$ . The slopes of the lines for the sibling and control conditions were not significantly different from each other.

#### Confusions in Matching Information

The equation examining the effects of the self-construal and condition on within-couple confusions revealed no significant

main effects or interaction (see Table 3).<sup>5</sup> Thus, the number of within-couple confusions did not differ either by condition or by level of the relational self-construal.

#### Overall Memory

To test for differences in overall recall on the free-recall task and total number of correctly matched items from the matching task, we performed two hierarchical regressions. For the free-recall task, the total number of correctly recalled information items was regressed on RISC scale scores, contrast-coded conditions, and their interaction. There were no significant predictors of the total number of correctly recalled items (all  $t$ s  $< 1$ ).

Next, the total number of correctly matched information items was regressed on the same predictors. There were no significant main effects, but there was a significant interaction between the contrast-coded condition and the RISC scale scores,  $t(200) = 2.34, p < .03$  (see Figure 4). There was a positive association between the RISC scale and the total matched in the married condition,  $r(69) = .24, p < .05$ , no association in the sibling condition,  $r(71) = .07, p = .58$ , and a small negative association in the control condition,  $r(64) = -.16, p = .21$ . Additional regression analyses revealed that the slope of the line for the married condition was significantly different than the slope for the control condition,  $t(132) = 2.34, p < .03$ , but was not significantly different from the sibling condition,  $t(139) = 1.21, p > .20$ . The slopes of the lines for the sibling and control conditions were not significantly different from each other.

To test the hypothesis that organizing information in terms of relationships mediated the association between the RISC scale and the number of correct matches in the married condition, we utilized the procedure outlined by Baron and Kenny (1986). According to these authors, three conditions must be met to provide evidence of mediation. First, the independent variable (RISC scale scores) must predict the dependent variable (total number of correctly matched items), as was demonstrated earlier ( $r = .24, p < .05$ ). Second, the independent variable must predict the mediator (ARC scores), as was demonstrated earlier ( $r = .33, p < .01$ ). Third, the mediator must predict the dependent variable with the independent variable controlled. For mediation to be demonstrated, the independent variable must no longer significantly predict the dependent variable in this final step. To test the third step, we regressed the total number of correctly matched items onto ARC scores and RISC scale scores. The results indicated that the path from the RISC scale to the number of correctly matched items became nonsignificant ( $\beta = .12, p = .32$ ), and ARC scores significantly predicted the number matched ( $\beta = .39, p < .01$ ). Thus, ARC scores mediated the relation between the RISC scale scores and the total number of correctly matched items in the married condition.

#### Discussion

As hypothesized, the couple as a unit served as a useful memory tool for the individuals who tended to define themselves in terms

<sup>5</sup> Because the total number of within-couple confusions was highly positively skewed, the natural log and the reciprocal of the total number of within-couple confusions were computed and entered into regression equations. The results were identical to those with the raw scores.

Table 2  
Correlations Among Variables by Condition (Study 4)

Variable	RISC scale	ARC	WCC	TR	TM
Married condition ( <i>n</i> = 69)					
ARC	0.33**				
Within-couple confusions (WCC)	-0.20	-0.29*			
Total recalled (TR)	0.11	0.25*	-0.42**		
Total matched (TM)	0.24*	0.43**	-0.54**	0.64**	
<i>M</i>	5.47	0.26	0.70	19.00	17.16
<i>SD</i>	0.93	0.28	1.03	7.66	5.23
Sibling condition ( <i>n</i> = 71)					
ARC	0.12				
Within-couple confusions	0.15	-0.15			
Total recalled	0.02	0.27*	-0.16		
Total matched	0.07	0.43**	-0.31**	0.53**	
<i>M</i>	5.21	0.26	0.80	18.20	18.00
<i>SD</i>	1.05	0.22	1.24	7.19	4.09
Control condition ( <i>n</i> = 64)					
ARC	-0.03				
Within-couple confusions	0.10	-0.10			
Total recalled	0.05	0.30*	-0.41**		
Total matched	-0.16	0.54**	-0.44**	0.54**	
<i>M</i>	5.42	0.27	0.78	19.66	17.70
<i>SD</i>	0.90	0.21	1.17	6.66	4.86

Note. RISC = relational-interdependent self-construal; ARC = adjusted ratio of clustering.

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

of close relationships. This organization in terms of relationships occurred implicitly; the participants were not encouraged to recall couple information together. In addition, there was a positive relation between levels of the relational self-construal and recognition memory (in the form of correctly matching target names to information). Further analyses indicated that this memory effect was mediated by clustering scores; individuals who scored high on the relational self-construal tended to cluster information in terms of couples, which in turn was related to better memory. This suggests that those who score high on the RISC scale will remember information better than those who score low provided they are given some sort of relational clustering tool.

There were no effects of condition or the relational self-construal on within-couple confusions. This might have been due to a restricted range for the confusions variable. On average, there was less than one within-couple confusion per participant. As Sedikides et al. (1993) showed, the decision to present the target information three times rather than only once increases the differences between conditions for the ARC scores but decreases them for the within-couple confusions. The ARC scores are the better index of clustering, which is why we chose to present the information three times rather than only once.

This effect of using a relationship as a natural category for organizing information about others was not strongly demon-

Table 3  
Hierarchical Regressions Predicting ARC Scores, Within-Couple Confusions, Total Correct, and Total Matched by RISC Scale Scores and Condition (Study 4)

Variable	ARC scores				Within-couple confusions				Total recalled				Total matched			
	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$
Step 1																
Intercept	.26	.02		.03†	.76	.08		.00	17.62	.33		.01	18.91	.50		.01
RISC	.04	.02	.16*		.04	.08	.03		.26	.35	.05		.56	.52	.08	
Condition	-.01	.02	-.03		-.04	.10	-.03		-.28	.41	-.05		-.32	.62	-.04	
Step 2																
Intercept	.26	.02		.03*	.76	.08		.01	17.62	.33		.00	18.90	.50		.03*
RISC	.03	.02	.15*		.04	.08	.04		.26	.35	.05		.49	.50	.07	
Condition	-.01	.02	-.05		-.02	.10	-.02		-.31	.42	-.05		-.52	.62	-.06	
RISC × Condition	.05	.02	.16*		-.18	.11	-.12		.17	.46	.03		1.59	.68	.16*	

Note. For Step 1, *dfs* = 2, 201; for Step 2, *dfs* = 1, 200. For the condition variable, -1 = control condition, 0 = sibling condition, and 1 = married condition. RISC = relational-interdependent self-construal; ARC = adjusted ratio of clustering.

†  $p < .10$ . \*  $p < .05$ .

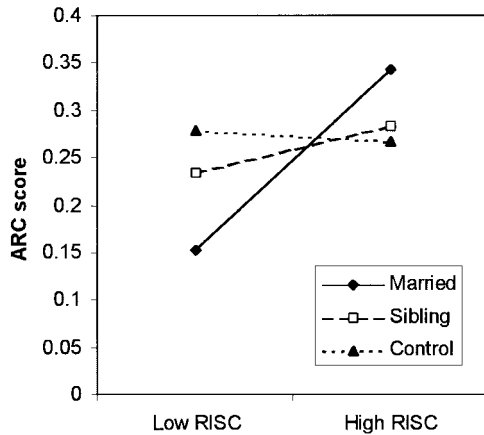


Figure 3. Interaction between condition and relational-interdependent self-construal (RISC) scores in predicting adjusted ratio of clustering (ARC) scores (Study 4).

strated in the case of sibling relationships. This suggests that not all relationships are afforded attention and primacy in memory; perhaps only relationships that are especially interdependent will be used to organize information about others. In the next studies, we focus on relationships with close friends in an examination of the role of the relational self-construal in perceptions of similarity with others.

#### Study 5: Similarity of Descriptions of Self and Others

Studies 5 and 6 focused on a different component of cognition—descriptions of the self and others. If an important relationship is included in the self, then characteristics of the partner may overlap with characteristics of the self (Aron et al., 1991). For individuals with a highly relational self-construal, describing oneself and a close relationship partner similarly may facilitate a sense of belonging in the relationship and may serve to enhance relationship harmony.

The relation between the self-construal and similarity with others depends on the targets. Most previous studies have examined participants' similarity to in-groups, such as other college students (Campbell, 1986; Mikulincer et al., 1998). Because the relational self-construal is based on dyadic relationships with close others, we would not expect to find that the relational self-construal predicts similarity to such in-groups. Extremely close relationships, such as relationships with a romantic partner or one's best friend, may be incorporated into the self by almost everyone, resulting in high levels of similarity. Thus, when asking individuals to make judgments of themselves and another person, it is important to pick a target who is not universally (or nearly universally) considered self-defining. In this study we compared participants' self-descriptions with their descriptions of their second-closest same-sex friend, whom we assumed would be important to the participants but not viewed as a critically self-defining relationship by all participants. We also compared participants' descriptions of themselves with their descriptions of college students at their university, who were not expected to be self-defining for individuals with a highly relational self-construal. We predicted that RISC scale scores would be positively related to

similarity to a close friend, but not to similarity to other college students at one's university.

Perceptions of similarity to others are also positively related to self-esteem. Perceiving oneself as similar to close others can affirm the value of one's attributes, and thus affirm the self (Dunning & Cohen, 1992). Although scores on the RISC scale are generally unrelated to self-esteem (Cross et al., 2000), we controlled for self-esteem in these analyses. This allowed us to test the hypothesis that the relational self-construal predicted similarity to a close other after accounting for the variance in similarity that is due to self-esteem.

In this study, we have assessed similarity by using an indirect measure. Direct measures ask participants to make explicit similarity judgments: "How similar are you to your friend on the dimension of \_\_\_?" These measures are influenced by motivational factors, such as social desirability biases or self-enhancement biases (Kruger, 1999). In addition, the extent to which individuals perceive themselves to be similar to others depends on the framing of the question. When respondents are asked "How similar are you to X?" they tend to perceive less similarity than when asked "How similar is X to you?" (Catrambone, Bieke, & Niedenthal, 1996; Holyoak & Gordon, 1983). Instead of asking participants to make direct comparisons such as these, we simply asked them to evaluate themselves, a close friend, and other college students from their university on 60 trait terms. Descriptions of the self were then correlated with the descriptions of the other targets to obtain measures of similarity. Although the indirect approach used here may result in less similarity between self and other than is usually found in direct measures (Kruger, 1999), these descriptions are somewhat more free of self-enhancement and other motivational biases.

#### Method

##### Participants

Participants were 243 college students (65% women) who participated in exchange for course credit. Because age may be related to descriptions of

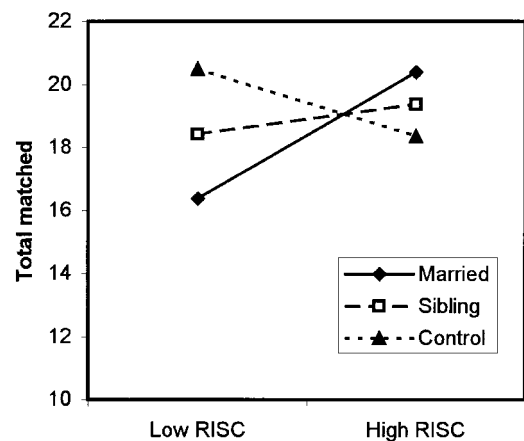


Figure 4. Interaction between condition and relational-interdependent self-construal (RISC) scores in predicting total matched correctly (Study 4).

other college students at one's university, we excluded participants who were older than 25 ( $n = 4$ ).

### Materials

**Self-esteem.** Self-esteem was measured with Rosenberg's (1965) self-esteem scale. Participants rated themselves on a 5-point scale with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .88.

**Target descriptions.** To assess similarity, participants rated the extent to which a series of 60 traits (e.g., emotional, dishonest, quiet) were descriptive of themselves on a 5-point scale with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). They also rated the extent to which these adjectives were descriptive of their second-closest same-sex friend and college students at their university. Similarity scores were created by computing intraclass correlations for each pair of ratings. For example, a participant's set of ratings for him- or herself was correlated with the same participant's ratings of the second-closest same-sex friend to create the self–friend similarity score for that participant. Thus, the possible range of scores was from  $-1.0$  to  $+1.0$ . This approach assesses similarity in a pattern of responses, or trait-to-trait variations (Bernieri, Zuckerman, Koestner, & Rosenthal, 1994).

### Procedure

Participants completed the study in groups of 4 to 6 people. After completion of consent forms, participants were given a questionnaire packet that included the RISC scale and demographic information, followed by the first-target evaluation measure, self-esteem, the second-target evaluation measure, filler measures, and the third-target evaluation measure. The order of the target evaluation measures (self, second-closest same-sex friend, and college students) was counterbalanced across participants. There were no order effects in these analyses. After completion of the questionnaire packet, participants were thanked, debriefed, and dismissed.

### Results and Discussion

Our first hypothesis was that participants' scores on the RISC scale would be more strongly related to similarity to a close friend than to other college students. As shown in Table 4, the RISC scale was significantly related to the self–friend similarity score ( $r = .20, p < .01$ ), but was not significantly related to the self–college students similarity score ( $r = .12, p > .10$ ). Hotelling's test of the difference in correlations did not reveal a significant difference between these values, however,  $t(229) = 1.11, ns$ .

Self-esteem was also significantly related to similarity to one's second-closest friend and to other students at one's university (see Table 4). Using regression analyses, we examined the relations between the RISC scale, esteem, and similarity.<sup>6</sup> As Table 5 indicates, RISC scale scores were significantly related to similarity to one's friend, controlling for esteem. Only self-esteem predicted similarity to other college students.

This study supported our hypothesis that individuals who tend to view themselves in terms of their close relationships will also describe themselves and a close friend similarly. This relation did not extend to in-group members, however; there was not a significant relation between the self-construal and similarity to other college students. This suggests that these individuals are judicious in their perceptions of similarity, and that these perceptions are a consequence of the development of a close relationship with the target person and not simply a self-enhancing distortion. Study 6

Table 4  
Correlations Among RISC Scale, Esteem,  
and Similarity Measures (Study 5)

Variable	Self-esteem	Similarity with friend	Similarity with students
RISC scale	.12	.20**	.12
Self-esteem		.31**	.27**
Similarity with friend			.35**

Note.  $N = 232$ . RISC = relational-interdependent self-construal.  
\*\*  $p < .01$ .

extended these findings in an examination of similarity in traits, abilities, and beliefs.

### Study 6: Similarity of Traits, Abilities, and Values

Although many researchers have used traits as the focus of studies of similarity, others have examined self–other descriptions of abilities or beliefs. Studies of false uniqueness and self-enhancement bias have generally asked participants to rate themselves and others (usually other college students) on ability domains. Studies of false consensus have focused on assessing the degree to which individuals view their values and opinions as shared by others. These studies generally show that the degree to which individuals engage in assimilation (i.e., they describe themselves as similar to others) or contrast (i.e., they describe themselves as different from or better than others) depends on the extent to which the dimension of comparison implies a normative or socially desirable position. On nonperformance domains (such as traits, values, or opinions), for which there is not necessarily a socially desirable position, individuals tend to view themselves as similar to others. As Campbell (1986) explained, being different from others on socioemotional dimensions—such as preferences, traits, or opinions—is not especially valued in this society; studies of false consensus indicate that “to the extent there is such a thing as good performance on these dimensions, it lies not in being different from close others but in being similar to close others” (Campbell, 1986, pp. 281–282).

In contrast, individuals are rewarded for positive distinctiveness on performance domains and therefore tend to perceive themselves as better than others in important ability-related domains (Tesser, 1988). Thus, an individual's self-construal may have the greatest effect when making judgments of one's own and others' abilities. For the individual who defines the self in terms of close relationships, seeing oneself as better than close others on ability domains may cause disharmony in the relationship; viewing oneself and close others similarly is more likely to enhance the relationship (and consequently enhance the self). In short, the person with a highly relational self-construal should be less likely than others to contrast away or derogate a friend's abilities so as to enhance the self. In this study, participants described themselves, their second-closest same-sex friend, and the average college student on 30 trait

<sup>6</sup> To reduce the effects of outliers in these analyses, we excluded the data from individuals who scored more than three standard deviations away from the mean on the variables used in the study. This resulted in the elimination of the results of 7 participants (4 women and 3 men).

Table 5  
*Regressions Predicting Similarity Judgments With RISC Scale Scores and Self-Esteem Scores (Study 5)*

Variable	Similarity with friend				Similarity with other students			
	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$	<i>b</i>	<i>SE</i>	$\beta$	$\Delta R^2$
RISC	.04	.02	.17**	.12***	.03	.02	.09	.08***
Esteem	.09	.02	.29***		.12	.03	.26***	

Note.  $N = 232$ . RISC = relational-interdependent self-construal.  
 \*\*  $p < .01$ . \*\*\*  $p < .001$ .

dimensions. In addition, they also evaluated themselves and these others on 10 abilities and 20 belief statements. We also assessed students' self-esteem and used this as a control variable in our analyses.

### Method

#### Participants

Participants were 149 college students (66% women) who participated in exchange for course credit. A total of four (2 women, 1 man, and 1 participant who failed to indicate sex or age) were excluded from all analyses for being older than 25 years old, leaving a final sample of 145 people.

#### Materials

*Self-esteem.* Self-esteem was measured with Rosenberg's (1965) self-esteem scale. Participants rated themselves on a 5-point scale with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .86.

*Target descriptions.* For each target (self, second-closest same-sex friend, and college students), participants first rated the extent to which a series of 30 traits (e.g., emotional, unpredictable, quiet) were descriptive of the target. Second, they rated the extent to which 10 abilities (e.g., athletic, musical) were characteristic of the target (Pelham & Swann, 1989). Finally, they rated the importance of a set of values or behaviors (e.g., being politically active, engaging in regular exercise). Ratings were made on a 5-point scale with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Similarity scores were created by computing intraclass correlations for self and friend and for self and college students.

#### Procedure

Participants completed the study in groups of 4 to 6 people. After completion of informed consent forms, participants were given a questionnaire packet, which was arranged in the following order: the RISC scale and demographic information, the descriptions of the first target, filler measures, descriptions of the second target, more demographic information and the self-esteem measure, and descriptions of the third target. The order of the targets (self, second-closest same-sex friend, and college students) was counterbalanced across participants. Although a few order effects were discovered, there were no more than expected on the basis of chance, and they were uninterpretable theoretically. After completion of the questionnaire packet, participants were thanked, debriefed, and dismissed.

#### Results and Discussion

In separate regression analyses, each of the similarity scores was regressed on the RISC scale, controlling for self-esteem. (Means, standard deviations, and correlations among the variables are presented in Table 6 and the regressions are presented in Table 7.) For descriptions of the friend, RISC scale scores were significantly related to similarity based on abilities and values, but they were only marginally related to similarity based on traits (see Table 7). Most important, the relation between the RISC scale and similarity was strongest for the abilities dimension. Although esteem was more strongly related to similarity based on traits than were RISC scale scores, RISC scale scores accounted for more of the variance in the abilities and values similarity scores than did self-esteem.

The bottom portion of Table 7 presents the results of the regressions predicting similarity with other college students. As

Table 6  
*Correlations Among RISC Scale Scores, Self-Esteem, and Similarity Scores (Study 6)*

Variable	1	2	3	4	5	6	7	8
1. RISC scale	—	.00	.14†	.31***	.18*	.06	.03	.11
2. Self-esteem		—	.30***	.14	-.11	.10	-.04	-.10
3. Self–friend traits ICC			—	.34***	.29***	.12	.03	-.01
4. Self–friend abilities ICC				—	.22**	-.04	.09	.11
5. Self–friend values ICC					—	.07	.18*	.29***
6. Self–college students traits ICC						—	.32***	.34***
7. Self–college students abilities ICC							—	.24**
8. Self–college students values ICC								—
<i>M</i>	5.59	4.29	.44	.25	.41	.19	.02	.21
<i>SD</i>	.75	.56	.28	.39	.29	.28	.34	.37

Note.  $N = 145$ . RISC = relational-interdependent self-construal; ICC = intraclass correlation.  
 †  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 7  
 Regressions Analyses Predicting Similarity Scores With RISC Scale, Controlling for Self-Esteem (Study 6)

Predictor	Traits ICC				Abilities ICC				Values ICC			
	<i>b</i>	<i>SE</i>	$\beta$	$R^2$	<i>b</i>	<i>SE</i>	$\beta$	$R^2$	<i>b</i>	<i>SE</i>	$\beta$	$R^2$
Self-friend similarity												
RISC scale	.19	.11	.14 <sup>†</sup>	.11***	.41	.11	.31***	.11***	.24	.11	.18*	.04*
Esteem	.53	.14	.30***		.24	.14	.14 <sup>†</sup>		-.19	.15	-.11	
Self-college students similarity												
RISC scale	.07	.11	.06	.01	.03	.11	.03	.002	.14	.11	.11	.02
Esteem	.18	.15	.10		-.07	.15	-.04		-.18	.15	-.10	

Note.  $N = 145$ . RISC = relational-interdependent self-construal; ICC = intraclass correlation.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*\*  $p < .001$ .

indicated, neither RISC scale scores nor self-esteem was a significant predictor of these similarity measures.

In summary, this study goes beyond the findings of Study 5 to show that the relational self-construal is related to perceived similarity to a close friend in ability and values domains, as well as trait domains. Replicating the findings of Study 5, and consistent with our hypotheses, this study showed that the relations between the RISC scale and similarity were stronger for descriptions of close friends than for descriptions of in-group members. More important, this study shows that individuals who score high on the relational self-construal measure do not engage in typical self-serving evaluations in ability domains. Instead, highly relational individuals viewed themselves as more similar to their close friend than did low scorers. For individuals with a highly relational self-construal, thinking of oneself and a close friend in a similar manner may promote positive affect and a sense of belonging in the relationship (Tesser et al., 1998). Similarity to a close friend may provide a form of self-enhancement for the high relationals that is quite different from the uniqueness bias that has been observed in many other studies of self-other similarity.

### General Discussion

Much of the work of the self occurs outside of awareness, through implicit processes. Although the relational self-construal is conceptualized as an explicit view of the self that is defined by relationships, these studies show that its influence on implicit or indirect processes is fairly extensive. Studies 1 and 2 revealed that individuals who have developed a relational self-construal tended to have more positive implicit associations with concepts related to relationships and tended to have a more tightly organized cognitive network of relationship-oriented terms than did others. Because this network of associations is connected to the self for persons with a highly relational self-construal, it will be easily accessed and quickly activated in social information processing, resulting in attention to, memory for, and positive reactions to relational stimuli. Representations of self-defining others may also be activated along with this network of relational information. These processes may underlie behaviors that are facilitative of relationships, relational self-esteem, or gender differences in relational cognition (Cross et al., 2000).

This rich network of associations for relationship-oriented terms may also promote better memory for relationship information among individuals with a highly relational self-construal. In

Study 3, high relationals were more likely to remember information about a target person's relationships than were low relationals. Study 4 revealed that high relationals were more likely than lows to use information about targets' relationships to implicitly organize information in memory. This clustering of information in terms of couples also led to enhanced memory for information about the individuals. Thus, the tendency of the person with a highly relational self-construal to think about and organize the world in terms of relationships leads to better memory for spontaneously encoded information about others. Coupled with the findings of Study 2, these studies indicate that the relational self-construal influences cognitive organization of both abstract relational concepts and relational information about others.

For the person with a highly relational self-construal, close others will be represented as part of the self, leading to similar descriptions of the self and close others. Using an indirect measure of similarity, Studies 5 and 6 revealed that the relational self-construal was related to similar self-other descriptions for close friends but not for distant in-group members. This indicates that the degree of similarity reported by the high relationals is not simply a response bias—they do not evaluate all targets as similar to themselves, but only close relationship partners. Much of the research on self-other similarity has focused on the role of self-esteem in this process. These two studies, however, showed that the association between similarity and the relational self-construal was independent of self-esteem. Although self-other similarity certainly serves to enhance the self, these results suggest that it may serve other goals also, such as the goal of maintaining a sense of closeness in a relationship.

Study 6 expanded the domains of evaluation to assess descriptions of abilities and opinions, in addition to traits. Controlling for self-esteem, the RISC scale again predicted self-friend similarity in the three domains. Most striking was the finding that the relation between the RISC scale and similarity was strongest for the evaluation of abilities. Contrary to the commonly found pattern of viewing one's own abilities as better than those of others, participants with a highly relational self-construal tended to view themselves as more similar to their friends than did lows. In contrast to the comparison processes described by Tesser (1988) and others, this finding suggests that individuals with a highly relational self-construal may not derive self-worth from perceptions that they are better than close others in important domains. Instead, simi-

larity to and harmony with close others is a more powerful source of self-worth for these persons.

At least two processes may account for these findings. First, individuals with a highly relational self-construal may select as friends people who are more similar to them than do other individuals, perhaps because similarity is assumed to contribute to smooth and harmonious relationships. Second, highly relational persons may simply notice and remember information that denotes similarity to the self more than do lows. Some research suggests that when relational self-representations are activated, individuals perceive ambiguous attitude statements to be similar to their own attitudes (Brewer & Gardner, 1996). This inclusive orientation may be chronically activated for the highly relational person, resulting in an enhanced likelihood of perceiving similarity with important others.

These findings suggest that other social-cognitive processes that assume an independent or individualistic self-representation may require modification in light of variation in the self-construal. Individuals with a highly relational self-construal may tend to define themselves in terms of attributes they share with close others, rather than in terms of ways that they differ from others (McGuire & McGuire, 1988). For highly relational individuals, attribution processes for self-defining others may closely resemble attribution processes for the self. For example, they may attribute the behavior of self-defining others to something about the situation rather than to dispositions, as individuals tend to do for themselves (Nisbett, Caputo, Legant, & Maracek, 1973). When made self-aware, these persons may think not only about their own values and standards, but also about the values and standards of self-defining others. As the assumptions about the nature of the self in these and other widely accepted findings in social cognition are brought to light, our theories and models of social cognition will be revised and strengthened, leading to a better understanding of social thought and behavior.

The association between the relational self-construal and these implicit cognitive processes is particularly impressive when considered in the context of the methods used in these studies. All of the studies reported here used indirect or implicit measures to assess cognitive processes; the problems of self-presentation, demand effects, and self-serving responses that afflict direct or explicit measures are minimized in these approaches. In addition, none of these studies explicitly primed the relational self-construal prior to the assessment of the dependent measures. In Studies 1 and 4, the relational self-construal was measured weeks before the experimental session. In the other studies, the self-construal measure was embedded in a questionnaire with other measures, and there was no explicit mention of our interest in the self.<sup>7</sup> This suggests that for individuals with a highly relational self-construal, relational components of the self are chronically activated and persistently influence cognition. Although other components of the self, such as the personal self or the collective self (Brewer & Gardner, 1996), may be activated in particular situations, the relational self seems to be the default level of self-representation for these individuals.

These studies cover a range of cognitive processes: from implicit cognitive associations and networks to memory and similarity of self and others. We sought to build on and extend earlier research that illustrated the role of the self in cognition. Although we anticipated that the relational self-construal would function

somewhat like a self-schema in influencing memory, it is nonetheless necessary to demonstrate its role in cognitive processes. These findings go beyond the literature on self-schemas, which generally shows that self-schemas influence cognition in schema-related domains. The relational self-construal is indeed associated with implicit cognition in relational domains, but it also is associated with self-other similarity in nonrelational domains. Self-schema theory would not have predicted these results.

The conceptualization of the relational self-construal as a central organizing structure of the self makes possible the articulation of theories and hypotheses that go beyond the cognitive effects predicted by self-schema theory. For example, the construct of the relational self-construal allows one to better pinpoint the processes and mechanisms that account for gender differences in behavior. If the notion of the relational self-construal is to prove helpful in understanding gender differences in cognition, then it is necessary to demonstrate not only that men and women differ on this dimension, but also that this self-construal influences cognitive processes. For example, women are more likely to construct a highly relational self-construal than are men, and therefore may have more tightly knit cognitive networks for themselves and relationship partners. This cognitive network may, in turn, account for women's better memory for relational events (Ross & Holmberg, 1993). With these studies, we have set the stage for further research in which the mediational role of the self-construal in the association between gender and cognition can be examined.

This research adds to the growing literature on relational schemas, cognitive representations of self and others, and their consequences. Using methods new to this particular area, these studies show that the self-construal is reliably related to several aspects of thinking about relationships. Including this perspective on the self may enhance other lines of research on close relationships. The highly relational person may be more likely to accommodate to a relational partner in order to create or maintain a harmonious relationship (Arriaga & Rusbult, 1998). As a result, this person may experience more change or expansion of the self in a close relationship than will other persons (Aron, Paris, & Aron, 1995). Although there are similarities in this conception of the relational self-construal and Aron et al.'s work on inclusion of the other in the self, the focus and methods used in this set of studies are different from their work. The focus of this research is the nature and structure of the self, which is in contrast to the focus of Aron et al.'s work on the cognitive consequences of a specific relationship. These different perspectives result in different hypotheses regarding the role of the self in cognition. From the perspective of the Aron et al. research, one would not expect that the inclusion of a particular relationship in the self (e.g., with one's spouse or mother) would necessarily result in positive evaluations of global

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<sup>7</sup> Although it would have been preferable to measure the relational self-construal at a session separate from the other data collection, this was often impossible given the setup of data collection at this university. In Studies 2 and 3, the dependent measures were collected prior to measurement of the self-construal. It is unlikely that evaluating the similarity of terms (in Study 2) or recalling information about a college student (Study 3) influenced responses to the RISC scale. In Studies 5 and 6, the RISC scale was placed with demographic items at the beginning of the questionnaires, but it is again unlikely that completing the RISC scale influenced participants' self-other ratings in this indirect similarity task.

relationship terms (Study 1) or in tightly organized cognitive networks for relational concepts (Study 2). Nor would the inclusion of a particular relationship in the self be expected to contribute to better memory for the behavior of others who are not included in the self (Studies 3 and 4). It is an open, and interesting, question whether the Aron et al. (1992) measure of Inclusion of Other in the Self would predict self–other similarity as in Studies 5 and 6. In short, our goal is not to contend with Aron et al.’s work, but to better understand how individual differences in the structure of the self may contribute to the literature on relational cognition.

This research is also relevant to Baldwin’s (1992) work on relational schemas. Relational schemas are “cognitive structures representing regularities in patterns of interpersonal relatedness” (Baldwin, 1992, p. 461). In several studies, Baldwin and his colleagues showed that when schemas for important others were primed, they influenced information processing (Baldwin, Carrell, & Lopez, 1990; Baldwin & Holmes, 1987). Like Baldwin, we expect that the activation of close or important relationships will influence cognitive processes for almost everyone, regardless of their self-construals. The activation of close, self-defining relationships should be more frequent and automatic for individuals who have constructed a highly relational self-construal, however. In addition, these studies show that the relational self-construal influences basic cognitive processes that are not specific to a particular relationship or type of relationship (as in Studies 2 and 3).

Baldwin and his colleagues’ work has creatively used the tools of research in social cognition to illustrate how outcome expectancies (or if–then contingencies) embedded in particular types of relational schemas are related to self-esteem (Baldwin & Sinclair, 1996) and attachment security or insecurity (Baldwin & Meunier, 1999). For example, individuals who experienced contingent regard from caregivers as children may develop interpersonal scripts that include the rule “If I succeed, then I will be accepted by others” (Baldwin & Sinclair, 1996). Individual differences in the self-construal may influence the nature and function of scripts or if–then contingencies, as well as the representations of others in the relational schema. For example, individuals with a highly relational self-construal may construct an if–then contingency that links relationships to their own sense of well-being, such as, “If I maintain or promote my close relationships, then I feel good about myself.” As Studies 5 and 6 showed, individuals with a highly relational self-construal tend to create schemas for close others that depict them as similar to the self. In short, the notion of the relational self-construal may be a component of relational schemas not yet fully explored.

Several other theoretical perspectives may benefit from considering variation in the self-construal. For example, Deci and Ryan’s (1991) model of motivation posits that goals that reflect the “core self” will be the most satisfying. Such goals are “self-determined”; they are freely chosen because they are enjoyable or fun, and they are uninfluenced by external factors. From their perspective, goals that are influenced by others are viewed as external to the self and not fully self-determined. Implicit in this theory of motivation is a view of the self as defined independently of others. If, however, the self is defined in terms of close relationships, then goals that are influenced by the desire or wishes of close others may be as fully self-determined as goals influenced by one’s own desires and wishes alone. For the person with a highly relational self-construal,

goals that promote relatedness and connection to close others may be as satisfying as goals that promote autonomy.

One long-accepted maxim in Western psychology is that individuals should behave consistently across situations. Indeed, cross-situational consistency is viewed by some personality psychologists as the fundamental grounds of personality coherence (Pervin, 1990) and is a primary contributor to well-being (Donahue, Robins, Roberts, & John, 1993). For individuals with a highly relational self-construal, however, cross-situational consistency may not be as important as within-relationship appropriateness. For these individuals, well-being may derive from behaving appropriately in their self-defining relationships and maintaining harmony and stability in these relationships. If the demands of different relationships vary, then the individual’s behavior may vary across relationships too. Preliminary research supports the hypothesis that cross-situational consistency is less strongly predictive of well-being for individuals with a highly relational self-construal than for lows (Cross, Gore, & Morris, 2001). Individual differences in the structure of the self-construal have implications for other processes, such as social comparison, self-regulation, emotional expression, aggression, and intimacy.

At this point we can only speculate about the processes that result in a highly relational self-construal. Maccoby (1990) suggested that the characteristics of boys’ and girls’ social interaction and play contribute to persistent differences in interaction style. Boys’ groups are characterized by concern for dominance, whereas girls’ groups are characterized by concern for harmonious relationships. These differences likely influence the development of the self and contribute to gender differences in the relational self-construal. Studies with young children suggest that parents may emphasize attention to the feelings of others more for daughters than for sons, which could also lead to greater attention to relationships among women (Dunn, Bretherton, & Munn, 1987; Fivush, 1992). In a far-reaching theory of gender differences in self-objectification, Frederickson and Roberts (1997; Frederickson, Roberts, Noll, Quinn, & Twenge, 1998) argued that as a result of the sexual objectification of women in North America, women learn to take an observer’s perspective on their own bodies. They have reasoned that women are socialized to engage in self-objectification, which means that “individuals think about and value their own body more from a third-person perspective . . . rather than from a first-person perspective” (Frederickson et al., 1998, p. 270). We hypothesize that for many women, this aspect of gender socialization may lead to a fairly global or chronic orientation toward attention to close others’ perspectives in general. Continual attention to the thoughts and feelings of others and socialization pressures that emphasize valuing of harmonious relationships are but a few of the processes that may play a role in the development of a highly relational self-construal. Although these speculations focus on gender-related findings, these processes are not necessarily linked to gender; in some families or cultural contexts, boys may also be encouraged to attend to others’ perspectives and to seek harmony in relationships. Ultimately, further investigation into gender and cultural differences may facilitate the development of a richer and more thorough understanding of antecedents of the relational self-construal and its role in human behavior.

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(Appendix follows)

## Appendix

## Information Items, Study 4

Couple member	Information item			
	2	3	4	5
Carl	Favorite color is burgundy	Hobby is yoga	Is humorous	College major is philosophy
Sarah	Is a human rights activist	Has blue eyes	Favorite actress is Glenn Close	Likes to dress casually
Greg	Works part time as a gas station attendant	Is Lutheran	Gets jealous when friends accomplish something <sup>a</sup>	Is tall
Mary	Is considerate of other people <sup>a</sup>	Favorite U.S. President is John F. Kennedy	Enjoys watching tennis	Listens to jazz
Bill	Lives on Lincoln Ave.	Has several outstanding achievements <sup>a</sup>	Favorite writer is Hemingway	Dreams of owning a Jaguar
Jane	Hometown is St. Louis	Pet peeve is cigarette smoke	Is a Democrat	Preferred drink is pina colada
Eric	Is blond	Favorite actor is Robert De Niro	Is a member of the Rotary Club	Has never traveled outside of Iowa
Rose	Takes vacations at Daytona Beach	Relates well to others <sup>a</sup>	Favorite TV show is <i>LA Law</i>	Is fascinated by modern art

*Note.* The first information item specified that the target was married to another target, married (without specifying the spouse), or a sibling of another target, depending on the condition.

<sup>a</sup> Indicates an information item that was not part of the Sedikides et al. (1993) studies. Information items included as part of the Sedikides et al. experiments but not included in this study were as follows: "Is a vegetarian," "Likes to study at the library," "Likes people who are 'independent,'" and "Wakes up at 5 a.m. every day." "Lives on Lincoln Ave." was originally "Lives on Langdon Street," and "Has never traveled outside of Iowa" was originally "Has never traveled outside of Wisconsin."

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