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Defending the self:
The role of the relational-interdependent self-construal

by

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ABSTRACT

Individuals with relational-interdependent self-construals define themselves based on their important relationships. This organization of the self-concept has implications for self-enhancement and self-protection. High relationals should be motivated to maintain and strengthen important relationships. This motivation is a departure from typical self-enhancement research, which focuses on the motivation to emphasize one's own positive qualities. The purpose of this project was to examine how the relational self-construal is related to individuals' responses to threat.

Study 1 examined the relational self-construal and a threat to the self. For high relationals, some forms of self-enhancement, such as emphasizing individual traits and attributes, might conflict with motives to enhance important relationships. Participants learned that their partner (either a friend or a stranger) outperformed them on a test. It was hypothesized that high relationals who were outperformed by a close friend would be less threatened by their poor performance than other participants. The results revealed that a threat to one's intelligence resulted in lower negative partner evaluations among high relationals paired with a friend than among the other participants. Contrary to prediction, high relationals who were outperformed by a friend also reported higher levels of negative affect than the other three groups.

Study 2 examined the relational self-construal and a threat to a relationship. Threatening a relationship should be more aversive to high relationals than low relationals because the relationship is more self-defining for individuals with high relational self-construals. Participants were induced to write a negative evaluation of their partner. It was hypothesized that high relationals who wrote the negative evaluation about a close friend

would feel more guilty and make a greater effort to repair the damage to the relationship than the other participants. The results revealed that partner enhancement was higher among high relationals paired with a friend than the other three groups, suggesting that the former group was trying to repair the relationship more than the other groups. The results from both studies suggest that the relational self-construal plays an important role in behavior and emotion.

CHAPTER 1. GENERAL INTRODUCTION

Sarah and Jessica, who are best friends, both decide to run for election as class president. Sarah is the winner. How will Jessica react? Many psychologists would argue that Jessica's emotional and behavioral responses to this news will reflect how her self-concept is constructed. One prevailing psychological theory would hypothesize that Jessica will immediately move to protect her sense of uniqueness and specialness by engaging in ego-protecting cognitions designed to allow her to self-enhance. She may tell herself that she was never really interested in being the class president or that the election was not well-publicized, but that if it had been, she would have won. She may also avoid interacting with Sarah, which would reduce the painful reminder of her failure.

It is also possible, however, that Jessica, although disappointed, may heartily congratulate Sarah and focus on how exciting it is to be best friends with the new class president. This response would not be predicted by the first theory because Jessica would not be able to protect her self-concept from the distressing experience of loss if she continues to interact with Sarah and to look at the positive aspects of her friend.

What could explain these different outcomes? The answer lies in examining how Jessica constructs and organizes her self-concept. In the first example, Jessica is motivated to protect her ego, whereas in the second example, Jessica is motivated to protect her friendship with Sarah.

The self-concept describes how people think about themselves (Brown, 1998). The self-concept is thought to be an organized knowledge structure, although the exact structure is widely debated among psychologists (see Kihlstrom & Klein, 1994). The way in which the self-concept is organized guides and directs our behavior (Fiske & Taylor, 1991). The

self-concept guides what goals we select, what we remember, and what actions we take (Fiske & Taylor, 1991).

There are many individual differences in how people construct their self-concepts, such as the complexity of the self-concept (Linville, 1985) and the organization of the self-concept (Showers, 1992). One fundamental difference in the organization of the self-concept is the degree to which individuals incorporate important others into the self (Markus & Kitayama, 1991).

In this thesis, I will be examining one aspect of the self-concept: the degree to which important others are incorporated into the self (Markus & Kitayama, 1991). Incorporation of important relationships into the self is known as the relational-interdependent self-construal, henceforth the relational self-construal. This concept has been discussed from a theoretical standpoint, but little experimental data has been gathered (see Cross & Madson, 1997).

The main purpose of this thesis is to examine the extent to which the incorporation of important relationships in the organization of the self-concept affects a person's behavior, feelings, and thoughts. To explore the role of the relational self-construal in motivation and behavior, I constructed two studies. The first study examines the impact of the relational self-construal on a threat to the self. The second study examines the impact of the relational self-construal on a threat to a relationship. By examining the relational self-construal in the context of a threat to the self and to an important relationship, I attempted to demonstrate how our current understanding of what is threatening to the self needs to be expanded.

Independent and Interdependent Self-Construals

In Western cultures, the self is viewed as autonomous, separate, and unique (Markus & Kitayama, 1991). This view of the self has been described as "a bounded, unique, more or

less integrated motivational and cognitive universe, a dynamic center of awareness, emotion, judgment, and action organized into a distinctive whole and set contrastively both against other such wholes and against a social and natural background” (Geertz, 1975, p. 48).

Markus and Kitayama (1991) have termed this the independent self-construal. Another way to describe the independent self-construal is as the self as “separated from others” (Cross & Madson, 1997).

For individuals with well-developed independent self-construals, the boundary between the cognitive representation of the self and others is rigid. The independent self-construal is constructed based on the individual’s traits, attributes, and abilities (Cross & Madson, 1997; Kanagawa, Cross, & Markus, 2001). When thinking about themselves, individuals with well-developed independent self-construals think about their own abilities, attributes, and goals, rather than the emotions and thoughts of others (Singelis, 1994). The behavior of an individual with a well-developed independent self-construal should be directed by his or her internal traits and attributes (Markus & Kitayama, 1991). For these individuals, self-esteem is based on expressing the self and validating internal attributes and traits (Markus & Kitayama, 1991).

In contrast, in East Asian or collectivist cultures, the self-concept is based in part on close relationships and group memberships (Markus & Kitayama, 1991). This self-concept has been described as relational, communal, or as having a self-in-relation (Bakan, 1966; Guisinger & Blatt, 1994; Markus & Oyserman, 1989; Miller, 1986). Markus and Kitayama (1991) have termed this self-construal the interdependent self-construal.

For individuals with a well-developed interdependent self-construal, close others or important groups define the self, or are included in the self. The boundaries between the

cognitive representations of the self and important others are flexible or permeable. When thinking about themselves, individuals with well-developed interdependent self-construals also think about important relationships. Because others are included in the self, this person's behavior should be guided in part by the perceived thoughts, feelings, and behaviors of the important others (Markus & Kitayama, 1991). For example, Cross, Bacon, and Morris (2000) found that individuals with high relational-interdependent self-construals were more likely to base important decisions on the needs and wishes of important others than individuals with low relational self-construals.

All individuals develop an independent self-construal and an interdependent self-construal (Kitayama, Markus, & Matsumoto, 1995; Singelis, 1994). Within a culture, social customs, institutions, and beliefs revolve around the dominant self-construal (Kitayama et al., 1995; Singelis, 1994). Thus, within different cultures, different self-construals are valued and emphasized by the culture, which leads to differential development of the two self-construals (Triandis, 1989). People in non-Western cultures are thought to emphasize the interdependent self-construal more than people in Western cultures (Markus & Kitayama, 1991). Likewise, people in Western cultures are thought to emphasize the independent self-construal more than people in non-Western cultures (Markus & Kitayama, 1991). Within Western cultures, women are thought to emphasize the interdependent self-construal and men are thought to emphasize the independent self-construal (Cross & Madson, 1997).

The type of interdependent self-construal constructed by individuals in non-Western cultures and Western cultures is not the same (Kashima et al., 1995). For individuals in non-Western cultures, interdependence is viewed in terms of a collective dimension, or the relationship between the individual and in-groups (Kashima et al., 1995).

The focus on the in-group has less meaning among Americans, whose group memberships are more voluntary, demand less of their members, and are larger than they are in collectivist cultures (Triandis, 1989). Americans are more likely to have a number of individual relationships (e.g., mother, best friend, and spouse) incorporated into the self-concept, rather than in-groups. Thus, in Western cultures, interdependence is viewed in terms of a relational dimension, or the relationship between the individual and other individuals (Cross & Madson, 1997; Kashima et al., 1995). This has been termed the relational-interdependent self-construal or the relational self-construal (Cross et al., 2000). Although women are more likely to construct a highly relational self-construal than men, there are individual differences in both sexes (Cross et al., 2000). It is not appropriate, therefore, to use gender to identify the relational self-construal.

In this thesis, the focus is on relational differences in the self-construal rather than cultural or gender differences. In addition, because the independent self-construal and the interdependent self-construal are independent dimensions (Singelis, 1994), this thesis will not examine the independent self-construal further.

Individuals with highly developed interdependent self-construals do not haphazardly or automatically incorporate into their self-construal every person they meet. Strangers will not be included in the self, nor will mere acquaintances. The relationship must be important and meaningful in order for the individual with a highly developed interdependent self-construal to incorporate it into the self. It is possible, however, that because individuals with highly developed interdependent self-construals tend to base their behavior on the perceived thoughts and beliefs of close others, they may be more empathic toward people in general. These individuals may have more experience and interest in interpreting situations from

another person's point of view or in acting in ways that minimize the potential suffering of others (see Cross & Madson, 1997, for a review).

Most of the research on the self has defined the self as separate from others (Cross & Madson, 1997). By assuming that the self is organized based on the independent self-construal, researchers have shaped their understanding of the self based on this underlying cognitive framework. Using this conception of the self has affected theories related to motivation, emotion, and social behavior (Markus & Kitayama, 1991).

Contemporary theories of motivation that are based on this independent viewpoint argue that people strive to enhance the self by demonstrating their uniqueness and individuality, which will bolster self-esteem (Markus & Kitayama, 1991). In addition, such theories argue that individuals may derogate a friend to feel better (Brown, 1998; Tesser, 1988; Wills, 1981). This tendency, however, should be less likely among individuals who have constructed their self-concept based on the cognitive representations of important relationships. For these individuals, self-enhancement should arise from maintaining close relationships and contributing to the well-being of important others (Markus & Kitayama, 1991).

Widely accepted theories of affect based on the viewpoint of the independent self-construal argue that affirming one's uniqueness and individuality results in increased positive affect (Cross & Madson, 1997). For individuals with high relational self-construals, however, positive affect may arise from an interpersonal source as well. Individuals with high relational self-construals should find that affirming their connectedness to others and strengthening important relationships leads to increased positive affect (Markus & Kitayama, 1991).

Social behavior also may be affected by and have different implications based on the construction of the self-concept (Cross & Madson, 1997). For individuals with well-developed independent self-construals, social behavior may be used to maintain feelings of autonomy and uniqueness. For individuals with well-developed interdependent self-construals, social behavior may be used as a means of maintaining feelings of connectedness with important others. For example, individuals with high independent self-construals may tell their friends and classmates about a high grade on an exam, whereas individuals with high interdependent self-construals may not tell anyone about a high grade on an exam. In the former example, the individuals are announcing their uniqueness, whereas in the latter example, the individuals are attempting to maintain positive relationships with their friends by not announcing their superiority.

Examining the relational-interdependent self-construal will expand our understanding of basic processes of the self. Rather than simply examining a different way to organize the self, this thesis will contribute to our understanding of the self by helping to specify the mechanism that results in some of the variation in motivation, emotion, and social behavior described above.

“Including other in the self” does not occur only for individuals with highly developed interdependent self-construals (Aron, Aron, & Smollen, 1992). Certain individuals, such as mothers and romantic partners tend to be incorporated into the self by most people (Aron, Aron, Tudor, & Nelson, 1991). What separates individuals with well-developed interdependent self-construals from those with poorly developed interdependent self-construals is how that information stored in the self is used and when it is activated (Singelis, 1994). For individuals with high relational-interdependent self-construals,

representations of important relationships tend to guide thoughts, motivation, and behavior (Cross & Madson, 1997). Thus, it is not the case that individuals who do not have a highly relational self-construal are unable to form meaningful relationships, rather, these relationships are not as central to the motivation and behavior of the individual as they are for the person with a highly relational self-construal.

Until recently, most of the work on the relational self-construal has been theoretical rather than empirical (Cross & Madson, 1997). Because women are more likely to have well-developed relational self-construals than men, Cross and Madson (1997) argued that many gender differences in cognition, social behavior, motivation, and emotion, can be explained by differences in the construction of the self-construal. The following examples are summarized from Cross and Madson (1997).

The organization of the self-concept is thought to influence how information is perceived and processed. Past research has found that women are more likely than men to organize information based on relational information (Ross & Holmberg, 1992) and to consider things from another person's point of view (Davis, 1980). These gender differences may be the result of differences in the self-concept. Individuals with well-developed relational self-construals should be more likely to attend to information about relationships because connectedness is highly valued. Such individuals should also be more attentive to others because they are more interested in maintaining positive relationships than individuals with low relational self-construals.

The organization of the self-concept may affect self-enhancement strategies. Past research has found that men are more likely to engage in the false uniqueness bias than women (Goethals, Messick, & Allison, 1991; Josephs, Markus, & Tafarodi, 1992). Women,

in turn, were found to be more modest than men when reporting their college GPA (Heatherington et al., 1993). Individuals with high relational self-construals should find stressing their superiority distressing, as such information may hurt the feelings of people who are close to the individual. In terms of emotion, women are more likely than men to express their feelings and are more attuned to the feelings of others (Clark & Reis, 1988; Kuebli, Butler, & Fivush, 1995). Individuals with high relational self-construals need to pick up on emotional cues in order to address problems within an important relationship.

More recently, studies of the relational-interdependent self-construal have focused on how it relates to social cognition and interpersonal interactions (Cross et al., 2000; Cross et al., 2001). One study examined the impact of the interpersonal self-construal on decision making processes (Cross et al., 2000). Participants were asked to think about a decision they were in the process of making and then list what factors were influencing their decision-making process. When making decisions, high relationals are more likely than low relationals to base them on the needs and wishes of close others.

The interdependent self-construal also affects how people relate to others. Cross et al. (2000) had previously unacquainted participants get to know each other using a dyadic interaction paradigm (Aron, Melinat, Aron, Vallone, & Bator, 1997). The dyadic interaction paradigm was used to simulate the process of developing a friendship. After the interaction, participants answered questions regarding their perceptions of their partner. Participants who were paired with high relationals reported that their partner was more responsive to their disclosures and also more likely to disclose personal information than participants who were paired with low relationals. Both of these studies suggest that the interdependent self-construal affects how individuals relate to each other.

Cross, Morris, and Gore (2001) conducted a number of studies focusing on the role of the relational-interdependent self-construal in social cognition. They found that high relationals were more likely to think of relationship terms positively (Study 1), had a more tightly organized network of relationship-related concepts (Study 2), and organized information about people based on relationships (Study 3) than low relationals. In addition, high relationals described close friends as being more similar to themselves than low relationals (Studies 5 and 6). These studies suggest that the relational-interdependent self-construal affects how people organize information about relationships and themselves.

Although the amount of empirical evidence of the relational self-construal is quite small, given the theoretical underpinnings of the construct, a number of conclusions can be drawn. The extent to which the relational self-construal is developed should impact motivation processes and relational processes. To return to the example at the beginning of this paper, if Jessica's self-esteem is based on maintaining a close relationship with Sarah, she is going to behave and feel differently about Sarah's victory than an individual whose self-esteem is not based on important relationships. Individuals with well-developed relational self-construals should exhibit differences in what they find self-enhancing and also what they find threatening to the self. In the next section, I will examine self-enhancement and discuss how the relational self-construal impacts what individuals find self-enhancing.

Self-Related Motives

People constantly seek information about themselves. This search for self knowledge is goal oriented, and these goals lead people to actively search, select, and interpret information about themselves (Brown, 1998). People have three main motives that guide

their self-evaluation strategies: self-enhancement, self-assessment, and self-verification (Sedikides & Strube, 1995).

Self-enhancement leads people to seek out positive information about the self, which makes them feel good, and to attempt to avoid gathering negative information about the self, which would make them feel bad (Brown, 1998). Sometimes people want to learn the truth about themselves, which is known as the self-assessment motive. By encoding accurate information about the self, individuals are better able to plan and set goals (Brown, 1998). The final motive is self-verification, in which people attempt to find evidence that supports their current self-concept (e.g., Swann, Pelham, & Krull, 1992).

The most frequent self-evaluation motive is self-enhancement (Sedikides, 1993). Most of the work on self-enhancement strategies focuses on ways in which people process, evaluate, and recall self-relevant information so as to emphasize the positive aspects of the self and de-emphasize the negative aspects of the self (e.g., Campbell, 1986; Kuiper & Derry, 1982; Taylor & Brown, 1988). By selecting and seeking out self-enhancing information, people's self-concepts may become unrealistically positive, with negative aspects of the self minimized or absent (Taylor & Brown, 1988). Because the self-enhancement motive may lead people to overlook their own negative characteristics, people tend to view themselves as better than others (Taylor & Brown, 1988).

Much of the past research on self-enhancement has assumed a self that is independent, autonomous, or separate from others. In Western cultures, the self-enhancement motive is thought to lead individuals to seek out and interpret information about the self in a positive light (Brown, 1998). For individuals with high relational self-construals, however, some major sources of self-enhancement may be quite different from

those of individuals with low relational self-construals. For individuals for whom relationships are self-defining, self-enhancement should oftentimes involve focusing on important aspects of their close relationships (Cross & Madson, 1997; Markus & Kitayama, 1991). Sometimes this enhancement may involve engaging in behaviors that strengthen important relationships (Cross & Madson, 1997). For individuals with low relational self-construals, maintaining close relationships should not be as self-enhancing as for individuals with high relational self-construals. For the individual with a high relational self-construal, however, enhancing the self via demonstrating one's uniqueness and specialness, such as announcing one's perfect score on a test, may conflict with motives to enhance relationships, such as not upsetting one's friend by bragging (Singelis, 1994).

Threats to the Self

In most research, threats to the self are thought to consist of information or actions that emphasize negative aspects of the self or demonstrate one's lack of uniqueness or superiority (Brown, 1998). When confronted with this type of threat, termed "ego threat", people may derogate others (Brown & Gallagher, 1992; Fein & Spencer, 1997; Gibbons & Gerrard, 1991; Wills, 1981) or utilize defenses that minimize the impact of the threat, such as bolstering the self in other areas or compartmentalizing the threat (Steele, 1988; Taylor & Brown, 1988).

Social Comparison Theory

When individuals experience ego threat, one common response is to engage in downward social comparison to restore or enhance their subjective well-being (e.g., Gibbons & Gerrard, 1991; Wills, 1981). Downward comparison occurs when individuals compare themselves to a lower status individual to enhance their well being (Festinger, 1954; Wills,

1981). There are two ways for people to obtain a lower status comparison target: either by seeking out a lower status individual, termed passive downward comparison, or by derogating someone in order to seemingly reduce that person's status, termed active downward comparison (Wills, 1981). Typically, active downward comparison involves derogating the comparison target, whereas passive downward comparison involves taking advantage of an individual whose status is already lower than the comparer. The use of either type of downward social comparison can lead to improved mood, increased optimism, higher self-esteem, and reduced feelings of deviance (Gibbons & Gerrard, 1991).

In everyday interactions, it is quite common to encounter targets who have outperformed us (Wheeler & Miyake, 1992; Wood, 1989). Comparing oneself with a superior individual is called upward social comparison. There is much less empirical research on upward social comparison than downward social comparison (see Collins, 1996 for a review). Upward social comparison is thought by many researchers to have negative effects on self-esteem and mood (e.g., Brickman & Bulman, 1977; Wills, 1981). Most of the upward comparison research has been conducted by Tesser and his colleagues and their work on the self-evaluation maintenance (SEM) model (Tesser, 1988).

Self-Evaluation Maintenance Model

The self-evaluation maintenance (SEM) model (Tesser, 1988) posits that individuals strive to maintain a positive self-evaluation. Individuals use two processes to maintain a positive self-evaluation: reflection and comparison. The SEM model is based on the assumption that relationships have an effect on self-evaluation (Tesser, 1988). The closer (more similar) the individual is to another person, the more likely the relationship will impact the individual's self-evaluation.

The reflection process is based on the idea of basking in the reflected glory of others (Cialdini et al., 1976). When a close other excels at something, the individual may experience increased self-evaluation (Tesser, 1988). For example, a woman who points out that she is friends with a famous actor may then bask in the reflected glory of that actor. The woman's self-evaluation may increase based upon the reflection. Reflection is possible only if there is a certain level of closeness between the individual and the other and if the level of achievement is high (Tesser, Pilkington, & McIntosh, 1989). For example, that same woman would not be able to bask in the reflected glory of a famous actor that she did not know or of a community theater actor, whose achievement is not very high.

Although the superior performance of a close other can increase self-evaluation, it can also threaten self-evaluation if it invites comparison between the performance of the close other and the self. The closer one is to another person, the more likely people are to make comparisons between the two individuals (Tesser, Millar, & Moore, 1988). The resulting comparison could make the individual's performance look bad. For example, if the woman in the previous example was an unemployed actress, career comparisons between the woman and her friend the famous movie star would probably decrease her self-evaluation. The closer the individual is to the other person and the better the other's performance, the greater the potential loss of self-evaluation (Tesser et al., 1989)

The relative importance of the reflection and comparison processes is dependent upon three factors: the closeness of the individual and the other, the level of performance of both the individual and the other, and the relevance of the performance dimension to the individual. The first two factors determine whether self-evaluation is likely. As mentioned previously, the closer the individuals are, the more powerful both reflection and comparison

processes will be to self-evaluation (Tesser, 1988). Likewise, the better the other person's performance is, the more likely that either comparison or reflection will be used by the individual to increase self-evaluation (Tesser, 1988).

The relevance variable determines whether the reflection or comparison process is more important to the individual. Although individuals may be good at many things, they want to excel on only a few of those dimensions (Tesser et al., 1989). For example, if being good at math is unimportant to an individual, another's superior performance on a math test may not be relevant to that individual. If the other person's performance is in an area that is not important (not relevant) to the individual, then the reflection process will be more important than the comparison process (Tesser, 1988). If, however, the other person's performance is in an area that is important (relevant) to the individual, then the comparison process will be more important to the individual than the reflection process (Tesser, 1988).

The SEM model predicts very different responses to the superior performance of another person depending on the importance of the dimension and the closeness of the other person. If the dimension is not relevant to the individual, then he or she will engage in reflection, if the other is close to the individual. If the dimension is relevant to the individual, however, then he or she will engage in comparison. The closer the other person is to the individual, the more threatening a comparison would be (Tesser et al., 1989). When confronted with this situation, the comparer may engage in an ego-protecting strategy. The most common strategies are to diminish the importance of the dimension under comparison (Tesser & Campbell, 1980), to psychologically distance oneself from the target by derogating the target (Pleban & Tesser, 1981), and to undermine another's performance (Tesser & Smith, 1980). Because the comparison is threatening to the individual, individuals

experience higher arousal and negative affect when they are outperformed by a friend than when they are outperformed by a stranger (Tesser et al., 1988).

In one study (Tesser & Smith, 1980), participants brought a close friend to the laboratory and played a word identification game in which the contestant receives clues from another player. The participant supplying the clues could decide how much help to give the contestant by selecting a clue from a sheet that ranked the clues in terms of difficulty. Tesser and Smith found that when guessing the correct word was framed as a measure of important skills (high relevance), participants gave their friend harder clues than they gave participants they did not know. Conversely, when the game was said to be simply a fun game without any meaning (low relevance), participants gave their friend easier clues than they gave participants they did not know. This study suggests that individuals will undermine the performance of a close other if the other person's performance would make the individual's performance look bad.

The SEM model has been demonstrated repeatedly using close friends and strangers (e.g., Tesser, 1988; Tesser et al., 1988). These effects, however, appear to be stronger for men than for women (e.g., Tesser, 1988; Tesser, Campbell, & Smith, 1984; Tesser & Paulhus, 1983). For example, a study of sibling relationships found that although male participants in the study exhibited behavior consistent with the SEM model, there were no effects for female participants (Tesser, 1980). In addition, in a study examining participants' predictions of the performance of a close other on an important task, women actually predicted that their friend would perform better than themselves on the task (Tesser et al., 1989). Tesser et al. (1984) argued that although they can find the predicted SEM effect using women, the results are oftentimes stronger if they use only men. Tesser et al. (1984) argued

that the SEM model may be more applicable to men than women, although they could not offer a reason for this gender difference.

Tesser has recently proposed a modification to the SEM model, suggesting that individuals in romantic relationships may respond differently to being outperformed by a romantic partner than a stranger or a friend (Beach et al., 1998). The extended SEM model is based on the idea that typically, men and women involved in a romantic relationship have a communal orientation which makes them respond empathically to the needs of their partner (Clark, Mills, & Powell, 1986) and makes them less likely to distinguish between benefits to the self and the partner (Beach et al., 1998). It follows that the original SEM model applies to exchange relationships in which individuals strive to maintain equity in the relationship and provide help only if they expect at least equal benefits in the future (Clark et al., 1986), although this point is never directly addressed in the extended SEM model.

Thus, the extended SEM model (Beach et al., 1998) predicts that individuals respond less negatively to being outperformed by their romantic partner than when outperformed by others (with whom they tend to have exchange relationships) and conversely, respond with more empathic concern when they outperform their romantic partner. In a series of questionnaire studies, Beach et al. (1998) found some support for the extended SEM model, with married individuals showing more sympathy when they outperform their spouse and married women responding less negatively when outperformed by their husbands. The extended SEM model was not supported when dating couples were used. A comparison of individuals who were satisfied with their relationship versus those who were not, however, revealed that the extended SEM model worked only in the subset of participants who were satisfied with their relationship (Beach et al., 1998).

Based on the extended SEM model (Beach et al., 1998), it follows that individuals with high relational self-construals should respond less negatively to being outperformed by a close other than individuals with low relational self-construals. Just like individuals in a committed relationship, individuals with high relational self-construals will tend to engage in a communal relationship with close others. Thus, although almost everyone may include a romantic partner in the self (Aron et al., 1991), there will be a wider range of responses to the success of a friend.

Brickman and Bulman (1977) argued that there is a cost to using social comparison. If the comparison target finds out about the comparison, he or she may feel envious, angry, or upset with the person engaging in the comparison. In addition, individuals may feel guilty about feeling better at the expense of another person (Wills, 1981). It is possible that individuals who find close relationships self-defining may be less likely to engage in social comparison due to the negative impact it could have on their relationships. For individuals with high relational self-construals, derogating one's friend to enhance one's personal characteristics should be aversive because it could threaten that close relationship. In fact, past research suggests that men are more likely than women to actively derogate a close same-sex friend to self-enhance (Bacon, 1996).

For individuals with high relational self-construals, the superior performance of a close friend should elicit less negative affect than for individuals with low relational self-construals. Likewise, individuals with high relational self-construals should be less likely to engage in ego-protecting behaviors after the superior performance of a friend than individuals with low relational self-construals.

Threat to Relationships

If a threat to one's intelligence is typically thought to constitute a threat to the self (e.g., Wills, 1981), what constitutes a threat to the self for individuals who define the self in terms of relationships? Clearly, a threat to an important relationship should be more aversive to high relationals than low relationals. Threats to a relationship could come in the form of disagreements, lack of closeness, lack of similarity, distrust, or any other threat to the continuation of the relationship. Another threat to a relationship occurs when one person engages in a behavior that hurts another person, which may make the transgressor feel guilty.

Creating a threat to a relationship in the laboratory is difficult to do without causing long-term problems within a relationship. For example, inducing participants to argue with each other or to distrust each other may have an impact far beyond the laboratory. Because of the ethical issues surrounding introducing a threat to a relationship, I chose to induce guilt. It is possible to induce guilt among participants without actually having them hurt each other's feelings, which should remove any long-term impact of the manipulation.

Baumeister, Stillwell, and Heatherton (1994) argue that the function and origin of guilt have significant interpersonal features. Baumeister et al. (1994) argue that guilt helps maintain close relationships between people because the evidence of guilt demonstrates the concern the guilty party has regarding his or her actions against the victim. Baumeister et al. (1994) hypothesize that guilt should be more prevalent in close relationships than in distant or unestablished relationships because of its interpersonal nature. In a questionnaire study of guilt, Baumeister, Stillwell, and Heatherton (1995) found that individuals are more likely to report feeling guilty after doing something to a valued partner. Guilt was not reported as frequently when the other person was a stranger or someone who was not highly valued.

Given that guilt is an interpersonal phenomenon (Baumeister et al., 1994), it should be experienced more frequently among individuals with well-developed relational self-construals.

There are two main forms of guilt: empathic arousal and anxiety over social exclusion (Baumeister et al., 1994). Empathic arousal occurs when the individual perceives that the other person is suffering and that the individual is somehow to blame for the other person's suffering. Individuals with high relational self-construals should be more concerned about the welfare of close others (because these relationships are self-defining), which should increase feelings of guilt among individuals with high relational self-construals when they cause close others to suffer.

Anxiety over social exclusion occurs when an individual does something that could lead to rejection. The individual's anxiety over potential rejection due to one's behavior may be experienced as guilt (Jones & Kugler, 1993). Because individuals with high relational self-construals are motivated to maintain close relationships, the threat of social exclusion due to an unpleasant behavior may lead to more anxiety and thus more guilt than it would for an individual with a low relational self-construal.

To experience guilt, many researchers believe that one must feel that the behavior that led to the negative outcome was controllable (Weiner, 1985; Weiner, Graham, & Chandler, 1982). As Hoffman (1976) argued, "Blaming oneself becomes possible once one has acquired the cognitive capacity to recognize the consequences of his action for others and to be aware that he has choice and control over his own behavior" (p. 139). Failure due to lack of ability, therefore, should not lead to feelings of guilt, as lack of ability is uncontrollable, although it may lead to other negative feelings such as shame (Weiner, 1985).

Controllability does not necessarily imply that an action must have taken place. Feelings of guilt can also come from failing to act (Hoffman, 1970). Both action and failure to act stem from the individual's ability to control his or her behavior. Niedenthal, Tangney, and Gavanski (1994) demonstrated that guilt triggers counterfactual thinking related to alternative actions. For example, failing to stand up for a friend may lead to counterfactual thoughts such as, "if only I had said something to defend my friend." In this case, the individual had control over his or her behavior, yet failed to act.

Once an individual feels guilty, the individual's response to the negative feeling can enhance or weaken the relationship (Baumeister et al., 1994). Guilt can lead to relationship enhancement when it causes the individual to attempt to repair the damage to the relationship (Lewis, 1971; Lindsay-Hartz, 1984; Tangney, 1993). Some of the possible ways to repair the relationship include: helping/compensating the victim, confessing, and expressing one's feelings of guilt to the victim (Baumeister et al., 1994). All of these actions are designed to demonstrate to the victim how important the relationship is to the transgressor.

When someone expresses guilt or confesses, it is an acknowledgement that the behavior was unacceptable and suggests that the behavior will not occur in the future. Compensating the victim is often done in an effort to make the relationship "even" once again (Berscheid & Walster, 1967). An example of compensation includes the husband who forgets an important anniversary but who later presents his wife with an extremely expensive gift. Again, this action demonstrates the value and importance of the relationship to the guilty party. If the transgressor did not value the relationship, he or she would not bother with these potentially painful and emotionally costly interactions. Baumeister et al. (1994) also believe

that the transgressor's expression of guilt puts the transgressor on the same emotional level with the victim, thereby restoring equality to the relationship.

Responses to guilt can also potentially lead to the weakening of relationships when the response is to avoid the victim (Baumeister et al., 1994). Interacting with the victim can be emotionally painful and make the transgressor feel obligated to make amends. When the relationship is not highly valued, the emotional cost of interacting with the victim may not be worth it. Baumeister et al. (1994) point out, however, that there are instances in which avoidance is relationship enhancing, such as when confrontation could result in the dissolution of the relationship (e.g., confessing to adultery may actually speed up the end of a marriage).

Feelings of guilt can be reduced by engaging in prosocial behavior such as confessing or showing remorse. There is another way in which individuals can reduce guilt that stems from interpersonal relationships, which is to derogate the victim. By derogating the victim, the interpersonal aspect of guilt is reduced. An extreme example of victim derogation includes how the German police worked to dehumanize the Polish Jews that they murdered during World War II (Browning, 1992). By viewing the Polish Jews as less than human, the German police were able to reduce their feelings of guilt as they slaughtered tens of thousands of innocent people. Derogating the victim reduces the interpersonal bond by making it trivial. Without the interpersonal bond between the victim and the transgressor, feelings of guilt will be minimized (Baumeister et al., 1994). Relationships that are not established or highly valued are prime targets for victim derogation, as it reduces the feeling of guilt without the high emotional cost of many of the prosocial responses. Likewise, individuals with low relational self-construals should be less likely to engage in the prosocial

responses than individuals with high relational self-construals because relationship maintenance is not as high a priority for the former group than it is for the latter group.

Most of the guilt research in psychology has been carried out using questionnaires. Questionnaires allow researchers to ask about actual guilt-inducing situations and do not create the same ethical problems that experimental studies do. Unfortunately, researchers who ask participants to think of a guilt-producing situation they experienced in the past cannot be certain that the participants currently feel guilt or that participants can accurately identify situations that aroused feelings of guilt. Societal norms regarding what types of events should cause feelings of guilt may lead to demand characteristics among participants.

On the other hand, experimental guilt research has been hampered by methodological and ethical problems (Baumeister et al., 1995). Experimental manipulations must not create excessively high levels of guilt, which could be detrimental to participants. If the manipulation is too mild, however, the participant may not experience guilt at all. Thus, the task of the experimenter is to create a situation that produces a moderate amount of guilt.

Past studies have attempted to induce moderate amounts of guilt by having the participant accidentally “ruin” something in the laboratory (Baumeister et al., 1995). For example, participants may knock over a rickety table containing a large stack of cards when they touch it, or they may “break” an expensive piece of equipment the experimenter asks them to use (Brock, 1969). In both examples, the participant’s accidental action is expected to produce feelings of guilt. Such experimental paradigms ignore the basic premise that people must feel responsible to experience guilt (e.g., Weiner, 1985). The participant who knocks over a stack of cards may feel bad about what happened, but will probably not feel guilty about the accident (Baumeister et al., 1995). The difficulty for the researcher is to

create a situation in which the participant chooses to engage in an action that will produce feelings of guilt.

A paradigm that appears to be an effective means of inducing guilt is to have participants choose to give feedback to their partner. In a study by Okel and Mosher (1968), participants were asked if they were willing to provide feedback to their partner, and then were given standardized feedback to read to their partner. The feedback they had to read was quite negative, inducing cries of anguish from their partner in the next cubicle (actually a taped confederate's responses). Participants' guilt levels increased dramatically after completing the feedback task (Okel & Mosher, 1968).

Based on the guilt research, individuals with well-developed relational-interdependent self-construals should be more likely to experience feelings of guilt than individuals with undeveloped relational self-construals when the individual has transgressed against a close friend. This difference should arise because high relationals strive to maintain important relationships; feeling guilty may be a sign that the individual has threatened the relationship. Thus, hurting a friend's feelings should induce more guilt and negative affect among high relationals than among low relationals. In addition, this situation should lead to greater degrees of relationship repairing among high relationals than low relationals.

Overview of Studies

The two studies presented in this paper attempt to further the understanding of the relational-interdependent self-construal by examining its role in responses to threats to the self and close relationships. Study 1 examines how individuals with high relational-interdependent self-construals react to a threat to the self. Study 2 examines how individuals with high relational-interdependent self-construals react to a threat to a relationship. Before

addressing these questions. I will present the psychometric properties of a new measure of the relational-interdependent self-construal, which will form the basis for both of the studies.

CHAPTER 2. DEVELOPMENT OF THE RELATIONAL-INTERDEPENDENT SELF-CONSTRUAL SCALE

Past Measures of Interdependence

For many years, researching the relational-interdependent self-construal was difficult because there were no appropriate measures. Due to the lack of appropriate measures, some researchers used gender as a proxy for relational-interdependence (Bacon, 1996; Josephs et al., 1992). The use of gender, however, is only a crude approximation of the degree of relational-interdependence.

There are a number of measures that tap components of the relational-interdependent self-construal, although none captures the construct fully. The Communal Orientation Scale (Clark, Ouellette, Powell, & Milberg, 1987) assesses the respondent's views about equity within close relationships, rather than how those close relationships are encoded within the self-concept. The Inclusion of Other in the Self Scale (Aron et al., 1992) focuses on the inclusion of a single important relationship in the self, rather than a general orientation toward inclusion of close relationships in the self-concept.

Relational-Interdependent Self-Construal (RISC) Scale

The Relational-Interdependent Self-Construal Scale (Cross et al., 2000) was designed to assess the degree to which important relationships are incorporated into the self-concept (see Appendix A). The RISC Scale is an 11-item measure containing nine positively worded items and two negatively worded items. The negatively worded items are reversed before scoring (for a detailed description of the creation of the items, see Cross et al., 2000).

Participants indicated the degree to which they agree with each item on the RISC Scale using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly

agree). The possible range of scores is from 11 to 77. High scores indicate higher levels of interdependence.

Cross et al. (2000) used eight samples of introductory psychology students in the validation of the RISC Scale. These samples ranged in size from 271 to 940, with a total of 4,283. In 5 of the samples, participants who were not United States citizens were identified and removed from all analyses. Due to the much larger sample sizes and more complete scale validation data collected for the Cross et al. study, the focus of this section will be on the Cross et al. samples, rather than the current samples. Results from the current studies, referred to as Study 1 and Study 2, are discussed where appropriate.

Factor Structure

Cross et al. (2000) used principal components exploratory factor analysis on the combined data from the eight samples. The two negatively worded items were reverse scored before conducting the factor analysis. Examination of the scree plot revealed a single factor before the elbow of the plot. In addition, only one factor had an eigen value greater than 1.0, accounting for 47% of the variance. The 11 items all loaded on the first factor between .59 and .77 (Cross et al., 2000).

Descriptive Statistics

The mean scores in the Cross et al. (2000) study ranged from 54.01 to 58.10. Skewness and kurtosis across the eight samples in the Cross et al. study ranged from -.81 to -.29 and -.02 to 1.41, respectively. In Study 1, the mean was 57.11 (SD = 9.44), skewness was -.33, and kurtosis was -.35. In Study 2, the mean was 61.05 (SD = 7.23), skewness was -.31 and kurtosis was -.01.

Reliability

Internal consistency. Cross et al. (2000) reported coefficient alphas ranging from .85 to .90 for the eight samples. The combined coefficient alpha for the eight samples was .88 ($N = 4,288$). In Study 1 and Study 2, the coefficient alphas were .87 and .85, respectively. Cross et al. reported average inter-item correlations ranging from .35 to .46, with item-total correlations from the eight samples ranging from .54 to .73. The combined inter-item correlation for the combined samples ranged from .25 to .66, with a mean of .41 (Cross et al.).

Test-retest. Cross et al. (2000) tested the test-retest reliability of the RISC Scale by administering the RISC Scale at one or two month intervals to participants in two of the samples. The one-month test-retest reliabilities were .74, $p < .001$, $n = 405$, and .76, $p < .001$, $n = 46$ (Cross et al., 2000). The two-month test-retest reliabilities were .73, $p < .001$, $n = 67$ and .63, $p < .001$, $n = 317$.

Validity

Convergent Validity

Measures of interdependence and collectivism. Although the RISC Scale is based on relational-interdependence rather than collectivism, it should be correlated with the other measures of interdependence and collectivism. Cross et al. (2000) administered a number of measures that tap constructs related to interdependence and collectivism. The Communal Orientation Scale (Clark et al., 1987), measures the degree to which people are responsive to the needs of and feel responsible for the welfare of close others. The Interdependent Self-Construal Scale (Singelis, 1994) is based on cultural differences in the self, as described by Markus and Kitayama (1991). The Collective Self-Esteem Scale (Luhtanen & Crocker,

1992) measures how positive one's social identity is. The Expressivity subscale of the Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1974) measures communal orientation.

Cross et al. (2000) also designed two questions to assess the validity of the RISC Scale. The first question was, "When you think about yourself, how important are your relationships with others for your self-concept?" The question was answered using a 5-point Likert-type scale ranging from 1 (not at all important) to 5 (extremely important). The second question was, "Some people tend to see themselves as very independent and separate from others, whereas others are more likely to think of themselves as interdependent and connected in important ways to their close friends. Which type of person do you think you are?" The question was answered using a 5-point Likert-type scale ranging from 1 (very independent) to 5 (very interdependent).

Cross et al. (2000) found that the RISC Scale was moderately correlated with the Communal Orientation Scale ($r = .41$), the group-oriented Interdependent Self-Construal Scale ($r = .41$), the Expressivity subscale of the Personal Attributes Questionnaire ($r = .32$), and the Collective Self-Esteem Scale ($r = .37$). The RISC Scale was also correlated with the importance of relationships item ($r = .56$) and the self-categorization item ($r = .31$).

Personality measures. One important component of the relational-interdependent self-construal is empathy for others (Surry, 1991). Davis's (1980) Empathic Concern subscale measures respondents' degree of concern and sympathy for others. Davis's (1980) Perspective Taking subscale measures respondents' ability to see things from another perspective. Cross et al. (2000) argued that in order for individuals with well-defined relational self-construals to maintain self-defining close relationships, they would need to be

attuned to the thoughts and feelings of close others. As predicted by Cross et al., the RISC Scale was positively correlated with empathic concern ($r = .34$), although it was weakly correlated with perspective taking ($r = .13$). Hotelling tests performed by Cross et al. revealed a significantly stronger association between the RISC Scale and empathic concern than between the RISC Scale and perspective taking, $t(2723) = 11.92$, $p < .001$.

Cross et al. (2000) also predicted that the RISC Scale should be related to agreeableness and extroversion, both interpersonal traits from the NEO-FFI measure of the Five Factor Model (Costa & McCrae, 1992). As predicted, the RISC Scale was related to agreeableness ($r = .35$) and extroversion ($r = .28$). In addition, the RISC Scale was related to conscientiousness ($r = .23$).

Discriminant Validity

Measures of independence or individualism. Cross et al. (2000) gave participants two measures of independence or individualism. The first was the Independent Self-Construal Scale (Singelis, 1994), which is a measure of the cross-cultural conceptualization of the independent self-construal. The second was the Instrumentality subscale of the Personal Attributes Questionnaire (Spence et al., 1974), which is a measure of an independence orientation. Because interdependence and independence are thought to be orthogonal, Cross et al. predicted that the RISC Scale would not be related to these measures of independence. As predicted, the RISC Scale was not related to the Independent Self-Construal Scale ($r = .08$) or the Instrumentality subscale of the Personal Attributes Questionnaire ($r = -.06$).

Personality measures. Cross et al. (2000) predicted that interdependence would not be related to the neuroticism or openness to experience subscales of the NEO-FFI measure (Costa & McCrae, 1992) of the Five Factor Model. As predicted, there was no relation

between the RISC Scale and neuroticism ($r = .08$) or openness to experience ($r = .09$). In addition, Hotelling Tests revealed a significantly stronger association between the RISC Scale and agreeableness, extroversion, and conscientiousness than the RISC Scale and neuroticism and openness to experience, $t(625) > 2.44$, $p < .02$ (Cross et al., 2000).

Social desirability. A measure that is highly correlated with social desirability raises suspicion about the accuracy of the scores obtained from the measure. Such findings indicate that participants may be answering questions in order to put themselves in the most favorable light. Cross et al. (2000) examined the relation between the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) and the RISC Scale. The correlation was $-.05$.

Measures of well-being. Cross et al. (2000) did not predict a relationship between the RISC Scale and measures of depression (CES-D Depression scale; Radloff, 1977), life satisfaction (Satisfaction With Life Scale; Deiner, Emmons, Larsen, & Griffin, 1985), optimism (Life Orientation Test; Scheier & Carver, 1985), or self-esteem (Rosenberg Self-Esteem Scale; Rosenberg, 1965). They found that the RISC Scale was unrelated to depression ($r = .03$), life satisfaction ($r = .07$), or self-esteem ($r = .01$). There was, however, a small correlation between the RISC Scale and optimism ($r = .16$).

Criterion Validity

Western women are thought to have higher relational-interdependent self-construals than Western men. Cross et al. (2000) found that across all eight samples, women scored significantly higher than men on the RISC Scale. In the current study, women in Study 1 had significantly higher RISC Scale scores than men, whereas women in Study 2 did not have significantly higher RISC Scale scores than men.

Summary

The Relational-Interdependent Self-Construal Scale is a psychometrically sound measure of the relational-interdependent self-construal construct. This single-factor measure exhibited strong internal consistency across a large number of samples. It also demonstrated good test-retest reliability.

The RISC Scale also demonstrated excellent convergent and discriminant validity. The RISC Scale was related to other measures of interdependence. The relation, however, was not so strong as to suggest that the RISC Scale was measuring the identical constructs measured in the collective interdependence measures. Likewise, the RISC Scale was related to empathic concern, which theorists believe is an important dimension of the relational self-construal (Surry, 1991). As expected, the RISC Scale was unrelated to measures of independence, social desirability, neuroticism, depression, self-esteem, and life satisfaction. The RISC Scale also demonstrated criterion-related validity. Women scored higher than men on the RISC Scale in all of the Cross et al. (2000) samples, as well as the Study 1 sample. The results from Cross et al. suggest that the RISC Scale is a good measure of the relational-interdependent self-construal.

CHAPTER 3. STUDY 1: THE RELATIONAL-INTERDEPENDENT SELF-CONSTRUAL AND THREATS TO THE SELF

Overview of the Study

In this study, participants' intelligence was threatened by learning that they had performed more poorly on a reasoning test than their partner (a friend or a stranger) had. The situation forced participants to make upward comparisons with their partner. This situation allowed me to test whether high relationals paired with a close friend respond as predicted by social comparison theory and the self-evaluation maintenance (SEM) model. Because high relationals tend to find relationships self-enhancing, I predicted that high relationals paired with a friend would not respond as negatively to the upward comparison as low relationals or high relationals paired with a stranger.

Participants brought a close, same-sex friend to the laboratory for a group problem solving study. Participants were seated in individual cubicles for the duration of the experiment. After completing a number of questionnaires, participants took a test that measured analytical and logical reasoning skills. After completing the test, the experimenter told the participants whether they were assigned to work with their friend or a stranger on the group portion of the study. Then participants completed a filler task while their test was supposedly scored by the experimenter. Participants were told that they had scored in the 42nd percentile and that their partner had scored in the 86th percentile on the reasoning test. Following the test feedback, participants completed a mood measure, a partner rating questionnaire, and a helping measure (in which participants selected the number of cards they wanted to sort from a large pile of cards, leaving the remainder for their partner).

Hypotheses

Hypothesis 1

Social comparison theory posits that being confronted with someone who performs at a higher level than oneself (i.e., an upward comparison target) should lead to increased levels of negative affect. Furthermore, the self-evaluation maintenance model argues that if the upward comparison target is a close friend, the individual should experience even higher levels of negative affect than if the person is a stranger. These theories are based on the notion that individuals can only feel happy for their own accomplishments. For individuals with high relational-interdependent self-construals, however, being outperformed by a close friend may be a positive experience because the friend's success would be incorporated into the self-concept. I predicted that individuals with high relational self-construals who are outperformed on a test by a friend will experience less negative affect than individuals with high relational self-construals who are paired with a stranger or than individuals with low relational self-construals in either condition.

Hypothesis 2

One response to a threat to the self is to derogate the cause of the threat (Brown & Gallagher, 1992; Crocker, Thompson, McGraw, & Ingerman, 1987). In the case of being outperformed on an important intellectual test, social comparison theory suggests that the individual would attempt to derogate the upward comparison target on non-intellectual dimensions, such as social and personality dimensions (Gibbons & Boney-McCoy, 1991). According to the self-evaluation maintenance model, such derogation would be more likely to occur if the target was a close friend. For individuals with high relational-interdependent

self-construals, however, derogating a close friend should not make the individual feel better. Because for such people, derogating a close friend would be in part derogating the self and also potentially threatening the important relationship. I hypothesize that individuals with high relational self-construals who are outperformed on a test by a friend will be less likely to derogate their partner than individuals with high relational self-construals who are paired with a stranger or than individuals with low relational self-construals in either condition.

Hypothesis 3

Past research has demonstrated that when people feel threatened by the performance of a close other, they are less likely to provide help to that individual (Tesser & Smith, 1980). Individuals with high relational self-construals who have been outperformed by a friend should feel less threatened by the event than low relationals and therefore more likely to help their friend. I predict that individuals with high relational self-construals who are outperformed on a test by a friend will be more helpful to their partner than individuals in the other conditions.

Method

Participants

Participants were 91 pairs of friends (52 men and 130 women) recruited from the psychology participant pool. Participants were asked to bring a close, same-sex friend to a study on group problem solving. Same-sex friend pairs were used to control the type of relationship among participants and also because same-sex pairs increase feelings of similarity, which should make comparisons more likely. Participants completed the study in groups of two or groups of four, $N = 80$ and $N = 102$, respectively. When only one pair was scheduled for a session, the experimenter wrote bogus names on the sign up sheet and

pretended that an additional pair of friends completed the study in adjacent cubicles. Of the participants who reported being suspicious of an aspect of the experiment, eight completed the study in a group of four and five completed the study in a group of two. A chi-square test of association between suspicion and number of pairs scheduled in the session failed to find a significant difference, $\chi^2(1) = 0.17$, $p > .05$, suggesting that conducting the study with one pair rather than two pairs did not affect suspicion rates.

Participants were randomly assigned to either the friend condition or the stranger condition using a random number table. To reduce the problems of non-independence, the two members of a friend pair were never assigned to the same condition. The first person in the friend pair to walk through the laboratory door was assigned to whichever condition was indicated by the random number table. The second person in the friend pair was assigned to the opposite condition. The friend pairs never interacted with each other during the study, so they did not know that their friend was assigned to the opposite condition. Assignment took place midway through the study.

A total of 22 participants were excluded from all analyses. This included the exclusion of 4 participants (2 men and 2 women) who were not American citizens. Non-Americans were excluded because the focus of this study was relational-interdependence, not collective interdependence. Fourteen participants (3 men and 11 women) were excluded due to suspicion regarding the experiment (7.7% suspicion rate). In addition, 4 participants (2 men and 2 women) were excluded after failing to identify correctly their assigned condition (friend or stranger) in a manipulation check in which they indicated if their partner was their friend or a stranger. All of these participants incorrectly marked that they were partnered with their friend when they were actually assigned to the stranger condition.

Of the suspicious participants, six were randomly assigned to the stranger condition and eight were randomly assigned to the friend condition. A chi-square test of association between condition and suspicion was non-significant, $\chi^2(1) = .31, p > .05$. The suspicion rate was not affected by condition. To test if the suspicion rate was affected by which of the two experimenters conducted the study, a chi-square test of association was run. The results of the chi-square test of association between experimenter and suspicion was non-significant, $\chi^2(1) = 2.90, p > .05$. Which experimenter conducted the study did not have an effect on suspicion rates.

To test for a self-selection bias, RISC Scale scores of the participants in this study were compared with RISC Scale scores of a group of psychology students who participated in the Spring 1999 scale evaluation session (see Table 3.1). An independent groups t-test revealed no significant difference between RISC Scale scores of the two groups, $t(779) = -1.15, p > .05$. In addition, there was no significant difference in RISC Scale scores between the men in this study and the men in the scale validation session, $t(291) = -.20, p > .05$.

Table 3.1. Study 1 and Spring 1999 Scale Validation Relational-Interdependent Self-
Construal Scale Means and Standard Deviations by Gender.

Sample	Men			Women			Total		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
Study 1	54.40	9.84	45	58.17	9.10	115	57.11	9.44	160
Mass-testing Spring 1999	54.73	10.17	248	60.49	10.47	362	58.10	10.68	621

There was, however, a significant difference in RISC Scale scores between the women in this study and the women in the scale validation session, $t(475) = -2.29, p < .05$. Female participants in this study scored significantly lower on the RISC Scale than female participants in the scale validation study (see Table 3.1). Female participants in this study, however, did score significantly higher on the RISC Scale than male participants, $t(158) = -2.30, p < .05$.

Procedure

As soon as the participants entered the laboratory, they were seated in individual cubicles with the door shut. The experimenter asked participants to read and sign the informed consent and gave the participant either two extra credit points or a ticket for a \$50 drawing. The experimenter met with each participant individually to discuss the purpose of the study. Participants were told the following:

Group projects are becoming increasingly common in both educational and industrial settings. Psychologists are trying to identify what makes an effective group. Some researchers have focused on how the size of the group affects group problem solving abilities. In this study, we are testing whether the degree of familiarity between group members makes a difference in group problem solving tasks. If we find that the familiarity of the group members affects how creative and effective people are as problem solvers, it could have a large impact on how schools and businesses put together groups.

To test this hypothesis, we have asked you to bring a close, same-sex friend into the laboratory. Two pairs of friends (four people) are scheduled for each session.

Later in the study, you will be assigned to a partner. Your partner will either be your friend, or be one of the two other participants who you do not know. By randomly pairing you up with either a friend or a stranger, we will be able to test how degree of familiarity affects group problem solving performance. To make this study work correctly, we are not going to assign you a partner until later in the study.

Participants received three questionnaires: A personality questionnaire, a personal interests questionnaire, and a friendship questionnaire. The personality questionnaire packet contained the Relational-Interdependent Self-Construal Scale (Cross et al., 2000; see Appendix A). The personal interests questionnaire contained a number of basic questions designed to provide partners with information about the participant (see Appendix B). To ensure that everyone brought a close friend, participants also filled out a friendship questionnaire about their relationship with their friend (see Appendix C). The questionnaire packet took approximately 15-20 minutes to complete.

Next the experimenter explained:

When we evaluate you during the group problem solving task, it is important to know how good each member of the group is at problem solving when he or she works alone. You are now going to take a test of analytical and logical reasoning skills. These skills are essential to success both in college and on the job. You will be taking the Standardized Reasoning Test (SRT), which is one of the most commonly used measures of reasoning skills. The SRT was developed to quickly and accurately assess your general thinking abilities. This timed test taps general thinking abilities

that are not related to how many years of school you have had. A high score on the SRT is related to better performance in college and higher success on the job. Because it is a timed test, be sure to work as quickly as you can while still maintaining accuracy.

Participants completed the Standardized Reasoning Test (SRT), which was comprised of 10 analytical items taken from the LSAT and the Graduate Record Exam (see Appendix D). Participants had 15 minutes to complete the SRT.

At the end of the allotted time, the experimenter returned to the cubicle and assigned the participant to the friend or stranger condition. In the friend condition, the experimenter said, "You have been randomly assigned to the friend condition, which means that you will be working with your friend on the group problem solving task." In the stranger condition, the experimenter said, "You have been randomly assigned to the stranger condition, which means that you will be working with one of the participants here today that you do NOT know on the group problem solving task." Participants in the friend condition received their friend's actual personal interests form, whereas participants in the stranger condition received a standardized personal interest form (see Appendix E). Then the experimenter left to score the Standardized Reasoning test. Participants read the personal interest forms to (a) make them feel more comfortable when rating their partner for the partner rating questionnaire and (b) fill time during the supposed scoring of the SRT.

After 4 minutes, the experimenter returned to the cubicle with the test results, saying "Oftentimes, when people work together on a group project, they have some idea about the ability level of their partner. To capture that in the lab, we have given you both your score

and your partner's score on the Standardized Reasoning Test." The experimenter handed a printed scoring sheet with the test numbers written in pen to the participant (see Appendix F), saying:

You scored at the 42nd percentile, which means that you scored at or above 42% of college students. It looks like your partner scored at the 86th percentile, which means your partner scored at or above 86% of the college students. Sometimes it is easier for people to understand their scores when they are graphed. This is where you scored, and this is where your partner scored.

After pointing to the spots on a graph, the experimenter left the scoring sheet and the personal interests questionnaire with the participant.

Participants were left alone for 3 minutes, at which point the experimenter asked the participant to fill out a number of questionnaires, explaining that:

Past research suggests that mood can affect how people perform on group projects. We are interested in what group members are thinking and feeling, so we'd like you to fill out a few measures for us. This questionnaire packet will remain confidential-- your partner will not see the results of this questionnaire packet.

Then participants completed a questionnaire packet containing the Positive and Negative Affect Scale (PANAS: see Appendix G) and the partner rating questionnaire (see Appendix H). This questionnaire packet took approximately 10 minutes to complete.

After participants completed the dependent measure questionnaire packet, the experimenter explained that:

The group problem solving task is based on these cards. At the end of the session, the cards get mixed together. So, before we can move on to the group project, these cards need to be sorted back into their original piles. The cards have to be sorted on a number of dimensions and you really have to concentrate when you sort them because it's a pretty complex sorting procedure. Why don't you pick the number of cards you want to sort. Whatever you don't take will be given to your partner to sort.

The experimenter handed the participant a stack of 160 cards and took the cards that the participant did not select. After participants selected the number of cards they wanted to sort, they filled out a manipulation check questionnaire (see Appendix I), which was described as the final questionnaire in phase one of the study.

Upon completion of the final questionnaire, the experimenter probed for suspicion by asking if the participant had any questions about the study and if the participant found anything confusing or odd about the study. Then the experimenter gave the participant a written debriefing form (see Appendix J). After participants read the debriefing form, the experimenter made sure that they understood that (a) their test score was fabricated, (b) their partner's test score was fabricated, and (c) we were asking them to refrain from discussing the study with their friends.

Materials

Relational-interdependent self-construal. The relational-interdependent self-construal was measured using the 11 item Relational-Interdependent Self-Construal Scale (RISC Scale; Cross et al., 2000; see Appendix A). Participants indicate the degree to which they agree with each item using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The possible range of scores is from 11 to 77. High scores indicate higher levels of interdependence. An example of an item is, “My close relationships are an important reflection of who I am.” In this study, the reliability of the RISC Scale was .87. See Chapter 2 for a detailed discussion of the psychometric properties of the RISC Scale.

Mood. Positive and negative affect were assessed using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS consists of two 10-item subscales (see Appendix G). The Positive Affect (PA) subscale measures participants' energy levels. High PA is associated with high energy, enthusiasm, and concentration, whereas low PA is associated with lethargy and sadness. The Negative Affect (NA) subscale measures participants' level of distress. High NA is associated with anxiety, anger, and other aversive moods, whereas low NA is associated with tranquility and calmness. Participants were asked to read a number of words and indicate the extent to which they felt that way right now using a seven point Likert-type scale ranging from 1 (very slightly or not at all) to 7 (extremely). Examples of items included: “Excited” (PA) and “Hostile” (NA). Possible scores on the subscales range from 10 to 70, with higher scores indicating higher levels of affectivity. Watson et al. (1988) reported high internal consistency for both the PA and NA subscales, coefficient alpha = .89 and .85, respectively. In this study, the reliability of the PA and NA subscales was .87 and .85, respectively. The

PANAS has demonstrated excellent construct validity with mood, depression, and anxiety measures (Watson et al., 1988). No hypotheses were made regarding the PA subscale, which was included to mask the true purpose of the mood questionnaire, which was to examine levels of negative affect.

Partner derogation. The partner derogation questionnaire was based on a partner rating scale developed by Gibbons and Boney-McCoy (1991). The original scale consisted of four items related to academic competence and one item related to liking. An additional eight items were created by the author to increase the number of liking-related items on the evaluation (see Appendix H). Six of the additional items were negatively worded to reduce the impact of the acquiescent response set. A 7-point Likert-type scale ranging from 1 (not at all) to 7 (extremely) was used. A sample item from this scale is, "How competent is your partner?" After reverse scoring the seven positively worded items, the 13 items were summed to create a composite partner derogation score (coefficient alpha = .89). Higher scores indicate more partner derogation.

Cards. Cards for the card sorting task consisted of 160 14 cm x 10.5 cm colored cards. Each card had a common noun printed in the center of the card. Participants were asked to select the number of cards they would like to sort, with the understanding that the remainder of the cards would be given to their partner to sort. The experimenter stressed that the sorting task was difficult and required additional training. The number of cards selected ranged from 1 to 121 and the average number of cards selected was 82.37 (SD = 20.32).

Friendship questionnaire. The friendship questionnaire was designed to ensure that all participants brought close friends to the experiment (see Appendix C). The first 13 items were open ended items that asked questions about the friendship and basic background

information about the participant and his or her friend. The 13 items created eight categories: when the friends met, how they met, common classes taken at ISU, telephone numbers, number of siblings, hometown, major, and career goals. The next set of questions asked the participant to rate the friendship on four dimensions using a seven point Likert-type scale. The questions asked (a) how close you are to your friend, (b) how much do you like your friend, (c) how often do you see your friend outside of class, and (d) how much do you enjoy being with your friend? These items were summed to create a composite closeness item, with higher scores reflecting higher levels of closeness.

Two trained raters coded the open-ended friendship items. The raters were blind to condition and friendship score. To code the items, the raters had to determine if the participant correctly answered the friendship questions and the basic background information about his or her friend. For example, if the participant wrote that her friend was a psychology major and the friend wrote that she was a biology major, the rater marked the participant's answer as incorrect. Inter-rater reliabilities for the eight categories are listed in Table 3.2. The data from four pairs of friends were lost before the coding, resulting in lower N's for the coded items than the closeness score.

Knowledge of the friendship scores could range from 1 to 8, with higher scores indicating higher knowledge about the partner. The relation between closeness, knowledge of the friendship, and friendship length is listed in Table 3.3. The significant correlations between closeness and knowledge of the friendship and between closeness and friendship length provide evidence of convergent validity for the closeness measure.

For the purposes of this study, close friends are defined as individuals who have known each other for at least 6 weeks (see Tesser & Smith, 1980) and received a composite

Table 3.2. Inter-Rater Reliabilities for the Study 1 Open-Ended Friendship Questions.

	Kappa
How long knew friend	.49
How met friend	.58
Listing of classes taken with friend	.69
Friend's telephone number	.94
How many siblings friend has	.98
Friend's hometown	1.00
Friend's major	.87
Friend's career goals	.86

Table 3.3. Means, Standard Deviations, and Correlations among Friendship Variables and the Relational-Interdependent Self-Construal Scale in Study 1.

	<u>M</u>	<u>SD</u>	<u>N</u>	RISC Scale	Closeness	Knowledge of Friendship
Closeness	23.33	3.61	160	.13	----	
Knowledge of Friendship	6.39	1.30	152	.01	.28**	----
Friendship Length	2.54	3.63	152	.05	.23**	.14

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

closeness score of at least 16. If a participant's closeness score was less than a 16, the open-ended items of both that participant and his or her friend were individually examined. For those pairs that did not meet the minimum composite closeness score requirement, at least five of the seven open-ended items on each of their questionnaires had to match in order to be included in the study. In this study, 2 participants had composite closeness scores of 14 and 4 participants had composite closeness scores of 15. Of the 6 participants with closeness scores less than 16, 2 were men and 4 were women. None of the participants was excluded from the study, however, because 3 participants answered 5 knowledge of the friendship items correctly and 3 participants answered 7 knowledge of the friendship items correctly.

Final questionnaire. The final questionnaire assessed background information, the manipulation checks, reactions to the Standardized Reasoning Test, and reactions to the experiment (see Appendix I). Participants were asked to write down their score and their partner's score on the SRT to ensure they remembered that their score was lower than their partner's score. To ensure that participants understood which condition they were in, they were asked to indicate who their partner was (a friend or a stranger). Participants also indicated their ethnicity, gender, and citizenship status.

To assess participants' reactions to the Standardized Reasoning Test (SRT), participants were asked to rate (a) how accurate their SRT score was, (b) how satisfied they were with their SRT score, and (c) how accurate they thought their partner's SRT score was. All three questions used a 7-point Likert-type scale ranging from 1 (not at all) to 7 (extremely). Finally, participants were asked to rate the experiment and the experimenter and write down any questions they had about the study.

Personal interests questionnaire. The personal interests questionnaire contained six open-ended questions about participants' interests, major, credit load, favorite TV show, group membership, and leadership positions (see Appendix B). In the friend condition, the participant read his or her partner's completed personal interests questionnaire. In the stranger condition, the participant read a standardized form that supposedly was written by their partner (see Appendix E). The standardized answers were developed by selecting the most common answers that participants in the pilot study gave when answering the personal interests questionnaire. Participants received information about their partner so they would feel more comfortable filling out the partner rating questionnaire.

Standardized Reasoning Test. This test combined six questions from the analytical reasoning section of the LSAT and four questions from the analytical reasoning section of the GRE (see Appendix D). The LSAT is a standardized test used to select students for law school and the GRE is a standardized test used to select students for graduate programs. The test was modified based on the pilot study (see Appendix K). Participants had 15 minutes to complete the test. The mean score on the 10-item test was 6.01, SD = 1.89. Because 13 participants received an actual score of 9 or 10, it was possible that they were suspicious of the low score the experimenter gave them. There was no significant difference, however, in test scores for suspicious (M = 5.71, SD = 1.73, N = 14) and unsuspecting (M = 5.96, SD = 1.89, N = 168) participants, $t(180) = -0.47, p > .05$. This suggests that the test was difficult enough that people were unsure of how they had actually performed.

Standardized Reasoning Test results form. The Standardized Reasoning Test results form was a standardized form containing bogus test results for both the participant and his or her partner (see Appendix F). The bogus scores were hand written in pen. At the bottom of

the page was a normal distribution. The experimenter marked off the approximate locations of the participant's score and the partner's score on the distribution and verbally explained what it meant. Participants learned that they had scored in the 42nd percentile and that their partner had scored in the 86th percentile.

Comparison of Participants

Because this study required close friends to sign up for the study, psychology research pool participants needed to have the option of bringing a friend who was not enrolled in a psychology class. Participants enrolled in an introductory psychology class (psychology participants) received 2 extra course credit points in exchange for their participation. If the participant's friend was not taking an introductory psychology class (non-psychology participants), he or she was entered into a \$50 drawing held at the end of each semester. In the 1998 Fall semester drawing, which was awarded at the end of the semester, one participant was entered in the drawing. In the 1999 Spring semester drawing, which was awarded at the end of the semester, 7 participants were entered in the drawing. Five of the non-psychology participants were randomly assigned to the friend condition and three were assigned to the stranger condition. None of the non-psychology students reported being suspicious.

To ensure that the non-psychology participants did not differ from the psychology research pool participants, a series of t-tests comparing the two groups were performed on the RISC Scale and the friendship variables (closeness, knowledge of friendship, and friendship length). There were no significant differences between the groups. Thus, the non-psychology participants did not differ from the psychology research pool participants on the assessed variables.

Results

Data Analysis

All hypotheses in this study were most appropriately tested using planned comparisons rather than examining interactions. To test the planned comparisons, the RISC Scale had to be dichotomized so that a high relational self-construal group and a low relational self-construal group could be created. A median split was used to create the two relational-interdependent groups, resulting in the creation of four experimental groups: low relationals paired with a stranger, high relationals paired with a stranger, low relationals paired with a friend, and high relationals paired with a friend. Table 3.4 shows the number of high and low relationals by condition. There were differing distributions in the two conditions, resulting in uneven cell sizes.

A series of planned comparisons was performed comparing the high RISC Scale group paired with a friend to the three other groups (high RISC Scale group paired with a stranger, low RISC Scale group paired with a friend and low RISC Scale group paired with a stranger). To test the comparison, the high RISC Scale group paired with a friend was weighted -3 and the remaining three groups were each weighted $+1$.

Table 3.4. Number of Participants by RISC Group (High or Low Relational-Interdependent Self-Construal) and Condition (Stranger or Friend) in Study 1.

	Stranger Condition	Friend Condition
Low Relational Self-Construal	36	42
High Relational Self-Construal	45	37

To test the hypotheses using the RISC Scale as a continuous measure, a series of hierarchical regressions were also performed. All continuous predictor variables were centered. The stranger condition was coded “0” and the friend condition was coded “1”. Interaction terms were created by obtaining the product of the variables.

Means, standard deviations, and intercorrelations for all variables are listed in Table 3.5. The RISC Scale was used as a continuous measure in all correlations. An alpha level of .05 was used for all statistical tests.

Manipulation Checks

Participants were supposed to experience ego threat upon learning their score on the SRT. To ensure that the score created distress, participants were asked to rate how satisfied they were with their score using a seven point Likert-type scale ranging from 1 (not at all) to 7 (completely). The average score was 1.81 (SD = 1.11), indicating that participants were quite dissatisfied with their score on the test. Participants in the friend and stranger condition

Table 3.5. Study 1 Means, Standard Deviations, and Intercorrelations.

Measure	<u>M</u>	<u>SD</u>	N	1	2	3
1. RISC Scale	57.11	9.44	160	----		
2. Negative Affect	14.59	5.23	158	.09	----	
3. Partner Derogation	29.75	10.61	158	-.10	.03	----
4. Number of cards taken	82.37	20.32	160	-.13	-.02	.11

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

were equally dissatisfied with their scores, $M = 1.73$ ($SD=1.12$) and $M = 1.88$ ($SD = 1.10$), respectively, $t(157) = .80$, $p > .05$.

To ensure that participants understood that their score was lower than their partner's score, participants were asked to write down both scores. Over 88% of participants ($N = 141$) correctly indicated that they had received a score of 42. Incorrect scores ranged from 38 to 49. The largest percentage of incorrect responses was for 46 (5%). Almost 90% of participants ($N = 143$) correctly indicated that their partner received a score of 86. Incorrect responses ranged from 80 to 89. The largest percentage of incorrect responses was for 82 (4.4%). Given the most common errors, it seems likely that some participants inverted the final digit of the two scores. In all cases, participants clearly understood that their score was far lower than their partner's score.

Friendship Data

To determine if aspects of the friendship were associated with participants' RISC Scale scores, a series of correlations were computed. There were three measures of friendship: closeness, knowledge of the friendship, and friendship length (see Table 3.3 for means and standard deviations). Closeness was measured by asking participants to rate their friendship on four dimensions. Knowledge of the friendship was measured by having two trained coders add up the number of correct answers each participant gave about their partner's background and life (e.g., hometown, phone number, and major). The average friendship length for participants in this study was 2.54 years, although the range was from .13 years (1.5 months) to 18 years. The skewness of friendship length was 2.50. A correlation between the RISC Scale and friend closeness, friendship length, and number of items correctly answered about friend, failed to reveal significant correlations (see Table

3.3). This suggests that the degree to which important relationships are incorporated into the self did not relate to the quality of the friend participants brought to the study. This is not surprising, as high relationals are not expected to have better relationships than low relationals; rather high relationals are more likely to incorporate close relationships into the self than low relationals.

Negative Affect

High relationals paired with a friend were expected to experience less negative affect than the other three groups. An examination of the means revealed that the high relationals paired with a friend experienced higher levels of negative affect than the other groups, with low relationals paired with a friend experiencing the lowest levels of negative affect. The test of the planned contrast among the four groups revealed a significant difference between the high relationals paired with a friend and the other three groups, $t(151) = -2.45, p < .05$. Contrary to prediction, the participants in the high relational self-construal/friend condition actually reported higher negative affect than the other three groups (see Table 3.6). Follow up Scheffe post-hoc comparisons, however, failed to reveal any significant differences among pairs of groups.

To provide a clearer picture of the data, the simple effects were examined. Means, standard deviations, and intercorrelations for variables in the friend condition are reported in Table 3.7. Among participants in the friend condition, high relationals were predicted to report lower negative affect than low relationals. An examination of the correlation between the RISC Scale and negative affect in the friend condition failed to reveal a significant correlation, $r = .19, p > .05$. In the friend condition, a medium effect size (Cohen, 1988) was detected between the low and high relationals, $d = .55$. Means, standard deviations, and

Table 3.6. Negative Affect, Partner Derogation, and Number of Cards Taken Cell Means and Standard Deviations by RISC Group and Condition.

Variable	Condition											
	Friend						Stranger					
	High RISC			Low RISC			High RISC			Low RISC		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
Negative Affect	16.49	6.05	35	13.71	4.05	42	14.18	4.80	45	14.31	5.84	36
Partner Derogation	25.51 _a	9.79	37	27.29 _a	10.43	42	31.47 _{ab}	10.10	45	35.12 _b	9.89	34
Number of Cards Taken	87.05	19.59	37	84.95	11.29	42	74.73	28.58	45	84.08	13.99	36

Note. Means in a row with different subscripts differ significantly at $p < .05$ based on Scheffe post-hoc tests. Higher partner derogation scores indicate more negative evaluations of the partner. RISC = Relational-Interdependent Self-Construal Scale.

Table 3.7. Study 1 Friend Condition Means, Standard Deviations, and Intercorrelations.

Measure	<u>M</u>	<u>SD</u>	<u>N</u>	1	2	3
1. RISC Scale	56.10	9.98	79	----		
2. Negative Affect	14.97	5.21	77	.19	----	
3. Partner Derogation	26.46	10.11	79	-.10	.16	----
4. Number of Cards Taken	85.94	15.66	79	-.11	-.07	-.11

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

intercorrelations for all variables in the stranger condition are reported in Table 3.8. There was not a significant relation between RISC Scale scores and negative affect, $r = -.01$, $p > .05$.

To test whether these findings were due to a gender difference, a hierarchical regression was performed with negative affect as the dependent variable. In the first step,

Table 3.8. Study 1 Stranger Condition Means, Standard Deviations, and Intercorrelations.

Measure	<u>M</u>	<u>SD</u>	<u>N</u>	1	2	3
1. RISC Scale	58.09	8.82	81	----		
2. Negative Affect	14.34	5.26	81	-.01	----	
3. Partner Derogation	33.04	10.11	79	-.19	.04	----
4. Number of Cards Taken	78.89	23.60	81	-.12	-.02	.01

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

gender, condition, and RISC Scale scores were entered. In the second step, the two-way interactions between the three variables were entered, for a total of three interaction terms. In the third step, the three-way interaction between gender, condition, and RISC Scale score was entered. There were not significant main effects for RISC Scale, condition, or gender (see Table 3.9). There was a significant RISC Scale x Gender interaction. For men, the RISC Scale $\beta = .45$ ($t = 3.29$, $p < .01$) and for women the RISC Scale $\beta = -.04$ ($t = -.39$, $p = .70$). For men, higher levels of relational-interdependence were related to higher levels of negative affect, whereas for women relational-interdependence did not predict negative affect. There were no additional significant interactions.

Partner Derogation

High relationals paired with a friend were hypothesized to be less likely to derogate their partner than low relationals or high relationals paired with a stranger. Examining the means, high relationals paired with a friend engaged in less partner derogation than the other groups. The planned comparison revealed a significant difference between the high relationals paired with a friend and the other three groups, $t(151) = -2.82$, $p < .01$ (see Table 3.6). As predicted, high relationals paired with a friend were more positive about their partner than were the other three groups.

Follow up Scheffe post-hoc comparisons revealed significant differences between participants in the friend condition and low relationals paired with a stranger. The high relationals paired with a stranger did not significantly differ from the other groups. High relationals paired with a friend and low relationals paired with a friend evaluated their partner more positively than low relationals paired with a stranger.

An examination of the simple effects in the friend condition failed to find a

Table 3.9. Hierarchical Regression for Variables Predicting Negative Affect.

Predictor	B	SE	β	t
<u>Step 1</u>				
RISC Scale	0.05	0.05	.10	1.19
Condition	0.85	0.84	.08	1.01
Gender	0.18	0.94	.02	0.19
<u>Step 2</u>				
RISC x Condition	0.14	0.09	.19	1.54
RISC x Gender	-0.25	0.10	-.37	-2.60*
Condition x Gender	-2.50	1.86	-.23	-1.35
<u>Step 3</u>				
RISC x Condition x Gender	-0.09	0.19	-.10	-0.47

Note. $N = 158$. $R^2 = .02$ ($p > .05$) for Step 1; $\Delta R^2 = .06$ ($p < .05$) for Step 2; $\Delta R^2 = .001$ ($p > .05$) for Step 3.

Condition coded "0" for stranger and "1" for friend. Gender coded "0" for men and "1" for women.

Coefficients reported at the step in which the variable was entered. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

significant correlation between RISC Scale scores and partner derogation, $r = -.10$, $p > .05$.

The effect size between the high and low relationals in the friend condition was small (Cohen, 1988), $d = .18$. In the stranger condition, there was not a significant correlation between RISC Scale scores and partner derogation, $r = -.19$, $p > .05$.

To test whether these findings were due to a gender difference, a hierarchical regression was performed with partner derogation as the dependent variable. In the first step, gender, condition, and RISC Scale score were entered. In the second step, the two-way interactions between the three variables were entered, for a total of three interaction terms. In the third step, the three-way interaction between gender, condition, and RISC Scale score was entered. There was a significant main effect for condition and gender (see Table 3.10). Men and individuals in the stranger condition were more likely to derogate their partner than women or individuals in the friend condition. Relational-interdependence was not a significant predictor of partner derogation. There was a significant RISC Scale score x Gender interaction. For men, the RISC Scale β was .13 ($t = .85$, $p = .40$) and for women the RISC Scale β was $-.21$ ($t = -2.35$, $p < .05$). For women, higher levels of relational-interdependence were related to less partner derogation, whereas for men relational-interdependence did not predict partner derogation. There were no additional significant interactions.

Helping

High relationals paired with a friend were hypothesized to be more likely to help their partner by selecting a larger number of cards to sort than low relationals or high relationals paired with a stranger. As predicted, high relationals paired with a friend took more cards than the other groups, although the planned contrast results were not significant, $t(153) = -$

Table 3.10. Hierarchical Regression for Variables Predicting Partner Derogation.

Predictor	<u>B</u>	<u>SE</u>	β	<u>t</u>
<u>Step 1</u>				
RISC Scale	-0.09	0.08	-.09	-1.16
Condition	-6.62	1.54	-.31	-4.29***
Gender	-6.75	1.74	-.29	-3.89***
<u>Step 2</u>				
RISC x Condition	0.12	0.17	.08	0.72
RISC x Gender	-0.38	0.19	-.27	-2.10*
Condition x Gender	-0.24	3.48	-.01	-0.07
<u>Step 3</u>				
RISC x Condition x Gender	0.04	0.36	.02	0.11

Note. $N = 158$. $R^2 = .19$ ($p < .001$) for Step 1; $\Delta R^2 = .02$ ($p > .05$) for Step 2; $\Delta R^2 = .00006$ ($p > .05$) for Step 3.

Condition coded "0" for stranger and "1" for friend. Gender coded "0" for men and "1" for women.

Coefficients reported at the step in which the variable was entered. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

1.45, $p = .15$ (see Table 3.6).

Follow up Scheffe post-hoc comparisons failed to reveal any significant differences among pairs of groups, although there was a near-significant difference between the high relationals paired with a friend and the high relationals paired with a stranger ($p = .06$). The high relationals paired with a friend tended to take more cards than the high relationals paired with a stranger (see Table 3.6).

The simple effects were examined next. Contrary to predictions, in the friend condition RISC Scale scores and number of cards selected were not significantly related, $r = -.11$, $p > .05$. In the friend condition, the effect size between the low and high relationals was small (Cohen, 1988), $d = .13$. In the stranger condition, RISC Scale scores and number of cards selected also were not significantly related, $r = -.12$, $p > .05$.

To test whether these findings were due to a gender difference, a hierarchical regression was performed with the number of cards taken as the dependent variable. In the first step, gender, condition, and RISC Scale score were entered. In the second step, the two-way interactions between the three variables were entered, for a total of three interaction terms. In the third step, the three-way interaction between gender, condition, and RISC Scale score was entered. There was a significant main effect for condition (see Table 3.11). Individuals in the friend condition took more cards than individuals in the stranger condition. There were no additional significant main effects or interactions (see Table 3.11). Thus, gender was not related to the number of cards selected by the participant.

Discussion

It was hypothesized that individuals with high relational self-construals who are outperformed on a test by a friend will experience less negative affect than individuals with

Table 3.11. Hierarchical Regression for Variables Predicting Number of Cards Taken.

Predictor	B	SE	β	t
<u>Step 1</u>				
RISC Scale	-0.19	0.17	-.09	-1.12
Condition	6.84	3.17	.17	2.16*
Gender	-5.61	3.57	-.12	-1.57
<u>Step 2</u>				
RISC x Condition	0.03	0.35	.01	.10
RISC x Gender	-0.09	0.35	-.03	-.23
Condition x Gender	10.34	7.20	.25	1.44
<u>Step 3</u>				
RISC x Condition x Gender	1.14	0.74	.33	1.53

Note. N = 160. $R^2 = .06$ ($p < .05$) for Step 1; $\Delta R^2 = .01$ ($p > .05$) for Step 2; $\Delta R^2 = .01$ ($p > .05$) for Step 3.

Condition coded "0" for stranger and "1" for friend. Condition coded "0" for men and "1" for women.

Coefficients reported at the step in which the variable was entered. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

high relational self-construals who are paired with a stranger or than individuals with low relational self-construals in either condition. Although there was a significant difference between the high relationals paired with a friend and the other three groups, the difference was not in the predicted direction. High relationals paired with a friend reported higher levels of negative affect than the other three groups.

Although the high relationals paired with a friend had the highest negative affect scores, none of the scores was very high. Recall that the minimum score possible on the Negative Affect subscale is 10 and that the maximum score is 70. The mean scores of the four groups ranged from a low of 13.71 to a high of 16.49, hardly demonstrating high levels of negative affect. Participants did indicate that they were highly dissatisfied with their score on the test ($M = 1.81$, $SD = 1.11$), suggesting that the low score did bother them.

High relationals paired with a friend may have experienced more negative affect because they felt threatened by their comparatively low score on the test and also because they felt bad about feeling that way. Recall that having a high relational self-construal does not preclude having a high independent self-construal. For individuals with well-developed relational-interdependent self-construals and well-developed independent self-construals, this could create conflict because they would want to see their friend perform well, but would also want to outperform their friend or perform well themselves.

An analysis of participants' reactions to the test provides further evidence supporting differing reactions to the test. Planned comparisons were performed to test for differences between high relationals paired with a friend and the other three groups on participants' satisfaction with their score, how accurate they thought their score was, and how accurate they thought their partner's score was. Although there were no significant differences

between the high relationals paired with a friend and the other three groups for score satisfaction and score accuracy, there was a significant difference for partner's score accuracy, $t(155) = -2.87, p < .01$.

High relationals paired with a friend thought that their partner's score was more accurate ($M = 5.08, SD = 1.48$) than low relationals paired with a friend ($M = 4.52, SD = 1.64$), high relationals paired with a stranger ($M = 4.27, SD = 1.50$), and low relationals paired with a stranger ($M = 4.00, SD = 1.39$). Choosing not to believe the accuracy of the partner's score may have reduced the impact of the comparison for the low relationals and high relationals paired with a stranger. This could result in lower negative affect scores among these groups because they may have discounted the test results.

Perhaps negative affect should have been measured using a pre-test and a post-test, rather than assessing negative affect after the ego-threat manipulation. Although it would be difficult for the scores to start off much lower than they were after the ego-threat manipulation, it is possible that the change scores would be more useful.

There were two reasons why I did not choose to use a pre-test and a post-test. The first is that the study was already quite long. Adding an additional measure could have caused participants to question how the experimenters expected to include a group-interaction task at the end of an already long study. Second, in past studies in which I have included two mood measures, some participants spontaneously reported figuring out that I was interested in how their mood changed over the course of the experiment. This awareness could have led participants to exhibit demand characteristics, or to become suspicious of the experiment.

Next, I hypothesized that individuals with high relational self-construals who are outperformed on a test by a friend would be less likely to derogate their partner than individuals with high relational self-construals who are paired with a stranger or than individuals with low relational self-construals in either condition. As predicted, high relationals paired with a friend were less likely to derogate their partner than the other three groups.

This finding challenges the self-evaluation maintenance (SEM) model. The SEM model would predict that individuals paired with a friend would be most likely to derogate their partner after being outperformed by their partner. In fact, participants in the friend condition were less likely to derogate their partner than participants in the stranger condition.

Men and women appeared to respond differently to the ego threat. For men, RISC Scale scores predicted negative affect but did not predict partner derogation, whereas for women, RISC Scale scores did not predict affect but did predict partner derogation. Recall that men are more likely to be high independents than women. It is possible that the high relational men in this study also tended to be high independents as well. The results on the test would be especially distressing for individuals who both wanted to be the best (high independents) but also wanted to see their friend do a good job (high relationals). This conflict may have resulted in higher levels of partner derogation among high relational men than among high relational women. If the high relational men were also high independents, the high relational men may have been more motivated to increase their self-evaluation than the high relational women, which could account for the gender difference in partner derogation.

Finally, I predicted that individuals with high relational self-construals who are outperformed on a test by a friend would be more helpful to their partner than individuals in the other conditions. To test this hypothesis, participants were asked to select the number of cards they wanted to sort, with the remaining cards going to the partner to sort. As predicted, the mean number of cards selected by high relationals paired with a friend was higher than the other groups, although the results of the planned comparison were not significant. The effect size was small, suggesting that a larger sample would be needed to increase the power of the test.

The SEM model would predict that being outperformed by a close friend would be more aversive than being outperformed by a stranger, leading to higher levels of partner derogation in the friend condition (or, in this case, less helpfulness). High relationals paired with a friend behaved contrary to the SEM model and behaved consistently with the theory that individuals who included important relationships in the self are motivated to protect the relationship rather than the ego.

The reliability and validity of the card sorting task is unknown, as it was designed for this study. It was used in this study because I wanted to include a behavioral dependent measure. It is possible that the number of cards a participant selects is not a valid measure of helping behavior. Perhaps participants felt awkward selecting the cards in front of the experimenter, who could see the number the participant selected. Although there was a large range of cards selected, the average number of cards was 82.37 ($SD = 20.32$). Having participants select the cards privately may have resulted in a different outcome.

CHAPTER 4. STUDY 2: THE RELATIONAL-INTERDEPENDENT SELF-CONSTRUAL AND THREATS TO IMPORTANT RELATIONSHIPS

Overview of the Study

In this study, I attempted to induce guilt among participants by having them choose to write highly negative statements about their partner (which the partner supposedly read) and telling them that they were going to work on a group project with their partner. To increase feelings of guilt, the experimenter stressed the participants' choice in writing the negative statements. The situation put participants in the position of potentially harming their relationship with their partner. This allowed me to test whether high relationals paired with a close friend were more affected by the guilt-inducing situation than low relationals or high relationals paired with a stranger. Because maintaining close relationships is more important to high relationals, I predicted that high relationals would feel worse and work harder to repair the relationship than low relationals or high relationals paired with a stranger.

Participants brought a close, same-sex friend to the laboratory for a group problem solving study. Participants were seated in individual cubicles for the duration of the experiment. After completing a number of questionnaires, participants were assigned a partner (either their friend or a stranger). The experimenter then let the participant choose the next task using a forced choice paradigm. All participants selected the partner evaluation task in which they agreed to copy a standardized partner feedback form in their own handwriting. This highly negative evaluation of the partner was supposedly given to the partner to read. Following the guilt-inducing task, participants answered a mood questionnaire and a partner rating questionnaire.

Hypotheses

Hypothesis 1

Believing that one is the cause of another person's suffering can lead to feelings of guilt. In this study, participants believe that their partner has read a negative evaluation that the participants wrote. Because the partners' reaction to the evaluation would most likely be negative (i.e., they may feel sad, angry, or unhappy), it is assumed that participants will feel guilty about their actions. For individuals with high relational-interdependent self-construals, making one's friend feel bad should be highly aversive. Not only does it put a strain on the relationship, but also it should cause the participant to share the upset feelings his or her friend is experiencing. I predict that after engaging in a relationship threat-inducing task, individuals with high relational self-construals who are paired with a friend will report feeling more guilt, anxiety, and negative affect than individuals with high relational self-construals who are paired with a stranger or than individuals with low relational self-construals.

Hypothesis 2

After engaging in a behavior that makes an individual feel guilty, an individual may attempt to repair the damage to the relationship that the action caused. One way to enhance the relationship is to compensate the victim. In this study, participants were given the opportunity to describe their partner in extremely positive terms. I predicted that after engaging in a relationship threat-inducing task, individuals with high relational-interdependent self-construals who are paired with a friend would evaluate their partners more positively than individuals with high relational self-construals who are paired with a stranger or than individuals with low relational self-construals in either condition.

Method

Participants

Participants were 77 pairs of American friends, 35 men and 119 women. Participants were recruited from the psychology participant pool and asked to bring a close, same-sex friend to a study on group problem solving. Participants completed the study in groups of two or four, $N = 118$ and $N = 36$, respectively. To simulate another pair, the experimenter wrote bogus names on the sign up sheet and pretended that an additional pair of friends completed the study in adjacent cubicles. Of the participants who reported being suspicious, four completed the study in a group of four and nine completed the study in a group of two. A chi-square test of association between the number of pairs in the laboratory and suspicion was non-significant, $\chi^2(1) = 0.31$, $p = .78$. It appears that the number of participants in the laboratory did not affect suspicion rates.

Participants were randomly assigned to either the friend condition or the stranger condition using the same procedure as in Study 1. Participants remained in individual cubicles for the duration of the experiment.

A total of 20 participants were excluded from all analyses. Two participants who were not a same-sex friend pair, as well as one participant who was not an American citizen, were excluded because they did not meet the basic requirements of the study. In addition, 13 participants (3 men and 10 women) were excluded due to suspicion regarding the experiment (8.4% suspicion rate). Four participants were excluded after failing to identify correctly their assigned condition in a manipulation check. In all cases, the participants incorrectly reported that they were in the friend condition when they were actually in the stranger condition.

Of the suspicious participants, nine were randomly assigned to the stranger condition and four were randomly assigned to the friend condition. A chi-square test of association between condition and suspicion was non-significant, $\chi^2(1) = 2.50, p > .05$. Thus, the suspicion rate was not related to which condition the participant was in. Next, the role of the experimenter in suspicion rates was examined. A chi-square test of association between experimenter and suspicion was non-significant, $\chi^2(1) = .007, N = 147, p > .05$. One participant refused to complete the partner evaluation task. She was debriefed immediately and thanked for her participation.

Contrary to most previous studies using the RISC Scale, men and women in this study did not significantly differ in terms of RISC Scale scores, $t(132) = -.75, p > .05$ (see Table 4.1 for means and standard deviations). A comparison of RISC Scale scores between this study and two mass-testing samples found that the participants in this study scored significantly higher on the RISC Scale than both the Fall 1999 and the Spring 2000 mass-testing samples (see Table 4.1 and Table 4.2). Both men and women in this study scored

Table 4.1. Study 2, Mass-Testing Fall 1999 and Mass-Testing Spring 2000 Relational-Interdependent Self-Construal Scale Means and Standard Deviations by Gender.

Sample	Men			Women			Total		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
Study 2	60.22	8.13	32	61.31	6.95	102	61.05	7.23	134
Mass-testing Fall 1999	53.61	9.96	311	55.54	10.57	459	54.53	10.36	817
Mass-testing Spring 2000	55.53	10.23	290	58.73	9.05	344	57.19	9.69	661

Table 4.2. T-Tests Comparing Relational-Interdependent Self-Construal Scores from Study 2 with Mass-Testing Fall 1999 and Mass-Testing Spring 2000.

Sample	Mass-Testing Fall 1999			Mass-Testing Spring 2000		
	t	df	p<	t	df	p<
Study 2 Total	9.00	949	.001	5.42	793	.001
Men	4.22	341	.001	2.96	320	.05
Women	6.82	559	.001	3.05	444	.01

significantly higher on the RISC Scale than men and women in the two mass-testing samples (see Table 4.2). These results suggest that people who chose to participate in this study were different from people in the general psychology research pool, with men in this study scoring much higher on the RISC Scale, on average, than men in the research participant pool.

Procedure

As soon as the participants entered the laboratory, they were seated in individual cubicles with the door shut. The experimenter asked participants to read and sign the informed consent and gave the participants either one extra course credit or a ticket for a \$50 drawing. The experimenter interacted with each participant individually in his or her cubicle, saying:

Group projects are becoming increasingly common in both educational and industrial settings. Psychologists are trying to identify what makes an effective group. Some researchers have focused on how the size of the group affects group problem solving

abilities. In this study, we are testing whether the degree of familiarity between group members makes a difference in group problem solving tasks. If we find that the familiarity of the group members affects how creative and effective people are as problem solvers, it could have a large impact on how schools and businesses put together groups.

Currently, we are examining how strangers work together in groups. To test this hypothesis, we have asked you to bring a close, same-sex friend into the laboratory. Two pairs of friends (four people) are scheduled for each session. Later in the study, you will be assigned to a partner. Your partner will either be your friend, or be one of the two other participants who you do not know. To ensure that you do not know the other people, I am going to tell you their names. Please tell me if you know either of the people. By randomly pairing you up with either a friend or a stranger, we will be able to test how degree of familiarity affects group problem solving performance. To make this study work correctly, we are not going to assign you a partner until later in the study.

This study will take a little less than one hour. The study actually takes place in two locations. The first half of the study is done in this room and the second half of the study is done in a room designed for group interactions. You will work by yourself for the first portion of the study. You will work with your assigned partner in the second half of the study. When we finish in here, I'll walk you and your partner over to one of the group interaction rooms.

Next, the participants completed a questionnaire containing the Relational-Interdependent Self-Construal Scale (Cross et al., 2000). Because participants received bogus personality information about their partner later in the study, three additional measures (entitled Honesty, Helping scale, and NEO Personality Inventory) were included in the first packet but not scored (see Appendix L). Participants also filled out the personal interests questionnaire, which contained a number of basic questions designed to provide partners with information about the participant (see Appendix M). To ensure that everyone brought a close friend, participants also filled out a questionnaire about their relationship with their friend (see Appendix C). Once participants finished the questionnaire packet, they were given an article on group problem solving (Schwartz, 1994) and the experimenter said, "To make you more aware of current thoughts about group decision making, we would like you to read this article. While you do that, I'm going to score your personality questionnaire. I'll come back once I've scored your personality test."

While participants read the article, the experimenter assigned participants to the friend or stranger condition and pretended to score the personality questionnaire. Before starting the next phase of the study, the experimenter told the participant to which condition he or she was assigned. The experimenter then gave participants their partner's personal interests questionnaire (see Appendix M). For individuals in the friend condition, their friend's actual questionnaire was used. For individuals in the stranger condition, a standard completed questionnaire was used (see Appendix N). In all cases, the experimenter copied bogus personality and honesty scores onto the bottom of the evaluation before giving it to the participant (see Appendix N). The form indicated that the partner's scores were: 71 for honesty, 79 for emotional stability, 84 for helping, 81 for self-esteem, and 74 for social skills.

The experimenter explained, "The scores are reported in percentiles. For example, a score of 99 means that the person scored at or above 99% of college students. A percentile score of 50 means that the person scored at or above 50% of college students."

The experimenter left the room to give the same information to the partner. Next, the experimenter explained:

In the workplace, groups are often made up of people with different status levels and job descriptions. For example, a manager may work on a project with his or her employees. Although all members work toward the same goal, their responsibilities may be very different.

In this study, we want to simulate the workplace by having one member of the group act as a manager and the other member act as an employee. You have been randomly selected to be the manager and your partner will be the employee. To simulate a workplace situation, we are asking our managers to choose to do one of two tasks: sort stimulus cards after intensive training with the Stanford Analytical Card Sorting System or evaluate your partner (your employee). We've already had a lot of people work on the sorting task, so you'd really help us out if you chose the employee evaluation task. Which task do you choose?

All participants selected the evaluation task. Once the participant selected the evaluation task, the experimenter said:

We have carefully created the feedback that we want you to give your partner, so you do not have to come up with your own evaluation-- it has been developed for you.

We have everyone in the feedback condition give the SAME feedback to their partner so we can see how people respond to receiving the SAME feedback. Does that make sense? Are you willing to help us with this portion of the experiment?

We want you to fill out this form with this standardized feedback. Your partner will get to read your feedback before you engage in the group problem solving task. Your partner, the employee, will not get the opportunity to evaluate you (the manager). Careful research has suggested that the feedback we created is useful in influencing behavior. What we're asking you to write may be very different from the information you have about your partner. That's okay. We want to see how people respond to receiving this specific feedback, regardless of their actual personality characteristics. Would you read this through and tell me if you have any questions?

After the participant read through the evaluation form, the experimenter said, "When we give the feedback form to your partner, we will tell your partner that you wrote this feedback. It's really important that you do NOT tell your partner about this because it will ruin our experiment."

Participants were given a blank partner feedback form (see Appendix O) and a completed partner feedback form. The partner feedback form (see Appendix P) contained a number of negative statements about the partner. After participants copied the form, the experimenter said:

Thanks for choosing to do this—a few people refused to help. Remember, it's important that you don't tell your partner that you chose to copy the form. To make sure your partner understands that you wrote the feedback, please fold up the form and seal it in this envelope. Then sign your name across the back of the envelope.

Then the experimenter took the envelope supposedly to give to the partner.

The participants were left alone for 3 minutes, at which point the experimenter returned and asked the participant to fill out one questionnaire containing a measure of negative affect (see Appendix G), guilt and anxiety (see Appendix Q), and another questionnaire containing the partner rating questionnaire (see Appendix H), saying:

Past research suggests that mood can affect how people perform on group projects. We are interested in what group members are thinking and feeling, so we'd like you to fill out few measures for us. This questionnaire packet will remain confidential-- your partner will not see the results of this questionnaire packet.

Upon completion of the packet, the experimenter then gave the participant a manipulation check and background questionnaire (see Appendix R). The experimenter then probed the participant for suspicion by asking if the participant had any questions about the study and if the participant found anything confusing or odd about the study. The experimenter gave the participant a written debriefing form (see Appendix S). After the participants finished reading the form, the experimenter made sure that the participants knew that the personality information they read about their partner was not accurate, that the actual

personality information was never scored, that no one ever saw the feedback they wrote, and that we were asking them to refrain from discussing the study with people who had not completed it. To prove that no one had read the feedback, the experimenter showed participants the sealed envelope on which they had signed their name.

Materials

The following measures were used in both Study 1 and Study 2: Relational-Interdependent Self-Construal, the friendship questionnaire, Positive and Negative Affect Schedule, and the partner rating questionnaire. Please refer to Study 1 for a full description of these measures. Additional measures used in Study 2 are described below. Refer to Table 4.3 for a complete list of Study 2 reliabilities. To keep the study under 1 hour, the card sorting task was eliminated from this study.

Mood. The Affects Balance Scale (Derogatis, 1975) measures eight affect dimensions, including Guilt and Anxiety (see Appendix Q). The Guilt and Anxiety subscales each contained five items. For each item, participants were asked to indicate how well a

Table 4.3. Reliabilities of Measures Used in Study 2.

	Coefficient Alpha	N
RISC Scale	.85	134
Negative Mood	.91	134
Partner Enhancement	.85	132
Closeness	.73	134

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

word described them right now using a five point Likert-type scale ranging from 1 (not at all) to 5 (very much). Possible scores on the Guilt and Anxiety subscales range from five to 25, with higher scores indicating higher levels of guilt or anxiety. Examples of items from the guilt subscale include: “blameworthy” and “remorseful.” Examples of items from the anxiety subscale include “tense” and “anxious.” The reliability of the Guilt subscale and the Anxiety subscale of the Affects Balance Scale (Derogatis, 1975) was .88 and .79, respectively. The Affects Balance Scale is highly correlated with other measures of affect, thereby demonstrating convergent validity (Derogatis, 1975).

A total of four of the items on the Anxiety and Guilt subscales of the Affects Balance Scale overlapped with items on the PANAS Negative Affect subscale. The correlations among the three measures of negative mood (Negative Affect, Guilt subscale, and Anxiety subscale) were high (see Table 4.4). A principal-components factor analysis and scree test was used on the combined items from the three subscales. The scree test indicated a single factor. The percentage of total variance explained by the factor was 44.98%. The principal components factor analysis results are listed in Table 4.5. Because of the strong associations among the three variables, a composite negative mood variable was used in all analyses. The

Table 4.4. Correlations Among Negative Affect, Guilt, and Anxiety.

	Negative Affect	Guilt
Guilt	.82**	
Anxiety	.86**	.67**

Note. N = 134.

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

Table 4.5. Study 2 Factor Loadings for Combined Negative Mood Measure.

Word	Scale	Factor Loading
Distressed	PANAS Negative Affect	.57
Upset	PANAS Negative Affect	.58
Guilty	PANAS Negative Affect & Guilt	.63
Scared	PANAS Negative Affect	.77
Hostile	PANAS Negative Affect	.35
Irritable	PANAS Negative Affect	.73
Ashamed	PANAS Negative Affect & Guilt	.80
Nervous	PANAS Negative Affect & Anxiety	.78
Jittery	PANAS Negative Affect	.67
Afraid	PANAS Negative Affect & Anxiety	.86
Regretful	Guilt	.73
Remorseful	Guilt	.78
Blameworthy	Guilt	.79
Tense	Anxiety	.75
Anxious	Anxiety	.48
Timid	Anxiety	.53

composite negative mood variable was created by adding up the 16 items in the three mood measures, using the words that were contained in two measures once rather than twice.

Partner enhancement. The partner rating questionnaire used in Study 1 was also used in Study 2. There was, however, a difference in how the measure was scored. In Study 1, the measure was used to assess partner derogation. In Study 2, the measure was used to assess how positively the participants described their partners. Thus, in Study 2, the six negatively worded items were reverse scored before the 13 items were summed. In Study 2, higher partner enhancement scores indicate more positive evaluations of the partner.

Final questionnaire. The final questionnaire assessed background information, the manipulation check, reactions to the partner evaluation task, and reactions to the experiment (see Appendix R). First, participants were asked to indicate their gender, ethnic background, and citizenship. As a manipulation check, participants were asked to indicate who their assigned partner for the group problem solving task was.

To assess participants' reactions to the partner evaluation task, participants indicated how apprehensive they were about interacting with their partner and how comfortable they were with the task they chose to perform using a 7-point Likert-type scale ranging from 1 (not at all) to 7 (extremely). Participants were then asked to write what they were thinking "right now." Two independent raters coded the open-ended responses using the following dimensions: anxiety about social exclusion, empathic arousal, or relationship remedies. Anxiety about social exclusion referred to worries about how the participant would be treated by their partner once they got together for the group portion of the study. An example of anxiety about social exclusion is: "I'm thinking that my partner is going to hate me and be irritable when we work together." Empathic arousal referred to worries about the partner's

feelings. An example of empathic arousal is: "She's going to feel bad when she reads the evaluation." Relationship remedies encompassed six ways in which participants might express a desire to fix the damage caused by the negative evaluation. The six categories are: confessing to the partner, expressing feelings of guilt, expressing feelings of anxiety, emphasizing the partner's positive qualities, hoping that the partner didn't believe the evaluation, and hoping they will be forgiven. Due to the low number of occurrences of confessing (3 cases out of 133) and hoping to be forgiven (1 case out of 133), these categories were excluded from all analyses. Kappas for the open-ended codings can be found in Table 4.6.

Friendship questionnaire. The friendship questionnaire described in Study 1 was also used in this study. Likewise, the same friendship criteria and coding were used as in Study 1 (see Table 4.7 for Study 2 inter-rater reliabilities). In this study, one participant had a

Table 4.6. Inter-Rater Reliabilities and Number of Occurrences for the Open-Ended Question Asking Participants to Write Down What They are Thinking Right Now.

	Kappa	Number of Occurrences
Anxiety about Social Exclusion	.82	32
Empathic Arousal	.69	11
Relationship Remedies		
Expressing feelings of guilt	.91	13
Expressing feelings of anxiety	.80	14
Emphasizing partner's positive qualities	.76	8
Hoping partner didn't believe the feedback	.32	6

Note. N = 133.

Table 4.7. Inter-Rater Reliabilities for the Study 2 Open-Ended Friendship Questions.

	Kappa
How long knew friend	.41
How met friend	1.00
Listing of classes taken with friend	.89
Friend's telephone number	.92
How many siblings friend has	1.00
Friend's hometown	.87
Friend's major	1.00
Friend's career goals	.89

composite closeness score of 13. He was able to answer five questions about his friend correctly, so he was retained in all analyses.

Bogus personality inventories. To make participants believe that we had assessed their personality, three short measures were added to the end of the questionnaire packet (see Appendix L). The first scale was entitled "Honesty Index" and contained six items from the Social Desirability Inventory (Crowne & Marlowe, 1960). The second scale was entitled "Helping scale" and contained five items from the Communal Orientation Scale (Clark et al., 1987). The third scale was entitled "NEO Personality Inventory" and contained six items from the NEO-FFI (Costa & McCrae, 1992).

Personal interests questionnaire. This questionnaire contained six basic questions about the participants, such as their major and favorite TV show (see Appendix M). Below the questions was a shaded box for the results of the personality inventory the participants completed. When the participants completed the top half of the form, the bottom half of the

form was blank. Once the participant answered the six questions, the experimenter took the form out of the room and filled in the personality inventory section using standardized feedback. The standardized personality inventory results were written in pen at the bottom of all questionnaires. Later, participants in the friend condition received their friend's actual questionnaire with the standardized personality inventory scores. Participants in the stranger condition received a standardized response to the six questions printed in pencil with the standardized personality inventory scores printed in pen.

The questionnaire had two purposes. The first was to give participants in the stranger condition standardized information about their partner. The information was provided to help them feel comfortable filling out the partner rating questionnaire without providing them with useful information.

The second purpose was to give participants standardized information about their partner's emotional stability, social skills, helping level, honesty level, and self-esteem. The standardized personality inventory scores and accompanying comments were all very positive (all of the scores were between the 71st and 84th percentile and all were explained as being higher than most college students' scores. This information was provided to create a contrast between "reality" (the personality inventory results) and the partner feedback form that they had to copy, which rated the participant's personality in very negative terms. If participants did not feel that they were lying to their partner, they might not feel guilty about copying the feedback form.

Group problem solving article. A problem solving article (Schwartz, 1994) was used as a filler task while the experimenter was writing personality inventory feedback. This article was used because it addressed the role of managers in group tasks and highlighted

mistakes that managers make when leading groups. Participants were later told that they were to be managers in the group task.

Partner feedback form. The partner feedback form was used as the relationship-threat manipulation. Participants agreed to complete the partner feedback form by copying completed text created by the experimenter. Participants were given two versions of the partner feedback form: a blank version (see Appendix O) and a completed version (see Appendix P). The completed version contained responses to seven questions that asked participants to both rate and comment on various aspects of the partner's personality. The ratings and comments were all quite negative. Participants were asked to copy the completed text onto the blank form.

Comparison of Participants

Participants who were taking an introductory psychology class received 1 extra course credit point in exchange for their participation. Participants who were not eligible to receive extra course credit were entered into one of two drawings for \$50. There were 13 participants entered in the Fall 1999 drawing, and 2 participants entered in the Spring 2000 drawing. In both cases, the \$50 drawing was awarded at the end of the semester. Four of the non-psychology participants were randomly assigned to the stranger condition and 11 of the non-psychology participants were randomly assigned to the friend condition. None of the non-psychology students reported being suspicious.

To ensure that the non-psychology participants did not differ from the research pool participants, a series of t-tests were performed on the RISC Scale and the friendship variables. Psychology participants and non-psychology participants did not significantly differ in terms of the RISC Scale, friendship length, or their knowledge of the friendship.

Non-psychology students, however, did significantly differ from psychology students regarding their closeness, $t(26.71) = -4.49$, $p < .001$. Non-psychology students felt closer to their friend than psychology students did, $M = 26.27$, $SD = 1.94$ and $M = 23.61$, $SD = 3.44$, respectively. Given that non-psychology students would have to exert extra effort to participate in this study, it is not surprising that they were more likely to do it for a very good friend.

Results

Data Analysis

All hypotheses in this study are most appropriately tested using planned comparisons, rather than examining interaction terms. The creation of the groups is described in Study 1. Table 4.8 shows the number of high and low relationals by condition. There were differing distributions in the two conditions, resulting in uneven cell sizes.

A series of planned comparisons was performed comparing the high RISC Scale group paired with a friend to the three other groups (high RISC Scale group paired with a stranger, low RISC Scale group paired with a friend and low RISC Scale group paired with a stranger). To test the comparison, the high RISC Scale group paired with a friend was weighted -3 and the remaining three groups were each weighted $+1$.

Table 4.8. Number of Participants by RISC Group (High or Low Relational-Interdependent Self-Construal) and Condition (Stranger or Friend).

	Stranger Condition	Friend Condition
Low Relational Self-Construal	26	43
High Relational Self-Construal	36	29

To test the hypotheses using the RISC Scale as a continuous measure, a series of hierarchical regressions were also performed. All continuous predictor variables were centered. The stranger condition was coded “0” and the friend condition was coded “1”. Interaction terms were created by obtaining the product of the variables.

Means, standard deviations, and intercorrelations for all variables are listed in Table 4.9. The RISC Scale was used as a continuous measure in all correlations. An alpha level of .05 was used for all statistical tests.

Manipulation Check

This study is based on the premise that the feedback task created a threat to the participant’s relationship with the partner. After filling out the dependent measures, participants indicated how apprehensive they were about interacting with their partner and also how comfortable they felt performing the partner feedback task using a seven-point

Table 4.9. Study 2 Means, Standard Deviations, and Intercorrelations.

Measure	<u>M</u>	<u>SD</u>	<u>N</u>	1	2	3	4	5
1. RISC Scale	61.05	7.23	134	----				
2. Comfort with the Task	4.27	1.69	132	-.19*	----			
3. Apprehension about Interacting with Partner	4.27	1.73	132	.09	-.21*	----		
4. Negative Mood	25.92	9.71	134	.19*	-.44**	.29**	----	
5. Partner Enhancement	75.34	9.71	133	.22**	-.10	-.01	.18*	----

Note. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

Likert-type scale ranging from 1 (not at all) to 7 (extremely). The average response to the former question was 4.27 (SD = 1.73) and the average response to the latter question was 4.27 (SD = 1.69). Details from the pilot study, in which participant distress was ascertained, are located in Appendix T.

Comfort with the task and apprehension about interacting with the partner were related to negative mood. Higher negative mood was associated with lower comfort with the task, $r(132) = -.44, p < .001$, and higher apprehension about interacting with the partner, $r(132) = .29, p < .01$. Neither comfort nor apprehension was related to partner enhancement, $r(131) = -.09, p > .05$, and $r(131) = -.01, p > .05$, respectively.

Reactions to the task differed by condition. Participants in the stranger condition felt less comfortable performing the task ($M = 3.92$ vs. 4.58) and more apprehensive about interacting with their partner ($M = 4.66$ vs. 3.94) than did participants in the friend condition, $t(130) = -2.3, p < .05$ and $t(130) = 2.4, p < .05$, respectively. It is possible that participants in the friend condition felt more comfortable with the task because they could be assured of an opportunity to explain the situation to their friend after the experiment ended.

Friendship Data

The relational self-construal may have had an effect on the degree of friendship between participants who signed up for the study together. As in Study 1, there were three measures of friendship: closeness, knowledge of the friendship, and friendship length (see Table 4.10 for means and standard deviations). The average friendship length for participants in this study was 4.41 years, although the range was from .13 years (1.5 months) to 19.75 years. A correlation between the RISC Scale and friend closeness and friendship length failed to reveal significant relationships (see Table 4.10). The RISC Scale, however,

Table 4.10. Means, Standard Deviations, and Correlations Among Friendship Variables and the Relational-Interdependent Self-Construal Scale in Study 2.

	<u>M</u>	<u>SD</u>	RISC Scale	Closeness	Knowledge of Friendship
Closeness	23.90	3.40	.12	----	
Knowledge of Friendship	6.62	1.24	.24**	.53**	----
Friendship Length	4.41	4.54	.09	.40**	.27**

Note. N = 134 for all correlations except Friendship Length, in which N = 130. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

was significantly related to the number of items correctly answered about one's friend, $r = .24$, $p < .01$. This finding is supported by a study by Cross et al. (2000) in which pairs of previously unacquainted participants used a structured dyadic interaction paradigm to get to know each other. One partner's RISC Scale score was related to the other partner's level of disclosure, suggesting that the partners of individuals with high relational self-construals were more likely to talk about themselves (Cross et al., 2000).

Negative Mood

High relationals paired with a friend were expected to express higher negative mood than low relationals and high relationals paired with a stranger. An examination of the means revealed that the high relationals paired with a friend experienced the highest levels of negative mood, although the results from the planned comparison did not reveal a significant difference, $t(130) = -1.20$, $p > .05$. (see Table 4.11).

Table 4.11. Study 2 Negative Mood and Partner Enhancement Cell Means and Standard Deviations by RISC Group and Condition.

Variable	Condition											
	Friend						Stranger					
	High RISC			Low RISC			High RISC			Low RISC		
	<u>M</u>	<u>SD</u>	<u>N</u>									
Negative Mood	28.07	11.41	29	22.44	5.77	43	27.58	10.07	36	26.96	11.25	26
Partner Enhancement	80.59 _a	7.96	29	74.55 _b	8.05	42	73.19 _b	8.82	36	73.73 _b	8.15	26

Note. Means in a row with different subscripts differ significantly at $p < .05$ based on Scheffe post-hoc tests. RISC = Relational-Interdependent Self-
Construal Scale.

An examination of the cell means in Table 4.11 suggests that the low RISC Scale group paired with a friend appears to have the lowest negative mood in comparison to the other groups. A post-hoc comparison of the low RISC Scale group paired with a friend (weighted -3) versus the low RISC Scale group paired with a stranger (weighted +1) and the high RISC Scale groups (each weighted +1) revealed a significant difference between the groups, $t(130) = 2.89, p < .01$. The low RISC Scale group paired with a friend reported lower negative mood than the other three groups. Follow up Scheffe post-hoc comparisons, however, failed to reveal any significant differences among pairs of groups.

To provide a clearer picture of the data, the simple effects were examined. Means, standard deviations, and intercorrelations for variables in the friend condition are reported in Table 4.12. Among participants in the friend condition, there was not a significant correlation between RISC Scale scores and friend closeness, knowledge of the friendship, or friendship length. This suggests that differences in the high and low relationals' reactions to the relationship-threat manipulation were not due to differences in the quality of the friend brought to the study.

Means, standard deviations, and intercorrelations for all variables in the stranger condition are reported in Table 4.13. The RISC Scale was positively related to knowledge of the friendship, although it was not related to closeness or friendship length (see Table 4.13).

In the friend condition, RISC Scale scores and negative mood were significantly correlated, $r = .27, p < .05$. In the friend condition, a medium effect size (Cohen, 1988) was detected between the high relationals and low relationals, $d = .66$. In the stranger condition, RISC Scale scores and negative mood were not significantly related, $r = .07, p > .05$. As predicted, higher levels of the relational self-construal were associated with higher negative

Table 4.12. Study 2 Friend Condition Intercorrelations.

Measure	1	2	3	4	5	6	7
1. RISC Scale	----						
2. Comfort with the Task	-.17	----					
3. Apprehension about Interacting with Partner	.08	-.03	----				
4. Negative Mood	.27*	-.36**	.27*	----			
5. Partner Enhancement	.37**	-.20	-.14	.23	----		
6. Closeness	.10	.13	-.12	.13	.13	----	
7. Knowledge of Friendship	.20	-.08	-.11	.05	-.06	.55**	----
8. Friendship Length	.00	.17	-.10	.04	-.01	.39**	.23

Note. $N = 72$, except partner enhancement, comfort and apprehension with task ($N = 71$) and friendship length

($N = 70$). RISC Scale = Relational-Interdependent Self-Construal Scale.

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

Table 4.13. Study 2 Stranger Condition Intercorrelations.

Measure	1	2	3	4	5	6	7
1. RISC Scale	----						
2. Comfort with the Task	-.17	----					
3. Apprehension about Interacting with Partner	.04	-.37**	----				
4. Negative Mood	.07	-.47**	.27*	----			
5. Partner Enhancement	.12	-.09	.28*	.21	----		
6. Closeness	.17	.15	.08	.03	.04	----	
7. Knowledge of Friendship	.32*	-.03	.17	.12	.17	.50**	----
8. Friendship Length	.20	-.04	.23	-.05	-.17	.41**	.32*

Note. $N = 62$, except comfort and apprehension with task ($N = 61$) and friendship length ($N = 60$). RISC Scale

= Relational-Interdependent Self-Construal Scale.

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

mood in the friend condition, but not in the stranger condition.

To test whether these findings were due to a gender difference, a hierarchical regression was performed with negative mood as the dependent variable. In the first step, gender, condition, and RISC Scale score were entered. In the second step, the two-way interactions between the three variables were entered, for a total of three interaction terms. In the third step, the three-way interaction between gender, condition, and RISC Scale score was entered. There was a significant main effect for RISC Scale score (see Table 4.14). Individuals with higher RISC Scale scores reported higher levels of negative mood. Gender and condition were not significant predictors of negative mood. Likewise, there were no significant interactions. Thus, gender was not predictive of negative mood.

Partner enhancement

High relationals paired with a friend were expected to evaluate their partner more positively than high relationals paired with a stranger or than low relationals to try to compensate for the negative feedback they gave their partner. Examining the cell means, the high relationals paired with a friend engaged in more partner enhancement than the other groups (see Table 4.11 for a list of means.). The planned comparison revealed a significant difference, $t(129) = -3.88$, $p < .001$. Follow up Scheffe post-hoc comparisons revealed that the partner enhancement scores of the high relationals paired with a friend were significantly different from the high relationals paired with a stranger and the low relationals. There were no significant differences between the partner enhancement scores of the high relationals paired with a stranger, low relationals paired with a friend, or low relationals paired with a stranger.

The simple effects were examined next. Among participants in the friend condition,

Table 4.14. Hierarchical Regression for Variables Predicting Negative Mood.

Predictor	<u>B</u>	<u>SE</u>	β	<u>t</u>
<u>Step 1</u>				
RISC Scale	0.23	0.12	.17	1.98*
Condition	-2.14	1.68	-.11	-1.27
Gender	0.85	1.94	.04	0.44
<u>Step 2</u>				
RISC x Condition	0.22	0.25	.13	0.90
RISC x Gender	0.08	0.27	.05	0.30
Condition x Gender	0.59	3.99	.03	0.15
<u>Step 3</u>				
RISC x Condition x Gender	0.32	0.59	.14	0.53

Note. $N = 134$. $R^2 = .05$ ($p > .05$) for Step 1; $\Delta R^2 = .006$ ($p > .05$) for Step 2; $\Delta R^2 = .002$ ($p > .05$) for Step 3.

Condition coded "0" for stranger and "1" for friend. Gender coded "0" for men and "1" for women.

Coefficients reported at the step in which the variable was entered. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

high relationals were predicted to evaluate their partner more positively than low relationals. An examination of the correlation between the RISC Scale and partner enhancement revealed a significant correlation in the friend condition, $r = .37$, $p < .01$. A medium effect size (Cohen, 1988) was detected between the high and low relationals in the friend condition, $d = .75$. In the stranger condition, there was not a significant correlations between the RISC Scale and partner enhancement, $r = .12$, $p > .05$. As predicted, higher levels of relational-interdependence were associated with more positive partner enhancement scores.

Relational-interdependence was predicted to be unrelated to partner enhancement in the stranger condition. As expected, the correlation between the RISC Scale and partner enhancement in the stranger condition was not significant, $r = .12$, $p > .05$. (Although the non-significant interaction reveals that the slopes for the two conditions do not differ significantly).

To test whether these findings were due to a gender difference, a hierarchical regression was performed with partner enhancement as the dependent variable. In the first step, gender, condition, and RISC Scale score were entered. In the second step, the two-way interactions between the three variables were entered, for a total of three interaction terms. In the third step, the three-way interaction between gender, condition, and RISC Scale score was entered. There was a significant main effect for RISC Scale score and condition (see Table 4.15). Gender was not a significant predictor of partner enhancement. Likewise, there were no significant interactions. Thus, gender was not related to partner enhancement.

Open-Ended Question

High relationals paired with a friend should feel more anxious about their upcoming interaction with their partner than low relationals or high relationals paired with a stranger.

Table 4.15. Hierarchical Regression for Variables Predicting Partner Enhancement.

Predictor	<u>B</u>	<u>SE</u>	β	<u>t</u>
<u>Step 1</u>				
RISC Scale	0.30	0.10	.25	3.01**
Condition	4.21	1.44	.24	2.92**
Gender	2.19	0.17	.11	1.31
<u>Step 2</u>				
RISC x Condition	0.26	0.21	.17	1.22
RISC x Gender	0.08	0.23	.06	0.36
Condition x Gender	4.04	3.39	.23	1.19
<u>Step 3</u>				
RISC x Condition x Gender	0.08	0.51	.04	0.15

Note. $N = 133$. $R^2 = .13$ ($p < .001$) for Step 1; $\Delta R^2 = .02$ ($p > .05$) for Step 2; $\Delta R^2 = .0002$ ($p > .05$) for Step 3.

Condition coded "0" for stranger and "1" for friend. Gender coded "0" for men and "1" for women.

Coefficients reported at the step in which the variable was entered. RISC Scale = Relational-Interdependent Self-Construal Scale.

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

One way to analyze this hypothesis is to examine the written answers to the question, “What are you thinking right now?” The statements were coded into three main categories: anxiety about social exclusion, empathic arousal, and relationship remedies. Due to the low number of occurrences of statements in the empathic arousal category (see Table 4.6), I did not perform logistic regression using that category.

Logistic regression was performed with the social exclusion category as the dependent variable. The RISC Scale and condition were entered in the first step and the interaction term was entered in the second step. The results revealed a significant main effect for condition and a significant interaction (see Table 4.16). For participants in the friend condition, the relational self-construal β was 1.01 (Wald = 6.38, $p < .05$). For participants in the stranger condition, the relational self-construal β was .02 (Wald = .003, $p > .05$). For participants in the friend condition, higher levels of the RISC Scale were related to the

Table 4.16. Summary of Logistic Regression Analysis Predicting Anxiety about Social Exclusion.

Variable	<u>B</u>	<u>SE</u>	Odds Ratio	Wald Statistic
<u>Step 1</u>				
RISC Scale	.06	.03	1.07	3.39
Condition	-.95	.43	0.39	4.84*
<u>Step 2</u>				
RISC x Condition	.14	.07	1.15	4.03*

Note. N = 133. RISC Scale = Relational-Interdependent Self-Construal Scale.

increased odds of mentioning concern about social exclusion, whereas for participants in the stranger condition, the RISC Scale was not related to the odds of mentioning concern about social exclusion.

To test whether high relationals paired with a friend were more likely to think about a relationship remedy than the other three groups, logistic regression was performed on relationship remedies. In the first step, RISC Scale scores and condition were entered. In the second step, the interaction between RISC Scale scores and condition was entered. The results failed to reveal any significant main effects or interactions (see Table 4.17). RISC Scale scores and condition were not related to the odds of mentioning thoughts about relationship remedies.

Discussion

Contrary to predictions, individuals with high relational-interdependent self-construals who were paired with a friend did not report higher negative moods than individuals with low relational-interdependent self-construals or individuals with high

Table 4.17. Summary of Logistic Regression Analysis Predicting Relationship Remedies.

Variable	<u>B</u>	<u>SE</u>	Odds Ratio	Wald Statistic
<u>Step 1</u>				
RISC Scale	.04	.02	1.04	2.06
Condition	-.03	.40	0.97	0.004
<u>Step 2</u>				
RISC x Condition	.08	.06	1.08	1.87

Note. N = 133. RISC Scale = Relational-Interdependent Self-Construal Scale.

relational-interdependent self-construals who were paired with a stranger. When examining the simple effects in the friend condition, however, RISC Scale scores did correlate with negative mood. In the friend condition, individuals with higher relational self-construals tended to report higher negative moods. An examination of the stranger condition failed to find this difference, suggesting that it's not the case that individuals with high relational self-construals are simply more sensitive than individuals with low relational self-construals.

Post-hoc analyses of the negative mood dependent variable suggested that individuals with low relational self-construals who were paired with a friend may actually have experienced less negative mood than the other participants. Perhaps individuals with low relational-interdependent self-construals who were paired with a friend were more confident that their friend would not be mad at them at the end of the experiment than the other participants. Two planned contrasts comparing the low relational group paired with a friend to the other three groups were performed with comfort with the task and apprehension about meeting with one's partner as the dependent variables (see Table 4.18 for the means). The test of the planned comparisons failed to reveal the expected differences for comfort with the task, $t(128) = -1.83$, $p = .07$, and apprehension about meeting with one's partner, $t(128) = 1.76$, $p = .08$. The reactions to the task of low relationals paired with a friend failed to differ significantly from that of the other participants, although the difference approached significance. Follow-up Scheffe post-hoc comparisons failed to reveal any significant differences among pairs of groups. These findings suggest that low relationals paired with a friend were not less apprehensive about meeting with their partner or more comfortable with the task than the other groups.

Table 4.18. Comfort with Task and Apprehension about Meeting with Partner Cell Means and Standard Deviations by RISC Group and Condition.

Variable	Condition											
	Friend						Stranger					
	High RISC			Low RISC			High RISC			Low RISC		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
Comfort with Task	4.43	1.66	28	4.67	1.52	43	3.74	1.54	35	4.15	2.01	26
Apprehension about Meeting with Partner	4.03	1.88	28	3.88	1.87	43	4.69	1.35	35	4.62	1.70	26

Note. RISC = Relational-Interdependent Self-Constraint Scale.

It is also possible that low relationals paired with a friend were simply less worried about their friends' feelings. They may have differed from low relationals paired with a stranger because these participants may have worried about an uncomfortable interaction with their partner, who would have based most of his or her impressions about the partner on the negative feedback he or she gave them. Thus, the anticipation of the interaction in the stranger condition may have created the difference in scores.

As predicted, individuals with high relational-interdependent self-construals who were paired with a friend rated their partner more positively after providing their partner with negative feedback than did individuals with low relational self-construals, or individuals with high relational self-construals who were paired with a stranger. Analysis of the simple effects in the friend condition also demonstrated the significant positive relation between the relational self-construal and partner enhancement, a pattern that was not replicated in the stranger condition.

These findings do not suggest that individuals with high relational self-construals are simply "nicer" than individuals with low relational self-construals; high relationals paired with a friend gave more positive evaluations of their partner than high relationals paired with a stranger. Likewise, there was no difference in mean partner enhancement scores among high relationals paired with a stranger and low relationals. The results also cannot be explained by arguing that participants naturally evaluate their friends more positively than strangers. Among participants in the friend condition, individuals in the low relational self-construal group gave their friends significantly lower evaluations than did the individuals in the high relational self-construal group. It appears that the individuals in the high relational

self-construal group who were paired with a friend went out of their way to write positive things about their partner.

The premise of this study is that individuals with high relational self-construals brought a friend who was included in their self-concept to the study. The average friendship length of participants in this study was over 4 years, suggesting that participants did bring close friends to the study. In addition, every precaution was taken to eliminate participants who were not close friends. It is possible, however, that participants did not bring someone who was incorporated into their self-concept. This may have weakened the findings.

Another potential problem related to the use of friends in this study is that the guilt manipulation may not have been as powerful in the friend condition as the stranger condition. Participants in the friend condition reported being less apprehensive about interacting with their partner and also more comfortable with the feedback task than did participants in the stranger condition. Perhaps the participants in the stranger condition were concerned that their partner would form a negative impression of them and would not change that impression even after the experimenter explained the situation. Participants in the friend condition, however, may have felt that once their friend learned about the deception, he or she would surely forgive the participant. Thus, the manipulation may not have affected participants in both conditions equally. Given the ethical and logistical constraints related to a study that induces relationship threat, it may be difficult to modify this study to alleviate the differential response to the manipulation. Perhaps if participants were told they would not meet their partners during the task, the situation would be more similar for the four groups. Participants in the stranger condition would not be worried about the impression they were making on their partner.

Finally, there were some problems with the sample used in this study. First, the participants in this study had significantly higher RISC Scale scores than corresponding mass-testing samples. Second, there was no gender difference in RISC Scale scores in this study. It is possible that the requirement of a close friend in order to participate in this study attracted individuals with higher relational self-construals. This requirement was also part of Study 1, and in that study there were no differences between the sample and mass-testing groups and there was a significant gender difference. Whatever the cause, it is possible that the use of this sample may have affected the results.

CHAPTER 5. GENERAL DISCUSSION

The results of these studies suggest the organization of the self-concept in terms of close relationships influences how people behave and feel. High relationals work to maintain close relationships. If this motivation conflicts with the motivation to self-enhance, as in Study 1, high relationals try to strengthen the close relationship rather than self-enhance. This motivation, however, appears to come at a price; high relationals paired with a friend also had the highest levels of negative affect of the groups. Perhaps individuals with high relational self-construals overtly enhance the relationship at the same time that they also wish they had the opportunity to self-enhance. One thing that seems clear, however, is that high relationals did not find having their friend perform at a high level self-enhancing. Rather, they seemed more upset by the situation than low relationals. When high relationals feel that they have threatened a close relationship, as in Study 2, they also feel worse about it and work to strengthen the relationship.

Together, these studies demonstrate that how the self-concept is formed is related to how we respond to threat. For individuals who define the self based in part on relationships, it is important to maintain close bonds with important others, even in situations in which one's own abilities are threatened. Although creating a cognitive representation of the self based on relationships is related to experiencing negative affect when a relationship is threatened, it does not appear to enhance affect when a close friend is successful. Rather, the superior performance of a close friend appears to cause increased negative affect among high relationals. These findings suggest that when discussing the relational-interdependent self-construal, researchers need to be more specific with their terminology. It is not that individuals with a well-defined relational self-construal include others in the self, but that

they include relationships in the self. This distinction would make it clear that the success of an important other only is self-enhancing or threatening if it somehow affects the relationship between that individual and the friend. These studies suggest that individuals with well-developed relational self-construals do not simply self-enhance if they witness their friend performing at a high level. The self-enhancement appears to come from maintaining or strengthening the relationship. To test this idea, participants could play a game in which they could help or hinder their partner. There would be two versions of the game. In one version of the game, it would be clear to the partner whether one helped or hindered one's partner. In the other version of the game, the partner would not know about the participant's impact on the game. In the former version, hindering the partner would affect the relationship, whereas in the latter version, hindering the partner would affect the partner, not the relationship. Differences in behavior between low and high relationals could be examined and could provide further testing of the incorporation of the friend or the relationship.

The findings from Study 1 conflict with the self-evaluation maintenance model. The SEM would predict that participants in the friend condition would feel more threatened by being outperformed by their partner than participants in the stranger condition, regardless of their level of relational-interdependence. Contrary to the SEM model, high relationals paired with a friend were less likely to derogate their partner than the other three groups. Not all of the results from Study 1 conflict with the SEM model, however. High relationals did not experience less negative affect than the other groups; in fact, high relationals had the highest levels of negative affect. The findings also fail to support the SEM model, as participants in the friend condition did not experience higher levels of negative affect than participants in the stranger condition. The results from Study 1 are more supportive of the modified SEM

model, in which romantic relationships are thought to engender less threat to self-evaluation. Overall, the results suggest that the SEM model needs to be further modified to include additional important relationships.

The findings from Study 2 are consistent with the theory that high relationals are more motivated to maintain close relationships than low relationals. In the friend condition, relational-interdependence was positively related to negative mood. Thus high relationals do appear to experience more guilt and related affect after threatening an important relationship than low relationals. High relationals paired with a friend appeared to work to make amends with their partner by saying more positive things about their partner than the other three groups. An examination of the open-ended responses also suggests that high relationals paired with a friend were more worried that they would experience social exclusion because of their behavior. These results support the theory that guilt is tied to interpersonal relationships (Baumeister et al., 1994). The methodology used in Study 2 also provides support for using an experimental paradigm to study guilt. Rather than asking participants to recall past situations in which they felt guilty, this study experimentally manipulated guilt. Although it is not always possible or appropriate to experimentally manipulate guilt, it is important to do so in order to ensure that the survey data is an accurate reflection of people's responses to guilt.

The findings from these studies suggest that the relational self-construal influences what people find threatening and also how they respond to threat. The theory of the relational self-construal provides a theoretical basis for a number of differences in motivation and behavior (Cross & Madson, 1997). The results from these studies help increase our understanding of the way the self influences motivation and emotion. In terms of motivation,

the results suggest that the construction of the self influences which strategies individuals use to self-enhance. The cognitive representations of the self appear to guide self-enhancement strategies and also self-protection strategies. These results also suggest that the structure of the self-concept influences our emotional responses to events. The findings from this thesis demonstrate the past theories of threats to the self, such as the Self-Evaluation Maintenance model and social comparison theory, do not adequately explain self-protective motives or emotional responses to threat. By incorporating differences in the organization of the self-concept into basic social psychological theories, we will further our understanding of these issues.

Past work on the relational-interdependent self-construal has been largely theoretical (see Cross & Madson, 1997). The few empirical studies of the construct mainly focused on the cognitive aspects of the relational self-construal (Cross et al., 2001). This study provides some of the first empirical evidence of a relation between the relational self-construal and emotion and motivation. This evidence contributes an important foundation to the empirical testing of the relational-interdependent self-construal theory.

There are several general limitations to these studies. First, it was extremely difficult to recruit male participants for this study. In Study 2, the men who chose to participate in the study had higher RISC Scale scores than the general population of men in the psychology research pool. Perhaps men are less likely to participate in studies that require them to bring a friend, and those who do tend to have more well-developed relational self-construals than men in general. Thus it is questionable whether these results are generalizable to men.

Second, the artificial nature of the laboratory situations may limit the generalizability of the findings. Future studies should include field studies. These studies could examine

threat in the classroom and the workplace and the role of the relational self-construal. Third, it is possible that participants did not bring a friend who is close enough to be included in the self-concept. Because participants completed this study in exchange for course credit, they were more likely to bring a good friend from their psychology class. That friend, although very close, may not be close enough to be incorporated into the self-concept. Thus, the results may not be as strong as they would have been if people had brought their best friend.

Although there were some limitations to these studies, there were also a few unique strengths. First, these studies used close friends as research participants. Because I was examining the relational self-construal, it was important to use friends, rather than attempting to create a relationship between strangers in the laboratory. Although the latter strategy may be useful in certain cases, the use of actual friend pairs increased the external validity of this study and allowed me to fully test my hypotheses. Second, I conducted quasi-experimental studies of relationships, rather than using a survey design. The quasi-experimental design allowed me to manipulate ego threat (Study 1) and relationship threat (Study 2) and study the effects of those manipulations.

The findings of the two studies prompt a number of new research questions. These studies did not examine the independent self-construal, as the focus was on the relational-interdependent self-construal. Because these two self-construals are orthogonal, it is possible that an individual could be high on both dimensions (Singelis, 1994). What impact does the independent self-construal have on the ego threat that participants encountered in these studies? For individuals who are high on both dimensions, it must be difficult to have their friend perform at a much higher level than they did. Although such individuals would want to see their friend perform at a high level, they would also want to be the best. Perhaps this

accounts for the finding that high relationals paired with a friend gave more positive evaluations of their partner, yet also had the most negative mood among the four groups.

In both studies, high relationals paired with a friend evaluated their friend more positively than the other three groups. It is possible that high relationals naturally evaluate their friends more positively than low relationals, in which case, the ego and relationship threat may not have affected their evaluations. A future study that asked participants to evaluate their friend prior to the threat manipulation or a no-threat condition should determine the impact of the manipulation on partner enhancement scores.

The relationship threat study (Study 2) focused on the impact of engaging in a guilt-inducing behavior on behavior and emotions. Saying negative things about someone else is simply one of a variety of situations that could produce a threat to the relationship. Because of the difficulty of researching guilt, future studies should explore other relationship-threatening situations. One area that would be interesting to explore is competition. Competing with a friend can have negative interpersonal effects. Members of a friend pair can engage in behaviors that would either help or hinder their partner's performance, something that could be measured in the laboratory using a prisoner's dilemma paradigm. In addition, it would be possible to have friend pairs actually interacting with each other during the experiment, which would increase the impact of the competition on participants' emotions and behavior.

Because most experimental interactions take place between strangers, psychologists may have overlooked the impact of the relational self-construal. For example, how does the relational self-construal affect aggressive behavior? Domestic violence is a prevalent problem in our society, and is a problem that involves the relationship between romantic

partners. What effect does the relational self-construal have on aggressive behavior and responses to aggression? Likewise, is attribution affected by the organization of the self-concept? Perhaps high relationals are less likely to make the fundamental attribution error when the target is a close friend. By attributing the behavior (especially negative behavior) of a close friend to situational factors, the high relational may be able to avoid potentially negative dispositional attributions, which could damage the relationship. To test the impact of the relational self-construal, it would be important to include close friends in studies of these basic social psychological phenomena.

The relational-interdependent self-construal appears to be related to what is considered a threat to the individual. In the future it will be important to explore the emotional impact of the relational self-construal on such threats to determine if having a high relational self-construal leads to feelings of conflict between the motivation to enhance the self or the motivation to enhance the relationship. In addition, it is important to continue to reexamine past social psychological theories to ensure that the impact of the relational self-construal is considered because it may help refine and clarify basic social psychological theories. By continuing to examine the role of the relational-interdependent self-construal, we will further our understanding of the self.

APPENDIX A. RELATIONAL-INTERDEPENDENT SELF-CONSTRUAL SCALE

Listed below are a number of statements about various attitudes and feelings. On the bubble sheet, please indicate the extent to which you agree or disagree with each of these statements, using the following scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree

1. My close relationships are an important reflection of who I am.
2. When I feel very close to someone, it often feels to me like that person is an important part of who I am.
3. I usually feel a strong sense of pride when someone close to me has an important accomplishment.
4. I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.
5. When I think of myself, I often think of my close friends or family also.
6. If a person hurts someone close to me, I feel personally hurt as well.
7. In general, my close relationships are an important part of my self-image.
8. Overall, my close relationships have very little to do with how I feel about myself. (R)
9. My close relationships are unimportant to my sense of what kind of person I am. (R)
10. My sense of pride comes from knowing who I have as close friends.
11. When I establish a close friendship with someone, I usually develop a strong sense of identification with that person.

Note. (R) = Reverse-keyed item.

APPENDIX C. FRIENDSHIP QUESTIONNAIRE

We are interested in your relationship with the friend you brought to the experiment today. Please answer the following questions as honestly and accurately as possible.

1. How long have you known your friend? _____
2. How did you and your friend meet?
3. List the classes that you have taken with your friend at ISU:
4. What is your friend's telephone number? _____
5. What is your telephone number? _____
6. How many brothers and sisters does your friend have? _____ sisters & _____ brothers
7. How many brothers and sisters do you have? _____ sisters & _____ brothers
8. What is your friend's hometown? _____
9. What is your hometown? _____
10. What is your friend's major? _____
11. What is your major? _____
12. What are your friend's career goals?
13. What are your career goals?

For the remaining questions, please use the accompanying scale to answer each item.

1	2	3	4	5	6	7
Not at all close (we are acquaintances)			Close			Extremely close (we are best friends)

14. How close are you to your friend? _____

1	2	3	4	5	6	7
Not at all			Somewhat			Very Much

15. How much do you like your friend? _____

1	2	3	4	5	6	7
Rarely or never			Sometimes			Almost constantly

16. How often do you do things together outside of classes? _____

1	2	3	4	5	6	7
Rarely or never			Sometimes			Almost always

17. How often do you enjoy being with your friend? _____

1	2	3	4	5	6	7
Not at all			Sometimes			Extremely

18. How similar are you to your friend? _____

APPENDIX D. STANDARDIZED REASONING TEST

Standardized Reasoning Test

Please mark your answers to the Standardized Reasoning Test on the Scantron sheet. Monitor your time so you answer every question within the 15 minute time period. There is no penalty for guessing, so be sure to answer every question.

Directions: Questions 1-3 are based on a set of conditions. Choose the response that most accurately and completely answers the question.

In a game, exactly six inverted cups stand side by side in a straight line, and each has exactly one ball hidden under it. The cups are numbered consecutively 1 through 6. Each of the balls is painted a single solid color. The colors of the balls are green, magenta, orange, purple, red, and yellow. The balls have been hidden under the cups in a manner that conforms to the following conditions:

The purple ball must be hidden under a lower-numbered cup than the orange ball.
The red ball must be hidden under a cup immediately adjacent to the cup under which the magenta ball is hidden.
The green ball must be hidden under cup 5.

1. Which of the following could be the colors of the balls under the cups, in order from 1 through 6?
 - A. Green, yellow, magenta, red, purple, orange
 - B. Magenta, green, purple, red, orange, yellow
 - C. Magenta, red purple, yellow, green, orange
 - D. Orange, yellow, red magenta, green, purple
 - E. Red, purple, magenta, yellow, green, orange

2. If the magenta ball is under cup 4, the red ball must be under cup
 - A. 1
 - B. 2
 - C. 3
 - D. 5
 - E. 6

3. A ball of which of the following colors could be under cup 6?
 - A. Green
 - B. Magenta
 - C. Purple
 - D. Red
 - E. Yellow

Directions: Questions 4–6 of the Standardized Reasoning Test are based on a set of conditions. Choose the response that most accurately and completely answers the question.

A piano instructor will schedule exactly one lesson for each of six students—Grace, Henry, Janet, Steve, Tom, and Una—one lesson per day for six consecutive days. The schedule must conform to the following conditions:

Henry's lesson is later in the schedule than Janet's lesson.
Una's lesson is later in the schedule than Steve's lesson.
Steve's lesson is exactly three days after Grace's lesson.
Janet's lesson is on the first day or else the third day.

4. If Janet's lesson is scheduled for the first day, then the lesson for which one of the following students must be scheduled for the sixth day?
- A. Grace
 - B. Henry
 - C. Steve
 - D. Tom
 - E. Una
5. If Henry's lesson is scheduled for a day either immediately before or immediately after Tom's lesson, then Grace's lesson must be scheduled for the
- A. first day
 - B. second day
 - C. third day
 - D. fourth day
 - E. fifth day
6. If Janet's lesson is scheduled for the third day, which one of the following could be true?
- A. Grace's lesson is scheduled for a later day than Henry's lesson.
 - B. Grace's lesson is scheduled for a later day than Una's lesson.
 - C. Henry's lesson is scheduled for a later day than Una's lesson.
 - D. Tom's lesson is scheduled for a later day than Henry's lesson.
 - E. Tom's lesson is scheduled for a later day than Una's lesson.

Directions: The questions in this section are based on the reasoning contained in brief statements or passages. For some questions, more than one of the choices could conceivably answer the question. However, you are to choose the best answer, that is, the response that most accurately and completely answers the question. You should not make assumptions that are by commonsense standards implausible, superfluous, or incompatible with the passage.

Question 7

Therapists find that treatment of those people who seek help because they are unable to stop smoking or overeating is rarely successful. From these experiences, therapists have concluded that such habits are intractable and that success in breaking them is rare.

As surveys show, millions of people have dropped the habit of smoking, and many people have successfully managed a substantial weight loss.

If all of the statements above are correct, an explanation that resolves their apparent contradictions is provided by the hypothesis that

- A. there have been some successes in therapy, and those successes were counted in the surveys.
- B. it is easier to stop smoking than it is to stop overeating.
- C. it is easy to break the habits of smoking and overeating by exercising willpower.
- D. the group of people selected for the surveys did not include those who failed to break their habits even after therapy.
- E. those who succeed in curing themselves do not go for treatment and so are not included in the therapists' data.

Questions 8-9

The new perfume Aurora smells worse to Joan than any comparably priced perfume, and none of her friends likes the smell of Aurora as much as the smell of other perfumes. However, she and her friends must have a defect in their sense of smell, since Professor Jameson prefers the smell of Aurora to that of any other perfume and she is one of the world's foremost experts on the physiology of smell.

8. The reasoning is flawed because it
- A. calls into question the truthfulness of the opponent rather than addressing the point at issue.
 - B. ignores the well-known fact that someone can prefer one thing to another without liking either very much.
 - C. fails to establish that there is widespread agreement among the experts in the field.
 - D. makes an illegitimate appeal to the authority of an expert.
 - E. misrepresents the position against which it is directed.

9. From the information presented in support of the conclusion, it can be properly inferred that

- A. none of Joan's friends is an expert on the physiology of smell.
- B. Joan prefers all other perfumes to Aurora.
- C. Professor Jameson is not one of Joan's friends.
- D. none of Joan's friends likes Aurora perfume.
- E. Joan and her friends all like the same kinds of perfumes.

10. In the Centerville Botanical Gardens, all tulip trees are older than any maples. A majority, but not all, of the garden's sycamores are older than any of its maples. All the garden's maples are older than any of its dogwoods.

If the statements above are true, which one of the following must also be true of trees in the Centerville Botanical Gardens?

- A. Some dogwoods are as old as the youngest tulip trees.
- B. Some dogwoods are as old as the youngest sycamores.
- C. Some sycamores are not as old as the oldest dogwoods.
- D. Some tulip trees are not as old as the oldest sycamores.
- E. Some sycamores are not as old as the youngest tulip trees.

APPENDIX E. STUDY 1 STANDARDIZED PERSONAL INTERESTS
QUESTIONNAIRE^a

In group tasks, you often know a little bit about the other person before you start working. To simulate this in the lab, please fill out this personal interests questionnaire. The following questions will be read by your partner to get to know you better before you work on the group problem solving task. Even though your friend may know this information about you, we are asking you to do this in case you are assigned to the stranger condition.

1. What do you like to do in your free time?

Watch TV, hang out with friends

2. What is your major?

Psychology

3. How many credits are you taking this semester?

16

4. What is your favorite TV show?

Seinfeld

5. What sorts of groups have you been in during high school and college? (Please list)

IM volleyball, student council, choir

6. What leadership positions have you held during high school and college? (Please list)

Vice president student council

^aStandardized responses are written in italics. On the actual questionnaire, they were written in pencil.

APPENDIX F. STANDARDIZED REASONING TEST RESULTS

In the workplace, people often have an idea of the ability levels of the members of a group. For example, you have probably been involved in a group project for school in which you knew which members were very good students and which members were not good students. Knowing this information may impact how you respond to the group project. For example, if you know that everyone in the group is a poor student, you may have to work harder to complete the project.

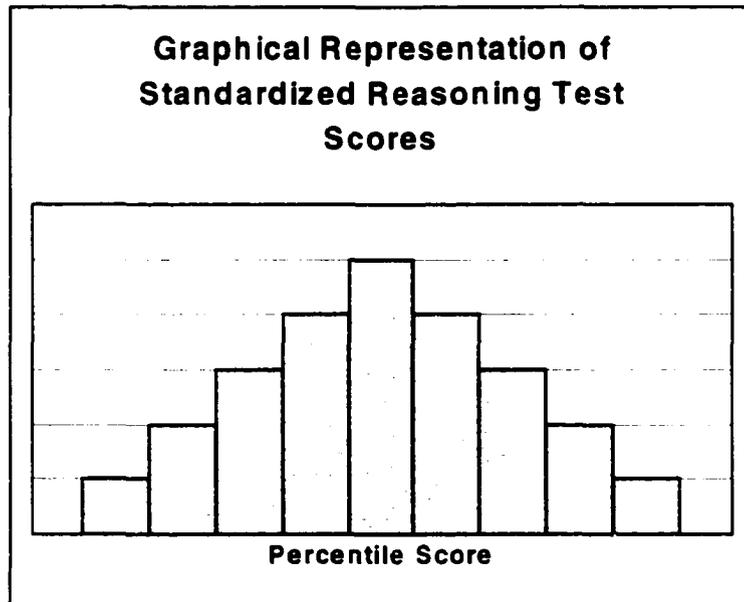
To simulate this phenomenon in the lab, we are not only giving you your own Standardized Reasoning Test results, but also the Standardized Reasoning Test results of your partner as well.

Your score: _____ percentile.

How to interpret your score: Your score indicates that you scored at or above _____% of college students who have taken this test.

Your partner's score: _____ percentile.

How to interpret your partner's score: Your partner's score indicates that your partner scored at or above _____% of college students who have taken this test.



APPENDIX G. POSITIVE AND NEGATIVE AFFECT SCALE

Sometimes a person's performance is affected by how he or she is thinking or feeling at the moment. To help us take this possibility into account in our analyses, please answer the following questions. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

Right now, I feel

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely
_____ interested			_____ alert	
_____ distressed			_____ ashamed	
_____ excited			_____ inspired	
_____ upset			_____ nervous	
_____ strong			_____ determined	
_____ guilty			_____ attentive	
_____ scared			_____ jittery	
_____ hostile			_____ active	
_____ enthusiastic			_____ afraid	
_____ irritable			_____ proud	

APPENDIX H. PARTNER RATING QUESTIONNAIRE

Sometimes in a group project, people's perceptions of their partners affect the overall performance of the group. Research has found that impressions of another person can form almost immediately upon hearing about that person. Your partner will NOT see this form; its contents will remain confidential. Please think about your partner for the group problem solving project and then rate his or her attributes and abilities using the following scale:

1	2	3	4	5	6	7
Not at all			Moderately			Extremely

Remember, you are evaluating your assigned partner for the group problem solving task.

- _____ 1. How likely is it that your partner will succeed in college?
- _____ 2. How intelligent is your partner?
- _____ 3. How rude is your partner? (R)
- _____ 4. How competent is your partner?
- _____ 5. How hard working is your partner?
- _____ 6. How mean is your partner? (R)
- _____ 7. How lazy is your partner? (R)
- _____ 8. How likable is your partner?
- _____ 9. How kind is your partner?
- _____ 10. How boring is your partner? (R)
- _____ 11. How friendly is your partner?
- _____ 12. How annoying is your partner? (R)
- _____ 13. How incapable is your partner? (R)

Note. (R) = Reverse-keyed item.

APPENDIX J. STUDY 1 WRITTEN DEBRIEFING

Thank you for participating in this study! Before you leave, we want to be certain that you understand the purpose of this study. We were interested in how individual differences affect people's responses to being outperformed on a test by either a friend or a stranger. To test this, we had to standardize some of the feedback we gave you. Sometimes in experiments we need to see how lots of people respond to receiving the same information. In this study, we misinformed you that you had scored in the 42nd percentile and that your partner had scored in the 86th percentile on the Standardized Reasoning Test. To standardize the information you received, all of the participants in this study were told that they scored in the 42nd percentile and that their partner scored in the 86th percentile. In fact, we never even scored your test. You should also know that we made up the Standardized Reasoning Test. The ten questions we selected are NOT a good indicator of your problem solving abilities. If you have any questions about the test or the bogus scores, please ask the experimenter.

Sometimes people wonder why we made up your scores rather than using your actual score on the test. We did it so we could see how lots of people respond to the same test score. If we actually scored your performance on an actual reasoning test, we couldn't be sure that you would score lower than your partner, which is something that we wanted to examine. Because we are interested in how lots of people respond to our experiment, your data will be combined with the data of over 100 other participants. Thus, no one will ever be able to figure out exactly how YOU responded to this experiment.

The reason we do not tell you that the test information was made up or tell you to imagine how you would respond if someone did better than you on a test is that it is difficult for people to predict how they will react to situations. It's possible that a person could think that he or she would act one way, but when he or she is in the situation, he or she may act another way. This is the whole reason why we run experiments—to see how people actually behave in different situations.

We tried to make participants feel unhappy about their performance to see how people respond to negative information about themselves. This experiment will allow us to examine how people react to the negative information by examining their mood, feelings about their partner, and degree of helpfulness. We hypothesized that people who are paired with a friend will respond differently than people who are paired with a stranger, and that individual differences may also impact people's responses.

This study will continue for several weeks. If people know about this study ahead of time, they may not respond naturally to our experiment, making their data invalid. In order to protect the integrity of our study, **please do not discuss this study with other potential participants or tell them the purpose of the study.** If you would like to talk to your friend who also participated in the experiment today, that's fine, but please be sure to do it when you are alone. If everyone knew what our experiment was about, the results from this study would be meaningless. Thanks for your help.

If you are interested in further exploration of your feelings or attitudes about yourself you are eligible to seek free counseling services by making an appointment with the ISU Student Counseling Service by calling 294-5056.

Thanks for helping us. We really appreciate your help. If you have any questions, please ask the experimenter now.

APPENDIX K. STUDY 1 PILOT DATA

Participants in the pilot study were not asked to bring a close, same-sex friend to the study because the pool of people willing to bring same-sex friends to the laboratory is quite small. Any pairs used in the piloting phase meant fewer potential participants in the actual study. The purpose of the pilot study was to ensure that (a) the cover story was believable, (b) the test was difficult enough to make the low percentile score appear plausible without being so impossible that people gave up, (c) people remembered their test score and their partner's test score, and (d) the card sorting task produced some variance.

Study 1 pilot data were collected from 11 men and 26 women. All participants were psychology research pool participants who received two extra credit points in exchange for their participation. Participants completed the study as described in Chapter 3. The only modifications were that they received an extra questionnaire immediately upon receiving their test results and they did not receive the friendship questionnaire because they did not bring a friend. The extra questionnaire asked participants how hard the test was using a seven point Likert-type scale ranging from 1 (not at all) to 7 (extremely).

Suspicion Rate

A small number of participants reported being suspicious that they had a partner. The suspicion rate in the pilot study was 7.5%. Of the three suspicious participants, two were men and one was a woman. The three suspicious participants all had participated in other research in which they were told they had a partner when in fact they did not. I felt that this suspicion rate was reasonable and did not warrant making changes to the design of the study.

Manipulation Check

It was important that participants remembered that they had scored much lower on the Standardized Reasoning Test than their partner. To test their memory, participants were asked to write down both their own percentile score (42nd percentile) and their partner's percentile score (86th percentile) at the end of the study. Of the 37 pilot participants, only one person incorrectly wrote down that the partner had performed at the same level as the participant. Over 90% of the pilot study correctly wrote that they had scored somewhere in the 40th percentile and that their partner had scored somewhere in the 80th percentile. One participant listed their partner's percentile score as 68th rather than 86th percentile, which appears to be a simple inversion of the numbers.

Difficulty of the Test

The initial Standardized Reasoning Test (SRT) was extremely difficult. The experimenters reported that people were very unhappy after completing the test and that they frequently complained about the difficulty of the test. The scores of the pilot participants ranged from 0 to 7 (out of 10 possible points). The mean score on the SRT was 2.80 (SD = 1.79). Only three (7.5%) of the participants correctly answered more than half of the questions on the test. To avoid making participants extremely frustrated, the test was altered before the actual study started. The SRT test items were analyzed using item analysis. The four most difficult items were replaced with easier items.

Card Sorting Task

Because the card sorting task was created for this study, it was important to know if it yielded any variance in the number of cards selected by the participant. The number of cards the pilot participants selected to sort ranged from 12 to 111 (M = 80.51, SD = 24.23).

Looking at the distribution of scores, it appeared that participants did not all simply take half of the stack. Almost 10% of the participants took less than 25% of the cards.

APPENDIX L. BOGUS PERSONALITY QUESTIONS

Honesty Index

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you. Use the following scale:

True = 1 False = 2

1. I have never intensely disliked anyone.
2. My table manners at home are as good as when I eat out in a restaurant.
3. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
4. I like to gossip at times.
5. There have been occasions when I took advantage of someone.
6. I'm always willing to admit it when I make a mistake.

Helping Scale

Listed below are a number of statements concerning personal feelings and traits. Please read each statement and rate how characteristic the item is of you. Please use the following scale for each item:

1	2	3	4	5	6	7
Extremely Uncharacteristic of Me						Extremely Characteristic of Me

7. I don't consider myself to be a particularly helpful person.
8. I believe people should go out of their way to be helpful.
9. I don't especially enjoy giving others aid.
10. I often go out of my way to help another person.
11. I'm not the sort of person who often comes to the aid of others.

NEO Personality Inventory

Please rate the extent to which you agree with the following statements. Use the scale below for your responses.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree

12. I am not a worrier.
13. I laugh easily
14. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
15. I really enjoy talking to people.
16. I often feel tense and jittery.
17. I rarely feel fearful or anxious.

APPENDIX M. STUDY 2 PERSONAL INTERESTS QUESTIONNAIRE

In group tasks, you often know a little bit about the other person before you start working. To simulate this in the lab, please fill out this personal interests questionnaire. The following questions will be read by your partner to get to know you better before you work on the group problem solving task. Even though your friend may know this information about you, we are asking you to do this in case you are randomly assigned to the stranger condition.

1. What do you like to do in your free time?

2. What is your major?

3. How many credits are you taking this semester?

4. What is your favorite TV show?

5. What sorts of groups have you been in before? (Please list)

6. What leadership positions have you held? (Please list)

DO NOT WRITE BELOW THIS POINT.

PERSONALITY INVENTORY RESULTS FROM FIRST QUESTIONNAIRE PACKET:

	<u>Score</u>	<u>Comments</u>
Emotional stability:	_____	
Social skills:	_____	
Helping index:	_____	
Honesty index:	_____	
Self-Esteem:	_____	
Comments:		

**APPENDIX N. STUDY 2 STANDARDIZED PERSONAL INTERESTS
QUESTIONNAIRE^a**

In group tasks, you often know a little bit about the other person before you start working. To simulate this in the lab, please fill out this personal interests questionnaire. The following questions will be read by your partner to get to know you better before you work on the group problem solving task. Even though your friend may know this information about you, we are asking you to do this in case you are randomly assigned to the stranger condition.

1. What do you like to do in your free time?

Watch TV, hang out with friends

2. What is your major?

Psychology

3. How many credits are you taking this semester?

16

4. What is your favorite TV show?

Friends

5. What sorts of groups have you been in before? (Please list)

IM Volleyball, Student Council

6. What leadership positions have you held? (Please list)

Student Council Vice President

DO NOT WRITE BELOW THIS POINT.

PERSONALITY INVENTORY RESULTS FROM FIRST QUESTIONNAIRE PACKET:

	<u>Score</u>	<u>Comments</u>
Emotional stability:	79	Very emotionally stable
Social skills:	74	Good social skills
Helping index:	84	Very helpful
Honesty index:	71	More honest than most college students
Self-Esteem:	81	Confident
Comments:	Well adjusted person	

^aStandardized participant responses are written in italics. On the actual questionnaire, they were written in pencil. Standardized experimenter responses are written in bold type. On the actual questionnaire, they were written in ink.

APPENDIX Q. AFFECTS BALANCE SCALE

Sometimes a person's performance is affected by how he or she is thinking or feeling at the moment. To help us take this possibility into account in our analyses, please answer the following questions. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

Right now, I feel...

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

- _____ guilty
- _____ ashamed
- _____ regretful
- _____ remorseful
- _____ blameworthy
- _____ nervous
- _____ afraid
- _____ tense
- _____ anxious
- _____ timid

APPENDIX S. STUDY 2 WRITTEN DEBRIEFING

Thank you for participating in this study! Before you leave, we want to be certain that you understand the purpose of this study. We were interested in how individual differences affect people's responses to writing negative things about their partner. We expected that how bad people felt after saying "mean" things to their partner and how nice they were to their partner would depend both on an individual difference factor and whether or not they believed they were paired with a friend or a stranger. Because people are generally nice to other people, we had to create a situation in which you would agree to write negative things about your partner.

Sometimes in experiments, we need to see how lots of people respond after engaging in the same behavior. In this study, we pretended to give the negative feedback that you wrote to your partner. In fact, all we were interested in is how you felt and behaved after THINKING that your partner read the negative feedback. Your partner NEVER read the feedback. In fact, we never even gave you a partner! All of the personality information you read about your partner was actually made up by us so you would THINK that you had a partner. Everyone who participates in this study is asked to write the negative feedback for their "partner" and no one EVER reads the negative feedback. So, you should not feel at all bad about writing those things—everyone in the study writes the same things and NO ONE ever has to read them!

Sometimes people wonder why we had people write the negative evaluation. We did it so we could see how lots of people respond to the same situation, without actually hurting anyone's feelings. If we let you give your own actual evaluation of your partner, we're sure it would have been quite positive, which would not allow us to examine the impact of being "mean" on people's feelings and behavior. Because we are interested in how lots of people respond to our experiment, your data will be combined with the data of over 100 other participants. Thus, no one will ever be able to figure out exactly how YOU responded to this experiment.

The reason we do not tell you to simply IMAGINE telling your friend something mean is that it's possible that a person could think that he or she would act one way, but when he or she is in the situation, he or she may act another way. This is the whole reason why we run experiments—to see how people actually behave in different situations.

This study will continue for several weeks. If people know about this study ahead of time, they may not respond naturally to our experiment, making their data invalid. In order to protect the integrity of our study, **please do not discuss this study with other potential participants or tell them the purpose of the study.** If you would like to talk to your friend who also participated in the experiment today, that's fine, but be sure to do it when you are alone. If everyone knew what our experiment was about, the results from this study would be meaningless. Thanks for your help.

If you are interested in further exploration of your feelings or attitudes about yourself you are eligible to seek free counseling services by making an appointment with the ISU Student Counseling Service by calling 294-5056.

Thanks for helping us. We really appreciate your help. If you have any questions, please ask the experimenter now.

APPENDIX T. STUDY 2 PILOT DATA

The purpose of this pilot study was to ensure that (a) the cover story and manipulation were believable, and (b) participants were distressed by the guilt manipulation. As in the Study 1 pilot study, participants completed the study in the stranger condition (see Appendix K for further explanation). Study 2 pilot data were collected from 6 men and 25 women. All participants were psychology research pool participants who received one extra credit point in exchange for their participation. Participants completed the study as described in Chapter 4. They did not receive the friendship questionnaire because they did not bring a friend.

Suspicion Rate

The suspicion rate for the pilot study was 3.2%. The female participant who was suspicious had completed another study in which she was falsely told that she had a partner the hour before she participated in this study. I felt that this suspicion rate was reasonable and did not warrant making changes to the design of the study.

Discomfort with the Partner Evaluation Task

The partner evaluation task was supposed to stimulate feelings of guilt among participants. I did not, however, want the task to be too distressing to the participants. To assess the level of distress, I examined participants' mood scores and their reactions to the task. The average negative mood score among the participants was 26.25 ($SD = 8.45$) out of a possible 80 points. Higher scores indicated higher levels of negative mood. Likewise, the average guilt score was 7.68 ($SD = 3.93$) and the average anxiety score was 9.32 ($SD = 3.82$) out of a possible 25 points. The low scores on negative mood measures suggested that the task was not overly distressing to participants.

At the end of the study, participants indicated how apprehensive they were about interacting with their partner and also how comfortable they felt performing the partner feedback task using a seven-point Likert-type scale ranging from 1 (not at all) to 7 (extremely). The average response to the apprehension question was 4.14, SD = 1.9, and the average response to the comfort question was 3.5, SD = 1.75. These scores suggested that participants were uncomfortable with the partner evaluation task; however, they were not overly distressed by it, as evidenced by their low negative mood scores.

Concern about the Relationship

Participants were also asked to write what they were thinking “right now.” More than 60% of the participants indicated that they were worried about (a) the upcoming interaction because of the statements they wrote about their partner or (b) what their partner thought of them. This suggests that the guilt manipulation caused some participants to worry about how their actions could affect the relationship with their partner.

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