# INTERPERSONAL RELATIONS AND GROUP PROCESSES

# Perceived Superiority in Close Relationships: Why It Exists and Persists

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Two studies used a thought-listing technique to examine perceived superiority, or the inclination to regard one's own relationship as better than (and not as bad as) others' relationships. Consistent with the claim that this is a motivated phenomenon—and motivated in part by strong commitment—Study 1 revealed that (a) tendencies toward perceived superiority and (b) the commitment—superiority link are both strongest given psychologically threatening instructions and weakest given accuracy instructions (control instructions are intermediate). Consistent with the claim that this phenomenon serves a functional purpose, Study 2 revealed that earlier perceived superiority predicts later relationship status (persisted vs. ended) and increases over time in dyadic adjustment. Also, commitment accounts for unique variance in perceived superiority beyond self-esteem.

The beliefs individuals hold about themselves tend to be somewhat more positive than a strictly veridical view of the world can support. Research regarding the self has identified three primary forms of positive illusion, demonstrating that we exhibit excessively positive self-evaluations, exaggerated perceptions of control, and unrealistic optimism regarding the future (for reviews, see Taylor & Brown, 1988; Wood, 1989). The empirical literature reveals parallel phenomena in close relationships, demonstrating that we exhibit excessively positive evaluations of our partners and relationships, exaggerated belief in the controllability of our relationships, and unrealistic optimism regarding the future of our involvements (Buunk & Van Yperen, 1991; Martz et al., 1998; Murray & Holmes, 1993, 1997; Murray, Holmes, & Griffin,

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The present research examines a phenomenon termed *perceived* superiority, which is defined as the inclination to regard one's own relationship as both better than and not as bad as other people's relationships. This work is based on the assumption that we do not experience our relationships in a vacuum: Although beliefs about a relationship are shaped in part by the good and bad properties of the relationship per se, beliefs are also socially defined. That is, we also understand and experience our involvements in relation to the beliefs we hold about the good and bad properties of other people's involvements.

The conceptual model guiding our analysis of this phenomenon rests on three primary assertions. First, we propose that belief systems are subject to motivated processing, suggesting that individuals exhibit perceived superiority in part because they need to regard their relationships favorably. Second, we propose that commitment is a central variable in ongoing relationships, suggesting that strong commitment at least partially accounts for the inclination toward perceived superiority. Third, we suggest that perceived superiority serves a functional purpose, representing a habit of thought that supports couple well-being.

Our work extends the existing literature in several respects. To begin with, our method of assessing perceived superiority examines naturally occurring beliefs about relationships, using a thought-listing procedure that allows individuals to express a broad range of beliefs, including properties of the self, partner, and dyad. Also, we obtain direct evidence of the motivational properties of beliefs, effecting manipulations of instructional set to dem-

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onstrate that differing motives yield differing tendencies toward perceived superiority. Moreover, we identify what it is about relationships that motivates superior beliefs, examining the association of commitment with perceived superiority and demonstrating that the strength of this association varies as a function of differing motives. Finally, we examine the interpersonal consequences of superior beliefs, demonstrating that earlier tendencies toward perceived superiority predict persistence in relationships as well as changes over time in dyadic adjustment.

# Functional Value of Perceived Superiority

We assume that perceived superiority develops as a consequence of adaptation to circumstances of interdependence-that is, specific patterns of thinking presumably emerge and persist because they have functional value and accordingly become habitual over the course of extended involvement. How so? Over time in a relationship, we encounter a variety of interdependence problems that threaten the stability of our involvements. Sometimes we confront threats to our relationships with a positive frame of mind; sometimes we address such challenges with a more pessimistic, negative frame of mind. Compared with negative patterns of belief, positive patterns are more likely to "pay off" (cf. D. T. Miller & Turnbull, 1986). Over time, positive beliefs-in conjunction with the good outcomes promoted by such beliefs-should become increasingly prominent, providing a basis for happiness, persistence, and well-being (cf. Taylor & Brown, 1988). Although the functional value of superior beliefs may be limited when such tendencies are excessive (cf. Colvin & Block, 1994), we suggest that belief in the superiority of one's relationship generally is beneficial. Why might this be so?<sup>1</sup>

First, perceived superiority may help us cope with inevitable challenges to our relationships. Even the most idyllic relationship may be threatened by problems such as conflicting interests or tempting alternatives. The resolution of such problems frequently calls for departures from one's direct self-interest. For example, we may find it necessary to accommodate rather than retaliate when a partner behaves badly or to sacrifice personal preferences when confronted with noncorrespondent outcomes (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; Van Lange et al., 1997). Positive belief systems arguably facilitate effective coping by increasing the availability of positive solutions to interdependence problems, by enhancing the likelihood of prosocial transformation of motivation, and by promoting willingness to invest in a relationship in material and nonmaterial ways, all of which should help relationships persist through both good and bad times. Thus, perceived superiority may serve a relationship-enhancing function, such that over time a positive reality is created by corresponding positive beliefs (cf. Rusbult & Van Lange, 1996; Snyder, 1984).

Second, perceived superiority may help us sustain conviction in the face of uncertainty and doubt (cf. Brickman, 1987; Murray & Holmes, 1993). It is not always easy to remain convinced that a relationship is good and desirable or that it will survive the challenges with which it is routinely confronted—ongoing relationships may suffer low periods that arouse feelings of dissatisfaction or doubt. Also, we are confronted with a good deal of threatening information about relationships—friends routinely suffer difficult periods in their relationships, and it is easy to feel alarmed when we encounter statistics regarding rates of relationship dissolution. When confronted with information that engenders doubt or uncertainty, perceived superiority may provide reassurance that our own relationships are relatively immune to such threats. We may dissociate our relationships from a gloomy frame of reference (e.g., bringing to mind cautionary tales; a contrast effect) or link our own relationships with real or imagined relationships possessing ideal qualities (e.g., bringing to mind similarities between our own relationships and "perfect" relationships encountered in life or in fiction; an assimilation effect; cf. Schwarz, 1999).

Previous research regarding illusory beliefs provides some evidence of the interpersonal benefits of positive illusion: Belief that one's relationship is more equitable than other people's relationships is associated with concurrent marital satisfaction (Buunk & Van Yperen, 1991). Idealization of one's partner is associated with concurrent satisfaction and with declines over time in conflict and doubt (Murray et al., 1996a, 1996b). And illusory beliefs regarding the desirability of a partner, the controllability of a relationship, and the rosiness of a relationship's future predict probability of persistence and increases over time in satisfaction (Murray & Holmes, 1997). The present work contributes to this growing literature by examining whether earlier tendencies toward perceived superiority predict probability of persistence and increases over time in dyadic adjustment.

#### Motivational Properties of Perceived Superiority

Belief systems presumably are constrained by reality-thoughts regarding our own and other people's relationships at least partially reflect the reality of everyday experience. At the same time, we suggest that beliefs to some degree are illusory, or colored by motivational processes-in part, beliefs reflect the fervent hope that one's own relationship is all that one might wish it to be. The precise blend of reality and illusion presumably varies over time. Some everyday experiences are likely to enhance the need to regard one's own relationship in a favorable light, more powerfully activating the mechanisms that support illusion (cf. Kruglanski, 1990; Kunda, 1990). For example, when struggling to resist a tempting alternative, one may be especially inclined to seek consensual validation from friends ("my partner is more affectionate than most people, isn't he?"); during periods of conflict one may be especially prone to selective attention, paying particular attention to negative features of others' relationships ("other couples are physically abusive"). Thus, we propose that beliefs regarding our own and others' relationships reflect a blend of reality and illusion and that certain psychological states, such as the experience of psychological threat, will yield enhanced tendencies toward perceived superiority.2

Following a parallel line of reasoning, it seems likely that other psychological states, such as the need for accuracy, may partially "deactivate" the mechanisms supporting illusion (Allison, Messick, & Goethals, 1989; Dunning, Meyerowitz, & Holzberg, 1989).

<sup>&</sup>lt;sup>1</sup> It should be clear that when we describe positive illusion as "functional," we mean that it is functional for the relationship. There may be situations in which that which is good for a relationship does not align perfectly with that which is good for the individual.

<sup>&</sup>lt;sup>2</sup> At the same time, one might speculate that conditions of psychological threat could yield the opposite effect. When one feels anxious and threat

For example, when it is critical for one to make an informed decision regarding the future of a relationship, one may be especially prone to carefully review the negative properties of involvements ("we work very long hours; does it make sense to have a baby right now?"). It seems unlikely that illusion—or the need to regard one's own relationship as superior—will completely disappear under such circumstances, in that the need to sustain conviction in one's own relationship arguably is relatively pervasive and adaptive. Thus, we suspect that accuracy goals attenuate inclinations toward superior beliefs—that is, accuracy goals are likely to reduce but not eliminate tendencies toward perceived superiority.<sup>3</sup>

Previous studies of positive illusion have used a variety of benchmarks against which to assess whether beliefs are illusory. Some investigators have examined illusion by assessing whether individuals evaluate their partners more favorably than the partner evaluates the self (Murray et al., 1996a, 1996b). Other investigators have examined illusion by assessing whether individuals evaluate their own relationships more favorably than they evaluate others' relationships (Buunk & Van Yperen, 1991; Martz et al., 1998; Murray & Holmes, 1997). However, far fewer studies have examined the motivational properties of illusion by means of the direct manipulation of motives. Some researchers have used threat manipulations to study perceptions of conflict, evaluations of alternative partners, and empathic accuracy (Johnson & Rusbult, 1989; Murray & Holmes, 1993; Simpson, Ickes, & Blackstone, 1995). We know of no investigations examining relationshiprelevant beliefs in which accuracy goals have been examined.

In the present work, we actively manipulate instructional set, proposing that if belief systems are subject to motivational forces, differing instructions should yield differing levels of perceived superiority. When individuals feel psychologically threatened, they should be powerfully inclined to regard their relationships as superior; when motivated by accuracy goals, they should exhibit reduced tendencies toward perceived superiority. To provide further evidence of the illusory component of perceived superiority, we will assess whether the inclination to describe one's own relationship as superior is evident beyond a measure of relationship quality that arguably is relatively uninfluenced by motivational forces. If tendencies toward perceived superiority exceed that which (a) is evident when individuals are asked to be as accurate as possible and (b) is attributable to the "objective quality" of a relationship, then we may more confidently conclude that this tendency is colored by illusion.

### Mechanisms Underlying Positive Illusion

The preceding analysis provides a framework in which to understand when and why illusion is beneficial. Of course, illusory beliefs are not necessarily consciously acquired, nor do the mechanisms underlying such patterns necessarily result from deliberate effort. On critical occasions one may consciously bring about such a frame of mind—for example, one may deliberately achieve a sense of gratitude by reviewing his or her partner's finest qualities or by bringing to mind the limitations of others' relationships. But more typically, positive illusion presumably represents a relatively automatic habit of thinking. The present work does not examine the precise mechanisms accounting for positive illusion. Nevertheless, it is important to identify one or more mechanisms that may, individually or collectively, account for this phenomenon.

The ability to develop and sustain belief in the superiority of one's own relationship arguably rests in part on the nature of the information we possess about our own and others' relationships (cf. Fiske & Taylor, 1991). It would seem that in general, individuals might hold relatively positive beliefs about relationships: Presumably, relationships persist in part because they yield good outcomes. Indeed, abstract beliefs about interpersonal relations tend to be fairly positive (cf. Fiske, 1980; Skowronski & Carlston, 1989). In such a positive context, negative information should be especially salient and vivid (e.g., gossip captures our attention and is memorable; cf. Fiske, 1980; Kanouse & Hanson, 1972). Assuming that one possesses more information about one's own relationships than others' relationships-and assuming that people engage in some degree of impression management in everyday life, presenting a more positive picture of their relationships than objectively may be warranted-it would seem logical that one would hold both more positive and more negative information regarding one's own relationships than others' relationships.

We suggest that the availability and salience of negative information is softened or overshadowed in thinking about one's own relationships by means of motivated cognitive processes such as (a) selective attention, encoding, or retrieval; (b) consensual validation provided by like-minded friends and kin who support rather than disconfirm one's positive beliefs; and (c) the breadth of information one holds about one's own relationships, including information about positive internal events such as good intentions and effort expenditure (cf. Fiske & Taylor, 1991). In addition, social comparison may play a role in developing and maintaining illusion by means of (a) downward comparison-comparing one's own relationships with actual or imagined relationships that are worse off; (b) dimensional comparison-selectively focusing on dimensions for which one's own relationship is advantaged; (c) manipulation of surrounding dimensions-bringing to mind information that discounts the apparent superiority of others' relationships; and (d) avoidance of comparison-ignoring information that is likely to yield discouraging evidence (cf. Wills, 1991; Wood & Taylor, 1991). Thus, motivated cognition and social comparison may enable individuals to "see what they wish to see" by means of suppression, selective attention, and other defensive maneuvers. Such maneuvers allow individuals to construct charitable, even idealized, images of their partners and relationships while selectively attending to the less desirable properties of others' relationships.

ened, one could obsessively focus on the negative features of one's relationships (and the good features of others' relationships). Also, assuming that negative information may be more salient and available for one's own relationships than for others' relationships, when one feels anxious and threatened, negative thoughts about one's relationship might readily come to mind; parallel negative thoughts regarding others' relationships might be considerably less available.

 $<sup>^{3}</sup>$  At the same time, one might speculate that accuracy goals could yield the opposite effect. It is easy to imagine that when one wishes to be as accurate as possible, one might feel especially motivated to regard one's relationships in an unambiguously favorable light.

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#### Commitment as a Motivator of Perceived Superiority

Presumably, tendencies toward perceived superiority vary across relationships. What accounts for such variability? We suggest that commitment is a key variable in ongoing relationships and propose that strong commitment motivates perceived superiority. Commitment level represents long-term orientation toward a relationship, emotional attachment to the relationship, and intent to persist. Commitment is strengthened to the degree that individuals are more dependent on their relationships---to the extent that (a) satisfaction level is high (the relationship gratifies important needs), (b) quality of alternatives is poor (important needs could not easily be gratified independent of the relationship), and (c) important resources are invested in a relationship (identity, effort, material possessions; Rusbult, 1983). Consistent with these claims, the empirical literature reveals that satisfaction, alternatives, and investments contribute unique variance to predicting commitment and persistence (Bui, Peplau, & Hill, 1996; Felmlee, Sprecher, & Bassin, 1990; Rusbult, 1983).

Why might committed individuals be motivated to regard their relationships as superior? First, committed individuals are dependent and literally need their relationships—important resources have been invested in the relationship, and the relationship fulfills important needs that cannot be gratified elsewhere. In a lowdependence relationship, it is relatively easy to see things as they are, acknowledging both its good and not-so-good qualities. In contrast, dependent individuals have a considerable stake in perceiving their relationships in a positive and optimistic light.

Second, commitment involves long-term orientation. In addition to considering the here and now, committed individuals anticipate the future. Given short-term orientation, the only material available for forming beliefs centers on that which currently exists perceptions are shaped by the (sometimes harsh) reality of the current situation. Given long-term orientation, beliefs are not limited to the here and now—the potential for illusion is enlarged, in that beliefs may be based in part on idealized fantasies about that which might come to pass in the future. In addition, the psychological costs of confronting a harsh reality are greater when temporal span is extended than when temporal span is limited.

Third, commitment involves emotional attachment. Committed individuals develop collective representations of the self, yielding some degree of self-other merger (Agnew, Van Lange, Rusbult, & Langston, 1998; cf. Aron & Aron, 1997). Over time, the mechanisms that normally promote *self*-enhancement may come to promote *relationship*-enhancement—that which is good about the relationship may become inseparable from that which is good about the self. Thus, committed individuals may exhibit superior beliefs in part because enhancing the relationship is tantamount to enhancing the self.

Fourth, strong commitment may induce collectivistic, communal orientation (cf. Clark & Mills, 1979). To the extent that committed individuals are communally oriented, they may not only enact prorelationship behaviors in a relatively unconditional manner, but may also exhibit somewhat unconditional acceptance of the partner and relationship, interpreting both positive and negative qualities in the best possible light. That is, commitment may strengthen the individual's desire to rather unconditionally accept the partner and relationship, embracing negative attributes and cognitively transforming faults into virtues (Murray & Holmes, 1993).

In short, we propose that when people are strongly committed to their relationships, they have a greater need to regard their relationships in a favorable light. Assuming that beliefs are socially defined—that is, assuming that one understands and experiences one's own involvement in relation to the beliefs one holds about other involvements-it follows that highly committed individuals will be motivated to perceive that their relationships possess more positive attributes (and fewer negative attributes) than others' relationships. Some research provides indirect support for the claim that commitment might promote perceived superiority, in that commitment has been shown to be associated with prorelationship cognitive tendencies, such as excessive optimism and unrealistic perceptions of control (Martz et al., 1998), plural pronoun use in descriptions of a relationship (Agnew et al., 1998), and the derogation of tempting alternatives (Johnson & Rusbult, 1989; R. S. Miller, 1997). Also, commitment is associated with prorelationship maintenance acts, such as willingness to sacrifice (Van Lange et al., 1997) and accommodation (Rusbult et al., 1991).

However, to claim that commitment motivates perceived superiority, one must do more than demonstrate that committed individuals describe their relationships more favorably than they describe others' relationships. How is one to know that such a tendency reflects more than the fact that high commitment relationships really are better than the average relationship, at least with regard to the attributes that a given individual regards as important? How is one to know that such a tendency reflects more than the fact that low commitment relationships really are inferior? To conclude that commitment motivates superior beliefs---that is, to conclude that commitment reflects, at least in part, the need to regard one's own relationship as relatively favored-it must be demonstrated that the motivational effects of commitment can be "turned on and off." That is, it must be shown that the psychological states that are argued to activate and deactivate illusion likewise active and deactivate the commitment-superiority link. Thus, we suggest that the commitment-superiority association will be strongest when individuals feel psychologically threatened and will be weakest when individuals are motivated by accuracy goals.

#### Measurement of Perceived Superiority

In the present work, we examine perceived superiority using a relatively unobtrusive, open-ended thought-listing task that reveals individuals' natural belief systems. Participants were asked to list the positive and negative qualities that came to mind when thinking about their own and others' relationships. Perceived superiority is reflected in the tendency to (a) hold a greater number of positive thoughts regarding one's own relationship than others' relationships and (b) hold fewer negative thoughts regarding one's own relationships.

Although some research regarding self-other judgments and self-relevant social comparison has examined how comparison beliefs are expressed in individuals' spontaneous, everyday thoughts (e.g., Messick, Bloom, Boldizar, & Samuelson, 1985; Wood, Taylor, & Lichtman, 1985), thus far, most research in the relationships domain has used researcher-structured methods. As Wood et al. (1985) noted, "free-response comparisons ... may be more central to the [individual's] experience than the comparisons elicited by investigator-designed questions" (p. 1172). In addition to examining naturally occurring thoughts, our technique allows for the expression of a broad range of relationship-relevant beliefs, including properties of the self, partner, and dyad.

Our measurement technique appears to be reliable and valid in that we have observed parallel findings for (a) the present twocategory measurement system wherein positive and negative beliefs are categorized as typical of either one's own or others' relationships, (b) a three-category system wherein beliefs are categorized as typical of one's own relationship, others' relationships, or both own and others' relationships, and (c) a system using continuous scales to independently assess perceptions of one's own and others' relationships (Martz et al., 1998; Van Lange & Rusbult, 1995). Measures of perceived superiority obtained using the present technique also exhibit good test-retest consistency and are largely uncolored by tendencies toward socially desirable responding.<sup>4</sup>

We designed two studies to test hypotheses relevant to the propositions that perceived superiority (a) reliably exists, (b) reflects motivated processing, (c) is promoted by strong commitment, and (d) yields enhanced couple well-being. Study 1 is a laboratory experiment that examines young adults' dating relationships, and Study 2 uses data from a longitudinal study of married partners. Study 1 examines the motivational properties of perceived superiority, whereas Study 2 focuses largely on the consequences of perceived superiority for couple well-being.

#### Study 1

The first hypothesis examined in Study 1 concerns the existence and form of perceived superiority. Using our  $2 \times 2$  withinparticipant thought-listing technique, total perceived superiority is the interaction of Item Valence (positive vs. negative thoughts)  $\times$ Item Target (own relationship vs. other relationships). This phenomenon can be decomposed into four effects. Hypothesis 1 suggests that participants will exhibit (a) positive superioritymore positive thoughts about one's own relationship than others' relationships; (b) negative superiority-fewer negative thoughts about one's own relationship than others' relationships; (c) own relationship positivity-more positive than negative thoughts about one's own relationship; and (d) other relationships negativity-more negative than positive thoughts about others' relationships. The several forms of perceived superiority are not independent of one another, they are simply different ways of "carving up" our  $2 \times 2$  thought-listing data. However, it is useful to examine all four forms of superiority, as well as all four types of thought, to illuminate the unique patterns of belief that characterize individuals' thoughts about relationships. We held the general expectation that our hypotheses would receive support for all four forms of superiority (as well as for all four types of thought).

A second hypothesis is relevant to the assertion that perceived superiority involves motivated processing. We assume that perceptions of a relationship are constrained by reality—that individuals who are involved in good relationships will tend to describe their relationships more favorably than will those who are in poor relationships. At the same time, we assume that beliefs regarding relationships are responsive to motivational forces. In Study 1, we varied thought-listing instructions to manipulate motives, examining tendencies toward perceived superiority given psychologically threatening instructions, control instructions, and accuracy instructions.

To assess the effects of threat we compare results in the threat condition with results in the control and accuracy conditions. The control condition does not include motivation-relevant instructions, so this condition serves as a natural baseline, yet one that presumably reflects at least moderate tendencies toward illusion; the accuracy condition is a baseline that provides a closer approximation of reality. These two baselines follow from the assertion that beliefs about relationships reflect a blend of reality and illusion. A comparison of the control and accuracy conditions is germane to hypotheses regarding the deactivation of motivated processing given accuracy goals.

Hypothesis 2a predicts that participants who receive psychologically threatening instructions will exhibit greater perceived superiority than will those who receive control or accuracy instructions. If superior beliefs rest in part on motivational forces, when their conviction is threatened, individuals should exhibit enhanced superiority ("illusion" should be more evident). Hypothesis 2b predicts that compared with participants in the control condition, those given accuracy instructions will exhibit reduced perceived superiority. If perceived superiority is partially real and partially motivated, and if we urge individuals to be as accurate as possible in describing relationships, they should exhibit reduced superiority ("reality" should be more evident).

A third hypothesis is relevant to the assertion that perceived superiority is motivated by strong commitment. Of course, a prerequisite is that commitment must be positively associated with perceived superiority (Hypothesis 3a). However, assuming that superior beliefs rest on both reality and illusion, it may be that (a) objectively good relationships inspire strong commitment along with realistically high scores on our perceived superiority measure, or that (b) commitment motivates unrealistically positive thoughts about one's own relationship along with unrealistically negative thoughts about others' relationships, yielding illusory perceived superiority. We use several strategies to "separate illusion from reality."

First, assuming that the motivational properties of commitment are particularly active under conditions of threat, we should find that the commitment-superiority association is stronger among participants who receive psychologically threatening instructions than among those who receive control or accuracy instructions (Hypothesis 3b). Second, if we assume that the motivational properties of commitment are only weakly activated given accuracy instructions, we should find that the commitment-superiority association is weaker among participants who receive accuracy instructions than among those who receive control instructions (Hypothesis 3c).

Finally, if commitment motivates superior beliefs, then commitment should account for unique variance in perceived superiority beyond reality, or beyond the objective quality of a relationship. It

<sup>&</sup>lt;sup>4</sup> In unpublished work using the present technique, we found that the number of positive and negative thoughts individuals list for their own and others' relationships (a) exhibit good test-retest reliability over an 8-week period (rs = .51, .54, .47, and .54, all ps < .01) and (b) are unrelated to socially desirable responding (Crowne & Marlowe, 1964; rs = -.01, -.18, -.15, and .11, all ns).

is not a simple matter to assess objective quality, in that participant-provided descriptions may themselves be colored by illusion. In Study 1, we used evaluations of specific relationship attributes as a gauge of objective quality (e.g., partner physical attractiveness, attitudinal similarity). This decision rests on the assumption that the more concrete and specific the measure of relationship quality, the less the measure will be tainted by illusion. Indeed, the empirical literature reveals that tendencies toward positively biased evaluation are greater for global, abstract judgments than for specific, concrete judgments (Dunning et al., 1989; Dunning & McElwee, 1995; Van Lange & Rusbult, 1995). Thus, Hypothesis 3d predicts that commitment will account for unique variance in perceived superiority beyond evaluations of specific relationship attributes.<sup>5</sup>

#### Method

Participants. Two hundred forty-nine undergraduates (151 women, 98 men) volunteered to take part in the study in partial fulfillment of the requirements for introductory psychology courses at the University of North Carolina. Participants took part in the study in same-sex groups ranging in size from 3 to 8 persons. Participants were randomly assigned to one of three experimental conditions, with approximately equal proportions of women and men across conditions.<sup>6</sup> Participants were 19.12 years old on average, most were freshmen or sophomores (52% freshmen, 33% sophomores, 11% juniors, 4% seniors), and the majority were Caucasian (10% African American, 1% Asian American, 87% Caucasian, 2% Other). Participants' relationships were an average of 16.08 months in duration; most participants described their relationships as steady dating relationships (3% engaged, 77% dating steadily, 13% dating regularly, 4% dating casually, 3% other) and indicated that neither they nor their partners dated others (87% said neither dated others, 6% said either they or their partners dated others, 7% said both dated others).

Procedure. Sign-up sheets listed the following requirement: "To participate you must currently be involved in a dating relationship of at least three months in duration." The experiment was described as a study of attitudes and behavior in close relationships. First, participants completed a questionnaire designed to measure commitment and obtain evaluations of specific relationship attributes. We measured commitment level using a version of the 7-item instrument from the Investment Model Scale (Rusbult, Martz, & Agnew, 1998; e.g., "Do you feel committed to maintaining your relationship?" 0 = not at all committed, 8 = completely committed;  $\alpha$  = .92). We obtained relationship attribute ratings using an expanded version of an instrument used in previous research regarding commitment and satisfaction (Rusbult, 1983; Rusbult et al., 1991). This instrument obtains ratings of relationship quality on eight dimensions: sexual gratification, compatibility, similarity of goals, similarity of attitudes, mutual support, partner physical attractiveness, partner sense of humor, and partner affirmation of the self (e.g., "My partner is very physically attractive" and "My partner and I have very similar attitudes"; for each item, 0 = don'tagree at all, 8 = agree completely;  $\alpha = .78$ ).

Next, the experimenter distributed materials for the thought-listing task, reviewed the instructions, and introduced one of three instructional sets. In the control instructions condition the experimenter simply explained, "We're interested in how your dating relationship may be similar to versus different from other people's dating relationships." In the threat instructions condition the experimenter added to the control instructions, "We are especially interested in college students' dating relationships because previous research has demonstrated that in comparison to other types of relationships, college students' relationships are less likely to persist over time and tend to exhibit lower levels of overall adjustment. Of course, this is not necessarily true of all college students' relationships—it's simply true on average." In contrast, in the accuracy instructions condition the experimenter added to the control instructions, "In describing your own and others' relationships we would like you to be as honest and accurate as you possibly can."

Following Van Lange and Rusbult (1995), perceived superiority was assessed using a thought-listing measure obtained in the context of a 2 (item valence: participants listed positive vs. negative features of relationships)  $\times$  2 (item target: participants indicated whether items best described own relationship vs. other relationships) within-participant design. One page of the questionnaire asked participants to bring to mind and describe good features of relationships (positive item valence condition), and a second page asked them to describe bad features (negative item valence condition). Instructions for the positive item valence condition read as follows:

### Good Things About Relationships and Partners

Below, please list features of romantic relationships and partners that you think of as good and desirable. If you think that a good feature is more typical of your relationship or partner than of others', begin the sentence with "My relationship..." or "My partner..."; if you think that a good feature is more typical of others' relationships or partners than of yours, begin the sentence with "Other people's relationships..." or "Other people's partners..."

Instructions for the negative item valence condition were identical except that "bad" was substituted for "good" and "undesirable" was substituted for "desirable." Participants were given 5 min to list positive features and 5 min to list negative features; the order in which they listed positive and negative features was counterbalanced across participants within each research session. At the end of the session, participants were thoroughly debriefed and thanked for their assistance. Trained undergraduate research assistants later scored participants' lists, recording the number of positive

<sup>5</sup> Using evaluations of concrete relationship attributes to assess "objective quality" is preferable to using a global measure of satisfaction level, which is likely to be influenced by the very motivational forces that we wish to examine. Compared with judgments regarding concrete attributes, global judgments (a) are more susceptible to filtering and idiosyncratic interpretation, whereby the individual brings to mind positive features of a relationship and ignores negative features (cf. Dunning et al., 1989; Wood & Taylor, 1991), (b) imply greater generalizability, and therefore induce more socially desirable responding (cf. Van Lange & Sedikides, 1998), and (c) imply less modifiability, in that such judgments frequently describe enduring qualities of a relationship (cf. Alicke, 1985). Thus, examining the "illusory" component of the commitment-superiority association by controlling for global satisfaction level would be tantamount to examining the commitment-superiority association while controlling for illusion. In relation to global satisfaction level, the use of a concrete attributes measure comes closer to assessing the objective quality of a relationship.

<sup>6</sup> This research originally was represented as two separate experiments. One experiment included the threat instructions condition and a control condition, and the second experiment included the accuracy instructions condition and a control condition. Given that the two control conditions were identical—and given that the experiments were conducted during the same semesters using the same participant population, experimenters, laboratories, and so forth—it did not seem unreasonable to represent the experiments as a single study with three experimental conditions. A total of 74 participants were assigned to the threat condition (46 women, 28 men), 119 participants were assigned to the control condition (71 women, 48 men), and 56 participants were assigned to the accuracy condition (34 women, 22 men).

#### Table 1

	Positive it	Positive item valence		Negative item valence		
Condition	Own relationship	Other relationships	Own relationship	Other relationships		
Threat instructions condition						
High commitment	9.95	0.07	0.93	6.56		
Low commitment	6.82	1.48	2.85	4.29		
Control instructions condition						
High commitment	8.04	0.68	2.27	4.78		
Low commitment	6.73	1.34	3.75	2.91		
Accuracy instructions condition						
High commitment	6.61	1.47	4.15	2.61		
Low commitment	5.28	2.33	4.55	2.82		

Mean Number of Thoughts as a Function of Item Target, Item Valence, Experimental Condition, and Commitment Level: Study 1

*Note.* Table values reflect number of thoughts listed. The predicted means for commitment were conditioned at values of one standard deviation above and below the mean of commitment level (Aiken & West, 1991).

and negative thoughts listed for own relationship and for others' relationships. $^7$ 

# Results

We performed a 6-factor analysis to test predictions associated with Hypotheses 1, 2, and 3. Two independent variables were within-participant variables: item valence (positive vs. negative thoughts) and item target (own relationship vs. other relationships). Three independent variables were categorical betweenparticipant variables: experimental condition (threat vs. control vs. accuracy instructions), gender (male vs. female), and task order (positive vs. negative thoughts listed first). Commitment level was a continuous between-participant variable. Table 1 presents mean number of thoughts listed as a function of item valence, item target, experimental condition, and commitment level; the predicted means for commitment were conditioned at values of one standard deviation above and below the mean of commitment level (Aiken & West, 1991). Table 2 summarizes the results of key analyses.

Hypothesis 1: Existence and form of perceived superiority. Hypothesis 1 predicted that participants would exhibit perceived superiority, regarding their own relationships as both better than and not as bad as other relationships. As expected, the Item Target  $\times$  Item Valence interaction was significant (see Table 2 under Is Perceived Superiority Evident?, Target × Valence interaction row). Tests of simple effects revealed good support for all four forms of perceived superiority (see Table 2 under Tests of simple effects). Participants exhibited (a) positive superiority, listing a greater number of positive thoughts for their own than others' relationships; (b) negative superiority, listing fewer negative thoughts for their own than others' relationships; (c) own relationship positivity, listing a greater number of positive than negative thoughts for their own relationships; and (d) other relationships negativity, listing a greater number of negative than positive thoughts for others' relationships (see means in Table 1).

Hypothesis 2: Impact of instructional set on perceived superiority. Hypothesis 2 predicted that if superior beliefs rest on motivated processing, tendencies toward perceived superiority should differ as a function of instructional set. As expected, the Target  $\times$  Valence  $\times$  Condition interaction was significant (see Table 2 under Is Perceived Superiority Differentially Evident Across Experimental Conditions?). Also, tests of simple effects revealed that the condition effect was significant for all four forms of perceived superiority, as well as for all four types of item—for both positive and negative items listed for one's own and others' relationships (see Table 2 under "Tests of simple effects, Condition effect rows"). For the three-group condition effect, we have two degrees of freedom available for planned contrasts. To test Hypotheses 2a and 2b we (a) compared the threat condition with the control and accuracy conditions and (b) compared the control condition with the accuracy condition.

Hypothesis 2a predicted that perceived superiority would be greater in the threat condition than in the control and accuracy conditions. As expected, the Target  $\times$  Valence  $\times$  Threat-Versus-Other-Conditions Contrast was significant (see Table 2 under Is Perceived Superiority Differentially Evident Across Experimental Conditions?). Tests of simple effects revealed that the threat-

<sup>&</sup>lt;sup>7</sup> In both Study 1 and Study 2, after completing the thought-listing task, participants were asked to review their lists and assign a desirability rating to each item: "Now rate the desirability/undesirability of each feature using the following scale" (-4 = not at all desirable, 4 = extremely desirable). In addition to counting the number of positive and negative thoughts listed for own and others' relationships, trained undergraduate research assistants also calculated the mean positivity versus negativity of thoughts listed for own and others' relationships. When participants failed to list any thoughts for a given category (e.g., when a participant listed no negative qualities for his or her own relationship), a mean rating of 0 was assigned for that category (cf. Van Lange & Rusbult, 1995). (We reasoned that if a participant listed no positive qualities for others' relationships, those relationships were regarded as neutral on average, at best; if a participant listed no negative qualities for his or her own relationship, the relationship was regarded as neutral on average, at worst.) To develop measures of average item ratings that paralleled the measures of number of items, we recorded the absolute value of participants' average ratings. (We recorded the absolute value of ratings so that in the negative item valence condition, high numbers reflect greater negativity, as is the case for the measure of number of thoughts.) Analyses performed using these average item ratings paralleled those observed for number of items.

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Table 2			
Analysis of Variance	e Summary	Table: Study 1	_

Is Perceived Superiority Evident? Full model			
Full model			
Item target main effect	241.18	1, 222	.01
Item valence main effect	54.20	1, 222	.01
Target $\times$ Valence interaction	334.08	1, 222	.01
Tests of simple effects		-,	
Positive superiority effect	622.40	1, 222	.01
Negative superiority effect	12.33	1, 222	.01
Own relationship positivity effect	322.28	1, 222	.01
Other relationships negativity effect	213.22	1, 222	.01
Is Perceived Superiority Differentially Evident Across Experim			
	iental Conditions	1	
Full model Target $\times$ Valence $\times$ Condition	37.65	2 222	01
Target $\times$ Valence $\times$ Condition Target $\times$ Valence $\times$ Threat-Versus-Other-Conditions Contrast	63.03	2, 222	.01 .01
Target $\times$ Valence $\times$ Control-Versus-Other-Conditions Contrast Target $\times$ Valence $\times$ Control-Versus-Accuracy Contrast		1, 222	
	26.50	1, 222	.01
Tests of simple effects:			
Positive superiority effect	16.67	0.000	
Condition effect	15.57	2, 222	.01
Threat-Versus-Other-Conditions Contrast	22.35	1, 222	.0
Control-Versus-Accuracy Contrast	15.40	1, 222	.01
Negative superiority effect			_
Condition effect	28.60	2, 222	.01
Threat-Versus-Other-Conditions Contrast	51.65	1, 222	.01
Control-Versus-Accuracy Contrast	14.94	1, 222	.0
Own relationship positivity effect			
Condition effect	31.60	2, 222	.0
Threat-Versus-Other-Conditions Contrast	51.77	1, 222	.01
Control-Versus-Accuracy Contrast	23.70	1, 222	.0
Other relationships negativity effect			
Condition effect	29.17	2, 222	.01
Threat-Versus-Other-Conditions Contrast	50.10	1, 222	.0
Control-Versus-Accuracy Contrast	18.87	1, 222	.01
Positive items for own relationship			
Condition effect	9.05	2, 222	.01
Threat-Versus-Other-Conditions Contrast	14.37	1, 222	.01
Control-Versus-Accuracy Contrast	7.33	1, 222	.0
Positive items for other relationships			
Condition effect	11.53	2, 222	.01
Threat-Versus-Other-Conditions Contrast	12.39	1, 222	.0
Control-Versus-Accuracy Contrast	15.63	1, 222	.01
Negative items for own relationship		,	
Condition effect	19.20	2, 222	.01
Threat-Versus-Other-Conditions Contrast	32.34	1, 222	.01
Control-Versus-Accuracy Contrast	13.26	1, 222	.0
Negative items for other relationships	10,20	.,	.0
Condition effect	18.01	2, 222	.0
Threat-Versus-Other-Conditions Contrast	34.05	1, 222	.0.
Control-Versus-Accuracy Contrast	6.97	1, 222	.0.

Is Perceived Superiority Differentially Evident as a Function of Commitment Level and Experimental Condition?

Full model			
Target $\times$ Valence $\times$ Commitment	54.38	1, 222	.01
Target $\times$ Valence $\times$ Condition $\times$ Commitment	5.55	2, 222	.01
Target $\times$ Valence $\times$ Threat-Versus-Other-Conditions Contrast $\times$ Commitment	10.10	1, 222	.01
Target × Valence × Control-Versus-Accuracy Contrast × Commitment	2.51	1, 222	.11
Tests of simple effects			
Positive superiority effect			
Commitment effect	37.67	1, 222	.01
Condition $\times$ Commitment	3.38	2, 222	.04
Threat-Versus-Other Conditions Contrast $\times$ Commitment	6.32	1, 222	.01
Control-Versus-Accuracy Contrast × Commitment	0.03	1, 222	.86

Effect	F	df	<i>p</i> <
Is Perceived Superiority Differentially Evident as a Commitment Level and Experimental Condition?			
Test of simple effects (continued)			
Negative superiority effect			
Commitment effect	25.57	1, 222	.01
Condition $\times$ Commitment	4.80	2, 222	.01
Threat-Versus-Other-Conditions Contrast $\times$ Commitment	5.29	1, 222	.02
Control-Versus-Accuracy Contrast $\times$ Commitment	6.11	1, 222	.01
Own relationship positivity effect			
Commitment effect	49.50	1, 222	.01
Condition $\times$ Commitment	4.51	2, 222	.01
Threat-Versus-Other-Conditions Contrast × Commitment	8.87	1, 222	.01
Control-Versus-Accuracy Contrast × Commitment	0.88	1, 222	.35
Other relationships negativity effect			
Commitment effect	37.74	1, 222	.01
Condition $\times$ Commitment	4.86	2, 222	.01
Threat-Versus-Other-Conditions Contrast $\times$ Commitment	7.37	1, 222	.01
Control-Versus-Accuracy Contrast × Commitment	4.06	1, 222	.05
Positive items for own relationship			
Commitment effect	20.74	1, 222	.01
Condition $\times$ Commitment	2.24	2, 222	.11
Threat-Versus-Other-Conditions Contrast × Commitment	4.30	1, 222	.04
Control-Versus-Accuracy Contrast × Commitment	0.00	1, 222	.97
Positive items for other relationships		,	
Commitment effect	29.54	1, 222	.01
Condition $\times$ Commitment	1.80	2, 222	.17
Threat-Versus-Other-Conditions Contrast $\times$ Commitment	3.00	1, 222	.08
Control-Versus-Accuracy Contrast $\times$ Commitment	0.19	1, 222	.67
Negative items for own relationship		-,	
Commitment effect	18.83	1, 222	.01
Condition $\times$ Commitment	2.03	2, 222	.13
Threat-Versus-Other-Conditions Contrast $\times$ Commitment	2.64	1, 222	.11
Control-Versus-Accuracy Contrast × Commitment	2.19	1, 222	.14
Negative items for other relationships	2.17	.,	
Commitment effect	14.57	1, 222	.01
Condition × Commitment	4.21	2, 222	.01
Threat-Versus-Other-Conditions Contrast $\times$ Commitment	4.15	1, 222	.04
Control-Versus-Accuracy Contrast × Commitment	5.82	1, 222	.07

*Note.* Table values are *Fs* from six-factor analyses including two within-participant variables (item target and item valence) and four between-participant variables (experimental condition [threat vs. control vs. accuracy], sex, task order, and commitment).

versus-other-conditions contrast was significant for all four forms of perceived superiority, as well as for all four types of item—for positive and negative items listed for one's own and others' relationships (see Table 2 under Tests of simple effects, Threatversus-other-conditions rows). Compared with the levels of perceived superiority evident in the control and accuracy conditions, under conditions of psychological threat, participants exhibited reliably greater perceived superiority (see means in Table 1 under Condition).

Hypothesis 2b predicted that levels of perceived superiority would be lower in the accuracy condition than in the control condition. As expected, the Target  $\times$  Valence  $\times$  Control-Versus-Accuracy Contrast was significant. Tests of simple effects revealed that the control-versus-accuracy contrast was significant for all four forms of perceived superiority, as well as for all four types of item (see Table 2, Control-versus-accuracy rows). Compared with the levels of perceived superiority evident in the control condition, participants with accuracy goals exhibited reliably reduced perceived superiority. In fact, participants in the accuracy condition exhibited negative inferiority, reporting more negative thoughts regarding their own relationships than other relationships, F(1, 222) = 9.54, p < .01 (see means in Table 1 under Accuracy instructions condition).<sup>8</sup>

Hypothesis 3: Associations of commitment level with perceived superiority. Hypothesis 3a predicted that commitment would be positively associated with perceived superiority. As expected, the Target  $\times$  Valence  $\times$  Commitment interaction was significant (see Table 2 under Is Perceived Superiority Differentially Evident as a Function of Commitment Level and Experimental Condition?). Also, tests of simple effects revealed that the commitment effect

<sup>&</sup>lt;sup>8</sup> Given that participants in the control condition reliably exhibited greater perceived superiority than those in the accuracy condition, readers may wonder whether levels of perceived superiority differed for the threat and control conditions. Although this contrast is not orthogonal to the two planned comparisons, we conducted exploratory analyses to address this issue. These analyses revealed that the threat-versus-control contrast was

Table 3

Predicting perceived superiority	Threat condition $(\beta)$	Control condition (β)	Accuracy condition $(\beta)$	Threat vs. Other conditions (F)	Control vs. Accuracy condition (F)
Total perceived superiority	.61**	.37**	.17	10.10**	2.51
Positive superiority	.57**	.25**	.27*	6.32**	0.03
Negative superiority	.47**	.37**	.02	5.29*	6.11**
Own relationship positivity	.60**	.33**	.20†	8.87**	0.88
Other relationships negativity	.55**	.38**	.10	7.37**	4.06*
Positive items, own relationship	.46**	.19*	.19	4.30*	0.00
Positive items, other relationships	50**	24**	30*	3.00†	0.19
Negative items, own relationship	41**	32**	09	2.64	2.19
Negative items, other relationships	.39**	.32**	04	4.15*	5.82*

Note. Values under Threat, Control, and Accuracy conditions are standardized coefficients reflecting the association of commitment with each effect. Values under Threat vs. Other conditions indicate whether the commitment-superiority association differs for the threat condition in comparison to other conditions; values under Control vs. Accuracy conditions indicate whether this association differs for the control and accuracy conditions. Table values are from six-factor analyses including two within-participant variables (item target and item valence) and four between-participant variables (experimental condition, gender, task order, and commitment). For all analyses, df = 1, 222.

 $\dagger p < .10$  (marginally significant). \* p < .05. \*\* p < .01.

was significant for all four forms of superiority, as well as for all four types of item (see means in Table 1). Thus, the more committed individuals are, the more they are inclined to regard their relationships as superior to others' relationships; this inclination is considerably weaker among low-commitment individuals (individuals with extremely low commitment actually regard their own relationships as inferior).

Beyond this, we suggested that if we are to conclude that commitment motivates superior beliefs, we must demonstrate that the commitment-superiority association can be turned on and off-that the the strength of this association varies as a function of instructional set. As expected, the Target  $\times$  Valence  $\times$  Condition  $\times$  Commitment effect was significant (see Table 2). For the three-group condition effect, we have two degrees of freedom available for planned contrasts. To test Hypotheses 3b and 3c we (a) compared the strength of the commitment-superiority association in the threat condition with that evident in the control and accuracy conditions and (b) compared the strength of the commitment-superiority association in the control condition with that evident in the accuracy condition. The results of these analyses are summarized in Table 2, but are more easily interpreted in Table 3, which displays (a) coefficients representing the commitment-superiority association for each experimental condition, along with (b) contrasts comparing the strength of the commitmentsuperiority association for the above-noted comparisons.

Hypothesis 3b suggested that if the motivational properties of commitment are particularly active under conditions of threat, we should find that the commitment-superiority association is stronger among participants who receive psychologically threatening instructions than among those who receive control or accuracy instructions. As expected, the Target × Valence × Threat-Versus-Other-Conditions Contrast × Commitment interaction was significant (see Table 3, Total perceived superiority represents the Target  $\times$  Valence interaction, F[1, 222] = 10.10, p < .01). Tests of simple effects revealed that the Threat-Versus-Other-Conditions Contrast × Commitment interaction was significant for all four forms of perceived superiority; this effect was significant or marginal for positive items describing one's own relationship, positive items describing others' relationships, and negative items describing others' relationships (see Table 3). Thus, the association of commitment with perceived superiority is particularly strong under conditions of psychological threat.

Hypothesis 3c suggested that to the degree that accuracy goals limit the impact of motivational forces, we should find that the commitment-superiority association is weaker among participants who receive accuracy instructions than among those who receive control instructions. Although the Target  $\times$  Valence  $\times$  Control-Versus-Accuracy Contrast × Commitment interaction was not significant (see Table 3, F[1, 222] = 2.51, p < .11), the commitment-superiority association was descriptively weaker in the accuracy condition than in the control condition (only three of nine coefficients were marginal or significant in the accuracy condition). These associations differed significantly in three of nine instances-for negative superiority, other relationships negativity, and negative items describing other relationships (see Table 3). It is interesting that compared with the control condition, accuracy weakened the tendency of committed individuals to report negative thoughts regarding others' relationships, suggesting that the inclination to hold negative beliefs about others' relationships may be an important means by which committed individuals typically achieve superior beliefs.<sup>6</sup>

significant for all four forms of perceived superiority, Fs(1, 222) =from 5.48 to 22.39, all ps < .05, as well as for all types of item except positive items for other relationships, Fs(1, 222) =from 4.50 to 16.98, all ps < .05. (For all effects, contrasts of the accuracy and threat conditions were significant, all ps < .01.)

<sup>&</sup>lt;sup>9</sup> Given that the commitment-superiority association was stronger in the control condition than in the accuracy condition for three of nine contrasts, readers may wonder whether this association differed for the threat and control conditions. Although this contrast is not orthogonal to the two planned comparisons, we conducted exploratory analyses to address this issue. These analyses revealed that the Threat-Versus-Control Contrast  $\times$ 

Hypothesis 3d: Unique predictive power of commitment beyond evaluations of specific relationship attributes. We reasoned that if strong commitment motivates superior beliefs, then commitment should account for unique variance in perceived superiority beyond the "objective quality" of a relationship. To test Hypothesis 3d, we examined the commitment–superiority association controlling for participants' evaluations of specific relationship attributes, including such attributes as sexual gratification, similarity of attitudes, mutual support, and partner physical attractiveness. Specifically, we replicated the above-reported 6-factor analysis, performing a 7-factor analysis that included relationship-attribute ratings as a covariate.

As would be anticipated, the effect of relationship-attribute ratings was significant or marginal for positive superiority, negative superiority, own relationship positivity, and other relationships negativity, Fs(1, 220) = from 3.46 to 14.43, all ps < .06, as well as for positive items describing others' relationships, negative items describing one's own relationship, and negative items describing others' relationships, Fs(1, 220) = from 3.82 to 16.29, all ps < .05. Participants described their own relationships more favorably and described others' relationships less favorably to the extent that they believed that their relationships possessed more desirable attributes.

At the same time, and consistent with Hypothesis 3d, virtually all of the effects described earlier for the 6-factor analysis were replicated in the 7-factor analysis including relationship attribute ratings as a covariate. In every instance, patterns of significance versus nonsignificance were identical to those reported in Table 2. For example, the Target  $\times$  Valence  $\times$  Condition interaction was significant in both the 6-factor, F(2, 222) = 37.65, p < .01, and 7-factor, F(2, 220) = 32.88, p < .01, analyses, as were the Target × Valence × Commitment interaction, F(1, 222) = 54.38, p < .01, and F(1, 220) = 24.39, p < .01, for the 6- and 7-factor analyses, respectively, and the Target  $\times$  Valence  $\times$  Condition  $\times$ Commitment interaction, F(2, 222) = 5.55, p < .01, and F(2, 222) = 5.55, p < .01, and F(2, 222) = 5.55, p < .01, F(2, 22) = 5.55, P < .01, F(2, 22) = 5.55, P < .01, F(2, 22) = 5.55, F(2, 22)220) = 5.67, p < .01, for the 6- and 7-factor analyses, respectively. As in the 6-factor analyses reported in Table 2, the 7-factor analyses revealed that the Condition effect was significant for all four forms of perceived superiority, Fs(2, 220) = from 24.50to 31.41, all ps < .01. In addition, the Commitment effect was significant for all four forms of perceived superiority, Fs(1, 220) =from 8.49 to 24.35, all ps < .01, as was the Condition  $\times$  Commitment interaction, Fs(2, 220) = from 3.24 to 5.06, all ps < .05.

Additional findings. Several additional effects from the 6-factor analysis should be mentioned, although they are not directly hypothesis relevant. First, the item target main effect was significant, F(1, 222) = 241.18, p < .01—on average, participants

reported more thoughts about their own relationships than about others' relationships (see Table 2). Second, the item valence main effect was significant, F(1, 222) = 54.20, p < .01—on average, participants reported a greater number of positive than negative thoughts (see Table 2). Third, the Valence  $\times$  Commitment interaction was significant, F(1, 222) = 6.06, p < .01—on average, the above-noted valence effect was stronger for high-commitment individuals than for low-commitment individuals.

In addition, the 6-factor analysis revealed significant results for several effects involving gender. The main effect of gender was significant, F(1, 222) = 7.94, p < .01, as were the Gender × Target × Valence interaction, F(1, 222) = 3.94, p < .05, the Sex × Target × Valence × Condition interaction, F(1, 222) = 3.71, p < .03, and the Sex × Target × Valence × Commitment interaction, F(1, 222) = 3.84, p < .05. Women listed a greater number of thoughts than men, exhibited greater overall tendencies toward perceived superiority, and the commitment-superiority association was stronger among women than among men. At the same time, all of the earlier-noted effects were significant for both women and men. Finally, out of a total of 24 possible effects involving task order (positive vs. negative thoughts listed first), only one effect was significant.

# Discussion

Study 1 revealed good support for Hypothesis 1, revealing evidence of all four forms of perceived superiority—individuals had more good things to say about their own relationships than about others' relationships (positive superiority), fewer bad things to say about their own relationships than about others' relationships (negative superiority), more good than bad things to say about their own relationships (own relationship positivity), and more bad than good things to say about others' relationships (other relationships negativity). Also, Hypotheses 2a and 2b received good support. Tendencies toward perceived superiority consistently were strongest under conditions of psychological threat and consistently were weakest given accuracy goals. Indeed, in the accuracy condition, individuals displayed negative inferiority, reporting more negative thoughts for their own than for others' relationships.

In the control condition—in which we assess "normal" inclinations toward superior beliefs—participants evidenced intermediate levels of perceived superiority. Participants in the control condition exhibited reliably more superior beliefs than not only those in the accuracy condition but also that which is attributable to evaluations of specific relationship attributes. Thus, it seems safe to conclude that the amount of perceived superiority observed under normal circumstances reflects a good deal of illusion, in that levels of perceived superiority exceed that which (a) is attributable to the objective quality of a relationship and (b) is evident when participants try to be accurate.

In addition, Study 1 revealed good support for Hypothesis 3a, in that commitment was positively associated with perceived superiority. Importantly, and consistent with Hypothesis 3b, the commitment-superiority association was more pronounced among participants who received psychologically threatening instructions than among those who received control or accuracy instructions. And in partial support of Hypothesis 3c, the commitmentsuperiority association tended to be weaker among participants

Commitment interaction was significant or marginal for total superiority, positive superiority, own relationship positivity, other relationships negativity, positive items describing one's own relationship, and positive items describing others' relationships, Fs(1, 222) = from 3.49 to 6.02, all ps < .06. The Threat-Versus-Control Contrast × Commitment interaction was nonsignificant for negative superiority, negative items describing one's own relationship, and negative items describing others' relationships, Fs(1, 222) = from 0.29 to 1.95, all *ns*. (For all effects, commitment–superiority associations in the accuracy and threat conditions differed significantly, all ps < .01.)

who received accuracy instructions than among those who received control instructions. These interaction effects do much to support our claims regarding the motivational properties of commitment. Also, and consistent with Hypothesis 3d, commitment consistently accounted for unique variance in perceived superiority beyond evaluations of specific relationship attributes (beyond an index of reality). In combination with support for Hypotheses 3b and 3c, these results are consistent with our characterization of the role of commitment in motivating perceived superiority and are compatible with the assumption that committed individuals need to perceive their relationships in a positive light; in low-commitment relationships this need is appreciably weaker. (Indeed, as relationships deteriorate, individuals may exhibit "perceived inferiority" out of a need to justify terminating their involvements.) Thus, Study 1 revealed relatively good support for hypotheses regarding the motivational properties of perceived superiority.

### Study 2

Study 2 used data from two research occasions of a longitudinal study of married partners. As in Study 1, Hypothesis 1 predicts that individuals will exhibit all four forms of perceived superiority. Relevant to the proposition that commitment plays a role in motivating illusion, Hypothesis 3a predicts that commitment will be positively associated with perceived superiority. In addition, given that in Study 2 we obtained data from both partners in marital relationships, we examined the relative levels of perceived superiority exhibited by both the more and less committed partner, reasoning that if commitment motivates perceived superiority, within a given relationship the more committed partner should exhibit greater perceived superiority (Hypothesis 3e).

Moreover, in Study 2 we obtained evidence to shed light on the extent to which the perceived superiority of one's own relationship serves a self-enhancing function in addition to (or in lieu of) a relationship-enhancing function. To the extent that committed individuals develop collective representations of the self, yielding some degree of self-other merger, it seems plausible that the need to regard the self as superior might yield tendencies to regard the relationship as superior. Thus, in addition to measuring commitment level (the presumed relationship-enhancing motivator of illusion), we also measured self-esteem, a frequently examined motivator of self-enhancing illusion (cf. Taylor & Brown, 1988). We reasoned that if self-esteem motivates the perceived superiority of one's own relationship, associations with commitment should decline considerably (or drop to nonsignificance) when we include self-esteem as a predictor of this criterion. On the basis of the assumption that commitment plays a central role in motivating perceived superiority, we anticipated that commitment would account for substantial unique variance beyond self-esteem (Hypothesis 3f).

Study 2 also examined the claim that perceived superiority serves a functional purpose, representing a habit of thought that supports couple well-being. Hypothesis 4 predicts that earlier perceived superiority will predict later couple well-being, operationally defined in terms of increases over time in dyadic adjustment (Hypothesis 4a) and persistence (Hypothesis 4b). In addition, we reasoned that if superior beliefs serve a functional purpose, representing a mechanism by which committed individuals sustain healthy relationships, then perceived superiority will partially mediate the association of commitment with dyadic adjustment (Hypothesis 4c). We predicted partial rather than complete mediation, because there are multiple mechanisms by which committed individuals sustain their involvements, including not only perceived superiority but also such maintenance acts as accommodation, sacrifice, and derogation of alternatives.

# Method

*Participants.* Participants were 63 married heterosexual couples who volunteered to take part in a 6-wave longitudinal study of marital relationships. (This study is part of a larger project concerned with quality of couple functioning in marital relationships [cf. Rusbult, Bissonnette, Arriaga, & Cox, 1998].)<sup>10</sup> A total of 123 couples participated in the project. Data for the present research are based on 63 couples who completed research activities at Time 2 of the study. Some analyses also make use of Time 5 data for these couples; Times 2 and 5 were separated by roughly 20 months. At Time 2, participants were 31.80 years old on average. All participants had completed high school (40% had bachelor's degrees, 32% had graduate degrees), their personal annual salary was around \$29,000, and most were Caucasian (4% African American, 3% Asian American, 91% Caucasian, 2% Latino). At Time 2, partners had been married for an average of 15.40 months; 11% had been married previously.

Procedure. The study is a lagged longitudinal design: Couples joined the study at different times, but over the course of the study they engaged in parallel activities at a parallel pace, completing research activities at approximately 6-month intervals. Participants completed the University of North Carolina (UNC) Marriage Questionnaire at each research occasion. At Times 1, 3, and 5, participants were sent questionnaires that were returned through the mail; at Times 2, 4, and 6, participants were sent questionnaires that were returned at laboratory sessions. Partners were asked to complete their questionnaires independently and not to speak to one another about their answers. Although some variables were measured at all six occasions, other variables differed over time. Given that perceived superiority was measured only at Time 2 and Time 5, the present study focuses mainly on Time 2 data; Time 5 data are used to examine change over time in model variables. At the end of each research occasion, couples were partially debriefed, reminded of upcoming activities, paid, and thanked for their assistance. Couples were paid \$40 for participation in Time 2 laboratory sessions and \$25 for completing Time 5 mailed questionnaires.

Time 2 and Time 5 questionnaires measured commitment level using versions of the Study 1 items that are suitable for marital relationships (Time 2 and Time 5  $\alpha$  = .82 and .83). Couple well-being was assessed using the Dyadic Adjustment Scale (Spanier, 1976). This 32-item instrument includes Likert, checklist, and dichotomous item formats. Given that

<sup>&</sup>lt;sup>10</sup> Data from this study were also used in (a) Arriaga and Rusbult (1998; Study 1), which examined the association of accommodation with partner perspective taking; (b) Bissonnette, Rusbult, and Kilpatrick (1997), which examined the associations among commitment, empathic accuracy, and accommodation; (c) Drigotas, Rusbult, and Verette (1999; Study 2), which examined the association of mutuality of commitment with couple wellbeing; (d) Drigotas, Rusbult, Wieselquist, and Whitton (1999; Study 4), which examined the association of partner affirmation with couple wellbeing; (e) Gaines et al. (1997; Study 4), which examined the association of attachment style with accommodation; (f) Rusbult, Bissonnette, Arriaga, and Cox (1998), which examined the association of accommodation with both commitment and couple well-being; (g) Van Lange et al. (1997; Study 6), which examined the association of commitment with willingness to sacrifice; and (h) Wieselquist, Rusbult, Foster, and Agnew (1999; Study 2), which examined the associations among commitment, accommodation, and trust.

Tal	ble	4

Mean Number of Thoughts as a Function of Item Target, Item Valence, Commitment Level, Relative Commitment Level, Dyadic Adjustment, and Persistence: Study 2

	Positive item valence		Negative item valence	
Condition	Own relationship	Other relationships	Own relationship	Other relationships
High vs. Low commitment				
High commitment	6.15	0.45	0.45	3.48
Low commitment	4.39	0.97	1.61	1.50
High vs. Low Relative commitment				
More committed partner	5.75	0.69	0.91	3.00
Less committed partner	4.78	0.86	1.39	2.12
High vs. Low dyadic adjustment				
High dyadic adjustment	6.75	0.07	0.28	3.76
Low dyadic adjustment	4.13	1.37	1.74	1.44
Later relationship status				
Relationship persisted	5.60	0.71	0.91	2.71
Relationship ended	3.17	0.83	2.00	1.25

*Note.* Table values reflect number of thoughts listed. The predicted means for commitment and dyadic adjustment were conditioned at values of one standard deviation above and below the mean of each variable (Aiken & West, 1991).

commitment is a key variable in our work, we dropped items that might be relevant to this construct to yield a commitment-purged measure of adjustment that tapped qualities of well-being such as intimacy, agreement, effective problem solving, and shared activities (Time 2 and Time 5  $\alpha$  = .89 and .91).11 Time 2 questionnaires measured self-esteem using a 17-item version of Hoyle's (1991) instrument (e.g., "On the whole, I am satisfied with myself"; for each item, 0 = do not agree at all, 8 = agree completely; Time 2  $\alpha$  = .93). We measured perceived superiority using the same general method as we used in Study 1. However, the thought-listing procedure was not timed-participants were given as much time as they wanted to list positive and negative features of relationships. As in Study 1, trained undergraduate research assistants later scored participants' lists, recording the number of positive and negative thoughts listed for own and other relationships. Study 2 measures were relatively stable over time: Significant test-retest correlations were observed for Time 2 and Time 5 measures of commitment and dyadic adjustment, for number of positive thoughts regarding own and other relationships, and for number of negative thoughts regarding one's own and others' relationships (respective  $r_{\rm S} =$ .79, .87, .51, .70, .59, and .45, all ps < .01).

## Results

We performed a series of hierarchical linear modeling analyses to test predictions associated with Hypotheses 1, 3, and 4 (Bryk & Raudenbush, 1992). Our design includes three levels of variable: (a) positive versus negative thoughts regarding own and others' relationships are nested in (b) male and female partners, who are nested in (c) couples. To develop hierarchical linear models with two levels of predictor variable, we calculated a series of withinparticipant scores to represent main effects and interactions involving item target and item valence.<sup>12</sup> We initially performed all analyses including gender as a lower level variable; if no main effects or interactions involving this variable were significant, gender was dropped from the model. Table 4 presents the mean number of thoughts listed as a function of item valence, item target, commitment level, relative commitment level, dyadic adjustment, and later relationship status (degrees of freedom vary across analyses because of missing data). Means for commitment and dyadic adjustment were conditioned at values of one standard deviation above and below the means for these variables (Aiken & West, 1991). Table 5 summarizes the results of key analyses.

Hypothesis 1: Existence and form of perceived superiority. Hypothesis 1 predicted that participants would exhibit perceived superiority. In the hierarchical linear model designed to test this prediction, we regressed perceived superiority scores onto one lower level variable (gender), with couple as the upper level unit. As expected, the Item Target  $\times$  Item Valence interaction was significant (see Table 5 under Is Perceived Superiority Evident?).

<sup>&</sup>lt;sup>11</sup> Our commitment-purged measure of adjustment dropped the following items from the Dyadic Adjustment Scale: "How often do you discuss or have you considered ending your relationship?"; "How often do you discuss or have you considered divorce, separation, or terminating your relationship?"; "Do you ever regret that you married?"; and the 6-option item, "Which of the following statements best describes how you feel about the future of your relationship? . . . I want desperately for my relationship to succeed and would go to almost any length to see that it does" (there are an additional five options for this item).

<sup>&</sup>lt;sup>12</sup> For simple analyses it would be possible to test our hypotheses in three-level models, including within-participant variables as lower level variables (item valence and target) and including within-couple variables as middle level variables (gender, commitment), with couple as the upper level unit. However, for analyses in which perceived superiority is represented as a predictor variable, three-level models become considerably more complex, in that they involve representing within-participant variables (item valence and target) as predictors (this becomes particularly complex in residualized lagged analyses). The approach we adopted is appropriate in that (a) our within-participant scores yield findings for two-level models that are conceptually equivalent to those obtained in parallel three-level models, (b) this approach yields a set of withinparticipant perceived superiority scores that are substantively meaningful, and (c) we also present findings for the "finest" level of analysis, reporting effects for the four within-participant items on which our within-participant scores are based (i.e., it will be evident which components of the perceived superiority phenomenon account for a given effect).

Table 5			
Analysis of Variance	Summary	Table:	Study 2

Effect	F	df	<i>p</i> <
Is Perceived Superiority Evident?			
Full model			
Item target main effect	54.02	1, 61	.0
Item valence main effect	69.89	1, 61	.0
Target $\times$ Valence interaction	73.44	1, 61	.0
Tests of simple effects			
Positive superiority	115.56	1, 61	.0
Negative superiority	17.80	1, 61	.0
Own relationship positivity	107.95	1, 61	.0
Other relationships negativity	26.01	1, 61	.0
Is Commitment Associated With Perceived S	uperiority?		
Full model			
Target $\times$ Valence $\times$ Commitment	25.40	1, 51	.0
Tests of simple effects			
Positive Superiority $\times$ Commitment	11.61	1, 51	.0
Negative Superiority × Commitment	26.30	1, 51	.0
Own Relationship Positivity × Commitment	20.56	1, 51	.0
Other Relationships Negativity × Commitment	19.80	1, 51	.0
Positive Items for Own Relationship × Commitment	8.29	1, 51	.0
Positive Items for Other Relationships $\times$ Commitment	4.65	1, 51	.0
Negative Items for Own Relationship × Commitment	18.13	1, 51	.0
Negative Items for Other Relationships × Commitment	16.61	1, 51	.0
Does the More Committed Partner Exhibit Greater Perceived Superiori Full model Target × Valence × Relative Commitment	ty Than the Les 7.86	s Committed	Partner
Tests of simple effects		·	
Positive Superiority $\times$ Relative Commitment	3.62	1, 46	.0
Negative Superiority $\times$ Relative Commitment	7.58	1, 46	.0
Own Relationship Positivity × Relative Commitment	6.40	1, 46	.0
Other Relationships Negativity × Relative Commitment	6.13	1, 46	.0
Positive Items for Own Relationship × Relative Commitment	3.28	1, 46	.0
Positive Items for Other Relationships × Relative Commitment	3.39	1, 46	.0
Negative Items for Own Relationship $\times$ Relative Commitment	0.61	1, 46	.4
Negative Items for Other Relationships × Relative Commitment	5.57	1, 46	.0
Is Perceived Superiority Associated With Dyadi	c Adjustment?		
Full model			-
Target $\times$ Valence interaction	45.14	1, 47	.0

Full model			
Target $\times$ Valence interaction	45.14	1, 47	.01
Tests of simple effects			
Positive Superiority $\times$ Adjustment	31.47	1, 47	.01
Negative Superiority $\times$ Adjustment	26.93	1, 47	.01
Own Relationship Positivity $\times$ Adjustment	35.76	1, 47	.01
Other Relationships Negativity $\times$ Adjustment	34.02	1, 47	.01
Positive Items for Own Relationship × Adjustment	22.44	1, 47	.01
Positive Items for Other Relationships $\times$ Adjustment	16.40	1, 47	.01
Negative Items for Own Relationship $\times$ Adjustment	15.74	1, 47	.01
Negative Items for Other Relationships $\times$ Adjustment	18.16	1, 47	.01

Is Perceived Superiority Associated With Later Relationship Status (Relationship Persisted vs. Ended)?

Full model			
Target $\times$ Valence interaction	4.97	1, 51	.03
Tests of simple effects			
Positive Superiority $\times$ Later Status	3.94	1, 51	.05
Negative Superiority $\times$ Later Status	4.34	1, 51	.04
Own Relationship Positivity × Later Status	7.97	1, 51	.01
Other Relationships Negativity $\times$ Later Status	1.71	1, 51	.20
Positive Items for Own Relationship × Later Status	5.16	1, 51	.03
Positive Items for Other Relationships × Later Status	0.02	1, 51	.88
Negative Items for Own Relationship $\times$ Later Status	4.20	1, 51	.05
Negative Items for Other Relationships $\times$ Later Status	2.44	1, 51	.12

Note. Table values are Fs from hierarchical linear modeling analyses including one or more lower level variables (sex, other predictor variables), with couple as the upper level unit.

Tests of simple effects revealed good support for all four forms of perceived superiority (see Table 5 under Tests of simple effects). Participants exhibited positive superiority, negative superiority, own relationship positivity, and other relationships negativity (see means in Table 4).

Three additional effects should be mentioned, although they are not directly hypothesis relevant. First, the item target main effect was significant—on average, participants reported more thoughts about their own relationships than about others' relationships (see Table 5). Second, the item valence main effect was significant—on average, participants reported a greater number of positive than negative thoughts. Third, the Gender  $\times$  Target  $\times$  Valence interaction was significant, F(1, 61) = 5.06, p < .03 women exhibited greater levels of perceived superiority than men. At the same time, tendencies toward perceived superiority were significant for both women and men.

Hypothesis 3a: Association of commitment with perceived superiority. Hypothesis 3a predicted that commitment would be positively associated with tendencies toward perceived superiority. In the model designed to test this prediction, we regressed perceived superiority scores onto one lower level variable (commitment; initial analyses revealed no significant effects involving gender), with couple as the upper level unit. As expected, the Target  $\times$  Valence  $\times$  Commitment interaction was significant (see Table 5 under Is Commitment Associated with Perceived Superiority?). Also, tests of simple effects revealed that the commitment effect was significant for all four forms of perceived superiority, as well as for all four types of item—for positive and negative items listed for one's own and others' relationships (see means in Table 4 under High versus Low commitment).

Does earlier commitment predict later perceived superiority or change over time in perceived superiority? We do not have sufficient statistical power to examine these associations (df for lagged analyses = 1, 16; df for residualized lagged analyses = 1, 14), because (a) we began measuring perceived superiority midway into the project (many early participants did not complete superiority measures at Times 2 or 5), (b) we added this component to Time 5 procedures before adding it to Time 2 procedures, and (c) some couples who completed superiority measures at Time 2 were separated by Time 5. We performed exploratory analyses in which we regressed later superiority scores onto (a) earlier commitment and gender and (b) earlier superiority scores, earlier commitment, and gender (with couple as the upper level unit). As would be anticipated given our low power, the results of these analyses were weak: The lagged analyses revealed that earlier commitment was negatively associated with negative thoughts regarding one's own relationship, and the residualized lagged analyses revealed no support for predictions.

Hypothesis 3e: Levels of perceived superiority among the more and less committed partner in a given relationship. Given that we obtained data from both partners in each marriage, we were able to examine tendencies toward superiority exhibited by both the more and the less committed partner within each relationship. Essentially, these analyses use the relationship as a control variable. If more and less committed partners exhibit differential tendencies toward superiority, such findings would support our claim that commitment motivates superior beliefs. Of course, partners do not experience precisely the same relationship—the many components of a relationship may differ in salience for the two partners, and whereas the male experiences the female as a partner, the female experiences the male as a partner. Nevertheless, to the degree that partners arguably experience a similar relationship, the more committed partner should exhibit greater perceived superiority.

To test Hypothesis 3e, we used measures of self-reported commitment to identify the more and less committed partner in each relationship. We regressed perceived superiority scores onto one lower level variable (relative commitment; initial analyses revealed no significant effects involving gender), with couple as the upper level unit. As expected, the Target  $\times$  Valence  $\times$  Relative Commitment interaction was significant (see Table 5 under Does the More Committed Partner Exhibit Greater Superiority Than the Less Committed Partner?). Also, tests of simple effects revealed that the relative commitment effect was significant or marginal for all four forms of perceived superiority, as well as for all types of item except negative items for own relationship (see means in Table 4 under High versus Low relative commitment).

Hypothesis 3f: Commitment level and self-esteem as predictors of perceived superiority. Is the perceived superiority of one's own relationship a relationship-enhancing phenomenon or is it a self-enhancing phenomenon? To the extent that self-esteem motivates the perceived superiority of one's own relationship, we should find that self-esteem predicts this criterion as well as or better than commitment level. To explore this line of reasoning, we performed concurrent analyses using Time 2 data. Table 6 presents (a) the simple association of commitment and self-esteem with each superiority measure (each predictor, in turn, was represented as a lower level variable; couple was the upper level unit) and (b) the associations of commitment and self-esteem with perceived superiority in two-factor analyses (commitment and self-esteem were lower level variables; couple was the upper level unit).

The simple association of self-esteem with perceived superiority was significant for total superiority as well as for all four forms of superiority and was significant or marginal for three of four types of item (see Table 6 under Simple associations). The simple association of commitment with superiority was .36 on average, whereas the simple association of self-esteem with superiority was .20 on average. (The simple association of commitment with self-esteem was .15, F[1, 57] = 4.91, p < .03.) The two-factor analyses revealed that when commitment and self-esteem were simultaneously regressed onto each superiority measure, both commitment level and self-esteem tended to account for significant variance in perceived superiority. Associations with commitment were descriptively stronger than were associations with selfesteem: In two-factor analyses, the commitment-superiority association was .32 on average, whereas the self-esteemsuperiority association was .16 on average. Thus, and consistent with our characterization of perceived superiority as a relationshipenhancing phenomenon, commitment consistently accounts for substantial unique variance beyond self-esteem. At the same time, it appears that self-esteem may also play a role-albeit a descriptively weaker role-in motivating this phenomenon.

Hypothesis 4a: Association of perceived superiority with dyadic adjustment. Hypothesis 4a predicted that if perceived superiority serves a functional purpose for relationships, then perceived superiority should be positively associated with dyadic adjustment. In the model designed to test this prediction, we regressed dyadic adjustment onto lower level perceived superiority scores (there

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#### Table 6

Predicting perceived superiority	Simple associations		Regression coefficients	
	Commitment level	Self- esteem	Commitment level	Self- esteem
Total perceived superiority	.44**	.22**	.40**	.17*
Positive superiority	.32**	.17*	.28**	.14†
Negative superiority	.45**	.23**	.41**	.17*
Own relationship positivity	.41**	.20*	.37**	.16*
Other relationships negativity	.40**	.21**	.35**	.16*
Positive items for own relationship	.28**	.10	.25**	.08
Positive items for other relationships	38**	27**	33**	23**
Negative items for own relationship	20*	21**	16	21**
Negative items for other relationships	.37**	.15†	.34**	.09

Associations of Commitment Level and Self-Esteem With Perceived Superiority-
Simple Associations and Simultaneous Regression Analyses: Study 2

Note. Simple associations = simple association of each predictor with each form of superiority; Regression coefficients = values from analyses in which each form of superiority was simultaneously regressed onto commitment and self-esteem. For analyses examining simple associations with commitment level, df = 1, 51; for analyses examining simple associations with self-esteem, df = 1, 52; for simultaneous regression analyses, df = 1, 48.

p < .10 (marginally significant). p < .05. p < .01.

were no significant effects involving gender), with couple as the upper level unit. The results of concurrent analyses are summarized in Table 5, but are more easily interpreted in Table 7, which displays regression coefficients representing the superiority–adjustment association for each form of superiority. As expected, the concurrent Target  $\times$  Valence  $\times$  Adjustment interaction was significant (see Table 7 under Concurrent adjustment; Total perceived superiority represents the Target  $\times$  Valence interaction). Also, tests of simple effects revealed that the concurrent superiority–adjustment association was significant for all four forms of perceived superiority, as well as for all four types of item—for positive and negative items listed for one's own and others' relationships.<sup>13</sup>

Does earlier superiority predict later dyadic adjustment? In the model examining simple lagged associations, we regressed later adjustment onto earlier superiority scores (there were no significant effects involving gender; couple was the upper level unit). As expected, the Target  $\times$  Valence  $\times$  Later Adjustment interaction was significant (see Table 7 under Later adjustment). Also, tests of simple effects revealed that the superiority-adjustment association was significant for all four forms of superiority as well as for all four types of item.

Does earlier superiority predict change over time in adjustment? In the model examining change in adjustment, we regressed later adjustment scores onto earlier adjustment and superiority scores (there were no significant effects involving gender; couple was the upper level unit). These residualized lagged analyses revealed a significant Target  $\times$  Valence  $\times$  Later Adjustment interaction (see Table 7 under Change in adjustment). Also, tests of simple effects revealed that the superiority-adjustment association was significant for negative superiority and own relationship positivity, as well as for negative items regarding one's own relationship. Although findings from the residualized lagged analyses were not as strong as one ideally would like to see, it is important to recognize that residualized lagged analyses are a "tough test": (a) These analyses rest on adequate change in the criterion and (b) Time 2 and Time 5 research occasions were separated by about 20 months. Thus, it is remarkable that in several instances—including, importantly, total superiority—earlier perceived superiority predicted increases over time in adjustment.

Hypothesis 4b: Association of perceived superiority with later relationship status. Hypothesis 4b predicted that earlier superiority would be greater among couples whose relationships persisted over time than among couples whose relationships later terminated. In the model designed to test this prediction, we regressed perceived superiority scores onto later relationship status (there were no significant effects involving gender; couple was the upper level unit). As expected, the Target  $\times$  Valence interaction was significant, as were the effects for positive superiority, negative superiority, own relationship positivity, and both positive and negative items for one's own relationship (see Table 5 under Is

<sup>&</sup>lt;sup>13</sup> It has been argued that the functional value of illusion may be limited when such tendencies are excessive and that there may be an optimal, mid-range region for illusion (cf. Baumeister, 1989; Colvin & Block, 1994). To explore the possibility of a nonlinear association of perceived superiority with couple well-being, we regressed dyadic adjustment onto lower level linear and quadratic terms for perceived superiority, with couple as the upper level unit. For total superiority, the linear term was significant, F(1, 46) = 30.93, p < .01, and the quadratic term was marginal, F(1, 46) = 3.63, p < .06. A scatterplot revealed that increases in perceived superiority yield linear increases in adjustment up to a point, at which time there is an asymptote. Thus, the association of perceived superiority with adjustment is largely linear-generally speaking, more is better. At the same time, it is possible that if tendencies toward perceived superiority were to exceed the upper limit observed in our sample-which included generally well-functioning marriages-higher levels of perceived superiority might begin to yield negative consequences for couple wellbeing.

#### PERCEIVED SUPERIORITY

Associations of Perceived Superiority With Dyadic Adjustment: Study 2

Concurrent adjustment	Later adjustment	Change in adjustment
.45**	.45**	.16*
.37**	.37**	.10
.39**	.32**	.14*
.42**	.45**	.19**
.31**	.33**	.09
.31**	.32**	.08
31**	39**	10
30**	42**	22**
.30**	.22**	.06
	adjustment .45** .37** .39** .42** .31** .31** 31** 30**	adjustment         adjustment           .45**         .45**           .37**         .37**           .39**         .32**           .42**         .45**           .31**         .33**           .31**         .32**          31**        39**          30**        42**

Note. Concurrent adjustment, later adjustment, and change in adjustment are standardized coefficients reflecting the association of each form of superiority with dyadic adjustment. Table values are from hierarchical linear modeling analyses including two or more lower level variables (sex, other predictor variables), with couple as the upper level unit. For concurrent analyses, df = 1, 47; for lagged analyses, df = 1, 34; for residualized lagged analyses, df = 1, 31. \* p < .05. \*\* p < .01.

Perceived Superiority Associated with Later Relationship Status?; see means in Table 4 under Later relationship status).<sup>14</sup>

Hypothesis 4c: Perceived superiority as a relationship maintenance mechanism. Does perceived superiority represent one of several mechanisms by which committed individuals sustain wellfunctioning relationships? If so, we should find that in mediation analyses (a) perceived superiority accounts for significant variance in adjustment beyond commitment and (b) the commitmentadjustment association is significantly weaker than in analyses examining the simple commitment-adjustment association (Baron & Kenny, 1986). To explore mediation, we performed concurrent analyses using Time 2 data. Table 8 presents (a) the simple association of commitment and each superiority measure with dyadic adjustment (these were reported in Table 5) and (b) the associations of commitment and superiority with adjustment in mediation analyses (commitment and perceived superiority measures were lower level variables; couple was the upper level unit).

As noted earlier, analyses examining simple associations with adjustment revealed that all nine superiority measures were significantly associated with adjustment. Also, commitment was significantly associated with adjustment (see Table 8 under Simple association). (There are nine forms of superiority, so we list simple associations for each form; there is just one measure of commitment, so we list just one association with this variable.) The mediation analyses revealed that perceived superiority consistently accounts for unique variance in adjustment beyond commitment (see Table 8, Perceived superiority, column under Mediation analyses). We anticipated that perceived superiority would partially mediate the association of commitment with dyadic adjustment. As anticipated, in mediation analyses, coefficients for commitment consistently were significant (see Table 8, Commitment level, column under Mediation analyses). Importantly, the commitmentadjustment associations in mediation analyses tended to be weaker than the simple commitment-adjustment associations---the simple commitment-adjustment association was .65, whereas in mediation analyses the commitment-adjustment association was .55 on average. We performed tests to evaluate the significance of mediation, and found that in all nine instances, mediation was significant or marginal (Kenny, Kashy, & Bolger, 1998; see Table 8, Significance of mediation column). Thus, and consistent with expectations, mediation of the commitment-adjustment association by perceived superiority was partial yet significant.

# Discussion

Study 2 revealed good support for Hypothesis 1: Participants exhibited reliable tendencies toward perceived superiority, regarding their own relationships as both better than and not as bad as others' relationships. Study 2 also revealed good support for Hypothesis 3a: Concurrent analyses revealed consistent evidence of positive associations between commitment and perceived superiority. Lagged and residualized lagged analyses revealed little evidence of commitment-superiority associations, presumably because these analyses were based on exceptionally small samples. Finally, Hypothesis 3e received good support: Within a given relationship, the more committed partner exhibited greater perceived superiority than the less committed partner.

In Study 2, we also sought to determine whether the perceived superiority of one's own relationship serves a relationshipenhancing function or a self-enhancing function. Toward this goal, we pitted self-esteem against commitment level as predictors of perceived superiority. Consistent with Hypothesis 3f, these analyses revealed that commitment is a powerful predictor of perceived superiority, accounting for substantial unique variance in this criterion beyond variance attributable to self-esteem. At the same time, self-esteem tended to account for some unique variance in perceived superiority, suggesting that in addition to serving a

<sup>&</sup>lt;sup>14</sup> This analysis is not the ideal means of examining associations with later relationship status, in that later status is a dichotomous variable and is represented in this model as predictor rather than as criterion. We replicated these analyses using logistic analysis, regressing later relationship status onto each couple's average superiority scores. These analyses replicated the results reported above, revealing significant effects for the Target × Valence interaction as well as for positive superiority, negative superiority, own relationship positivity, and both positive and negative items for one's own relationship,  $\chi^2(1, N = 54) =$  from 3.94 to 7.97, all ps < .05.

#### Table 8

Associations of Commitment Level and Perceived Superiority With Dyadic Adjustment— Simple Associations and Mediation Analyses: Study 2

Predicting dyadic adjustment	Simple association $(\beta)$	Mediation analyses			
		Perceived superiority $(\beta)$	Commitment level (β)	Significance of mediation (z)	
Commitment level	.65**				
Total perceived superiority	.45**	.31**	.50**	3.42**	
Positive superiority	.37**	.27**	.55**	2.65**	
Negative superiority	.39**	.23**	.53**	2.80**	
Own relationship positivity	.42**	.27**	.53**	3.00**	
Other relationships negativity	.31**	.29**	.52**	3.06**	
Positive items for own relationship	.31**	.20**	.57**	2.09*	
Positive items for other relationships	31**	27**	.60**	1.89†	
Negative items for own relationship	30**	18**	.59**	2.24*	
Negative items for other relationships	.30**	.19**	.56**	2.25*	

*Note.* Simple association = simple association of each predictor with dyadic adjustment; Mediation analyses = analyses in which dyadic adjustment was simultaneously regressed onto commitment along with each form of superiority. For analyses examining simple associations with perceived superiority, df = 1, 51; for the analysis examining the simple association with commitment, df = 1, 51; for mediation analyses, df = 1, 43. p < .10 (marginally significant). \* p < .05. \*\* p < .01.

relationship-enhancing function, this phenomenon may also serve a self-enhancing function.

Consistent with Hypothesis 4a, perceived superiority consistently was positively associated with dyadic adjustment, in both concurrent and lagged analyses. Also, analyses examining overall levels of superiority (total superiority) revealed that earlier perceived superiority predicted increases over time in adjustment. Study 2 also revealed good support for Hypothesis 4b, in that earlier perceived superiority generally was greater among couples whose relationships persisted than among couples whose relationships later terminated. Finally, mediation analyses revealed good support for Hypothesis 4c: (a) Perceived superiority consistently accounted for unique variance in adjustment beyond commitment, and (b) compared with the direct association of commitment with adjustment, this association was weaker (yet still significant) in mediation analyses. These findings are compatible with the assertion that perceived superiority represents one of several mechanisms by which committed individuals sustain well-functioning relationships.

#### General Discussion

In the introduction we advanced a functional analysis of perceived superiority, suggesting that this phenomenon is a relatively pervasive and adaptive pattern of thought. The emergence and persistence of perceived superiority is assumed to rest on its benefits to relationships. We argued that at least in part, perceived superiority reflects motivated processing, being driven by the need to perceive one's own relationship as superior. Moreover, we suggested that commitment plays a role in motivating perceived superiority. Below, we present evidence pertinent to these and other more specific assertions addressed in the present work.

# Existence and Motivational Properties of Perceived Superiority

Consistent with Hypothesis 1 and the results of previous work (e.g., Buunk & Van Yperen, 1991; Van Lange & Rusbult, 1995),

both studies revealed that individuals are inclined to regard their relationships as comparatively favored, exhibiting four forms of superior belief: positive superiority ("my relationship is better than others"), negative superiority ("my relationship is not as bad as others"), own relationship positivity ("my relationship is more good than bad"), and other relationships negativity ("other relationships are more bad than good"). Moreover, the tendency toward superior beliefs is evident across multiple indices of superiority. People not only hold a greater number of positive thoughts about their own than about others' relationships, but those thoughts also tend to be quantitatively more favorable than thoughts regarding others' relationships in a vacuum—the beliefs one holds about relationships are especially meaningful in relation to one's beliefs about others' relationships.

This research also revealed good support for the claim that perceived superiority involves motivated processing. Hypothesis 2a suggested that the experience of psychological threat to the relationship would enhance tendencies toward perceived superiority. Study 1 revealed that compared with individuals operating under other instructional sets, those who experienced psychologically threatening instructions-and were made to experience doubt regarding their relationships--exhibited exceptionally superior beliefs. It is noteworthy that the effects of threat on belief systems were evident not only in relation to other instructional sets but also above and beyond variance attributable to participants' evaluations of specific relationship attributes. These findings are noteworthy in that although many theorists have argued for the existence of a link between threat and illusion, the effects of psychological threat have been difficult to document in the literature regarding self-other illusion (cf. Taylor & Brown, 1988). Also, the present work is noteworthy in that very few studies in the relationships domain have examined the motivational properties of illusion by means of direct manipulation of motives.

Consistent with Hypothesis 2b, Study 1 revealed that compared with individuals operating under standard thought-listing conditions, those who were instructed to be accurate exhibited reduced perceived superiority. Indeed, in the accuracy condition, we observed negative inferiority-more negative thoughts about one's own than others' relationships. This result is consistent with an availability interpretation, suggesting that whereas we normally do not take note of negative features of our relationships, negative information may be highly available when we are led to "stop and take a good, hard look." (The need for negative comparison information may account for the appeal of media accounts of troubled relationships.) Findings regarding the effects of accuracy instructions are also congruent with the assumption that beliefs regarding one's own and others' relationships can to some extent reflect reality. Such findings have not previously been documented in the realm of close relationships, although in research regarding the self, illusion has been shown to be constrained by the specificity and objectivity of the dimensions on which self-relevant beliefs are held (Allison et al., 1989; Dunning et al., 1989).<sup>15</sup>

The thoughts individuals listed in the control condition (and in Study 2) presumably approximate everyday belief systems regarding one's own and others' relationships. Individuals in the Study 1 control condition not only exhibited reliably more superior beliefs than those in the accuracy condition, but they also exhibited more superior beliefs than that which is evident on the basis of evaluations of specific relationship attributes. The relationship attributes questionnaire assessed a wide range of qualities, including central properties of relationships such as sexual gratification, partner physical attractiveness and sense of humor, and similarity of attitudes. Indeed, scores on this instrument exhibited reliable associations with our perceived superiority measure, indicating that individuals' thoughts to some degree do reflect the reality of their involvements. Thus, although perceived superiority is a blend of reality and illusion, everyday belief systems appear to be substantially colored by illusion.

We have argued that humans do not experience their relationships in a vacuum, suggesting that beliefs regarding relationships are socially defined. Does the pattern of results revealed in the present work support the claim that individuals are motivated to perceive their relationships as "superior"? Does the illusory component of perception reside in (a) beliefs about one's own relationship, (b) beliefs about others' relationships, (c) beliefs about one's own relationship relative to beliefs about others' relationships, or (d) all three? Given that it is hard to conceive of an objective standard for use as a baseline from which to evaluate beliefs about one's own and others' relationships, it is difficult to provide an unequivocal empirical answer to this question. However, to the extent that this question can be addressed with some degree of confidence, we think the claim that beliefs regarding one's own relationships are illusory is supported by the fact that our accuracy and threat manipulations influenced positive and negative thoughts about one's own relationships. We think the claim that beliefs regarding others' relationships are illusory is supported by the fact that these manipulations influenced positive and negative thoughts about others' relationships. And we think the claim that superior beliefs are illusory is supported by the fact that these manipulations influenced the relative prevalence of positive and negative beliefs regarding one's own and others' relationships (i.e., three-factor interactions were observed; e.g., the disparity between all pairs of thoughts was greater given threat). Granted, our thought-listing technique is inherently comparative (i.e., participants indicated whether a feature was more typical of

their own or others' relationships). However, the magnitude and consistency of the effects observed for each of the four forms of superiority suggests that individuals' beliefs reflect not only "own relationship illusion" and "other relationships illusion," but also "superiority-based illusion."

It is noteworthy that relatively simple manipulations of psychological threat and accuracy goals yielded such strong effects on perceived superiority, suggesting that the experience of threat and the desire to be accurate may be powerful motivational determinants of this phenomenon. Beyond demonstrating that superior beliefs to some degree reflect motivated processes, it is interesting to consider the broader implications of these findings. Relevant to psychological threat, we speculate that in everyday life individuals may experience threat because of a variety of circumstances. For example, partners may convey doubts regarding the future of a relationship, individuals may feel tempted by the presence of an attractive alternative, partners may witness unexpected breakups in their network of friends, and the media may convey alarming information regarding troubled relationships. Our findings suggest that such forms of threat induce enhanced attention to the positive features of one's own relationship, which may be an important coping mechanism through which individuals develop positive beliefs regarding their relationships. In turn, such beliefs may play a role in sustaining or enhancing couple well-being. As noted earlier, superior beliefs may serve the added benefit of reinforcing positive patterns of behavior. It is interesting-and paradoxicalthat threats to one's conviction may ultimately serve a positive, relationship-enhancing function.

Relevant to accuracy goals, we speculate that although the need for accuracy may not be particularly strong in everyday life, there are some situations in which accuracy is emphasized (e.g., in marital counseling). Moreover, individuals may differ in their tendencies to hold accurate versus illusory beliefs (e.g., superior beliefs may be less evident among individuals suffering from depressive tendencies; Sweeney, Anderson, & Bailey, 1986). Our findings suggest that accuracy goals may induce enhanced attention to the negative features of one's own relationship, which in turn may impede relationship growth and vitality. Indeed, it is possible that counselors who place excessive emphasis on accuracy (e.g., "taking an honest look at one's relationship") may yield unintended negative consequences for couples.

## Commitment and Perceived Superiority

Consistent with previous research regarding relationship maintenance processes (cf. Rusbult & Buunk, 1993), we suggested that

<sup>&</sup>lt;sup>15</sup> Does the fact that participants in the accuracy condition were able to "turn off" the impulse toward positive superiority mean that people are aware of their illusions or that this inclination is consciously controlled? The answer is no. That the injunction to be accurate yielded reduced superiority is not to say that participants actively recognized their illusory beliefs, nor does this imply that they "told themselves" to deactivate their impulses toward superior beliefs—the fact that a manipulation produces a given effect does not necessarily imply that participants consciously brought about that effect. Our findings simply suggest that when individuals actively work toward the goal of accuracy, they are somewhat less inclined to regard others' relationships more negatively than they regard their own.

commitment is a central variable in ongoing relationships, arguing that commitment would be positively associated with inclinations toward perceived superiority. In support of Hypothesis 3a, both studies revealed consistent evidence of a link between commitment level and tendencies to regard one's own relationship as superior to others' relationships.

As noted earlier, there are two components of the commitmentsuperiority association. Presumably, at least part of the association of commitment with perceived superiority rests on the fact that objectively good relationships inspire strong commitment, along with realistic tendencies to regard one's own relationship as superior (and others' relationships as inferior). When an individual judges that his or her relationship is better than others' relationships—particularly with respect to the dimensions that he or she regards as important—there is a realistic basis for both commitment and perceived superiority. At the same time, we have argued that a portion of the observed associations with commitment reflect illusion, or the need to regard one's own relationship as superior to others' relationships. We adopted several strategies to "separate illusion from reality" and marshal support for this claim.

First, we reasoned that if the motivational properties of commitment are particularly active when individuals experience doubt or anxiety regarding their relationships, we should find that the association of commitment with perceived superiority is enhanced under conditions of threat. In support of Hypothesis 3b, in Study 1 the association of commitment with superior beliefs was considerably stronger among individuals who received psychologically threatening instructions than among those who received control or accuracy instructions. Second, we reasoned that the injunction to "be accurate" to some degree would deactivate the mechanisms supporting illusion, thereby weakening the commitmentsuperiority association. Consistent with Hypothesis 3c, in Study 1 the association of commitment with perceived superiority tended to be weaker among individuals who received accuracy instructions than among those who received control or threat instructions. Third, we reasoned that if commitment motivates departures from strictly realistic perception, we should find that commitment accounts for unique variance in perceived superiority beyond evaluations of specific relationship attributes. Consistent with Hypothesis 3d, Study 1 revealed that commitment accounts for substantial unique variance in perceived superiority beyond evaluations of specific attributes of one's own relationship.

Adopting a fourth approach to separate illusion from reality, in Study 2 we used a naturally occurring control group by examining differences between partners who experienced (more or less) the same marriage, yet experienced differing motivation for illusion (i.e., greater or lesser commitment). Of course, the components of a marrige may differ in salience or importance for the partners, and whereas Partner A experiences B's actions and attributes, Partner B experiences A's actions and attributes. But to the extent that partners in a marriage arguably experience similar relationships, this analysis becomes informative. Consistent with Hypothesis 3e, within a marriage the more committed partner exhibited greater perceived superiority than the less committed partner. This tendency was evident for all four forms of superiority, including the form that is least directly linked to the particulars of one's own involvement-other relationships negativity. The fact that relative commitment predicts the tendency to perceive more bad than good in others' relationships would seem to support the proposition that at least in part, perceived superiority rests on the motivational properties of commitment (i.e., the need to regard one's own relationship as superior).

Thus far, we have reviewed evidence in support of the assertion that commitment motivates perceived superiority, suggesting that the inclination to regard one's own relationship as superior serves a relationship-enhancing function. But is it possible that in studying the perceived superiority of one's own relationship, we have simply provided yet another demonstration of the "motivated self" (cf. Taylor & Brown, 1988)? It seems plausible that desire to enhance the self might contribute to the inclination to regard one's own relationship as superior (e.g., involvement in a healthy relationship may contribute to self-esteem). However, in other research we have found that commitment exhibits weak or null associations with such "self" variables as self-esteem, affiliation and independence needs, and attachment style (Rusbult, Martz, & Agnew, 1998; Wieselquist, Rusbult, Foster, & Agnew, 1999). Moreover, in previous work we have found clear distinctions between simple self-versus-other differentiation and the type of own-relationship-versus-other-relationships differentiation observed in the present work: For example, whereas self-esteem predicts favorable differentiation between oneself and other persons, commitment more powerfully predicts favorable differentiation between one's own relationship and others' relationships (Martz et al., 1998).

To determine whether the perceived superiority of one's own relationship serves a self-enhancing or relationship-enhancing function in the present work, in Study 2 we pitted self-esteem against commitment as predictors of perceived superiority. Consistent with Hypothesis 3f, these analyses revealed that commitment level is a powerful predictor of perceived superiority, accounting for substantial unique variance in this criterion beyond any variance attributable to self-esteem. At the same time, selfesteem tended to account for some unique variance in perceived superiority, suggesting that in addition to serving a *relationship*enhancing function, this phenomenon may also, to some degree, serve a *self*-enhancing function. The contributions of relationshipspecific variables and self-variables to explaining the perceived superiority of one's own relationship would appear to be a fruitful avenue for future research.

On the basis of the evidence we have marshaled, it seems relatively safe to conclude that (a) superior beliefs rest in part on motivated processing and (b) commitment predicts tendencies toward perceived superiority. However, it does not necessarily follow that (c) commitment is the sole motivator of superior beliefs. (In fact, we have identified self-esteem as an additional plausible motivator of this phenomenon.) Our results for commitment are nonexperimental, so there may be alternative explanations of the commitment-superiority association. For example, our findings might be explained by variables that are known to be associated with commitment, such as sizeable investment or social support for an involvement (Felmlee et al., 1990; Rusbult, 1983). Indeed, even if we assume that commitment is the central force underlying perceived superiority, it remains for future research to identify the precise mechanism(s) by which commitment yields such an association, determining whether such effects result from dependence, long-term orientation, self-partner merging, or communal orientation.

# Alternative Interpretations

Are there alternative interpretations of these findings? In the following paragraphs we consider the plausibility of several alternative accounts of the effects of threat, accuracy instructions, and commitment on tendencies toward perceived superiority.

Impression management and socially desirable responding. Is it possible that findings for the threat condition emerged because participants sought to "set the experimenter straight" by demonstrating that their relationships differed from other students' bad relationships? Is it possible that findings for the accuracy condition emerged because the injunction to "be as accurate as possible" inhibited normal impulses toward impression management? Although desire to manage one's public impression might cause individuals to list many positive thoughts about their own relationships, it seems less likely that impression management would cause them to list many negative thoughts about others' relationships. Also, it seems unlikely that tendencies toward perceived superiority are entirely attributable to socially desirable responding, in that such an explanation does not account for the fact that the commitment-superiority association varied systematically across Study 1 instructional sets. Although we cannot wholly rule out the possibility of socially desirable responding in the present work, in previous studies (Martz et al., 1998) we have found that the inclination to favorably differentiate one's own relationship from others' relationships is not substantially related to measures of self-deception or impression management (Paulhus, 1984).

Differential availability of information. Is it possible that individuals report a greater number of positive thoughts about their own than others' relationships because they possess more information about their own relationships? Assuming that individuals possess more information about their own relationships than about others' relationships—and assuming that in everyday life, people may present a somewhat more positive picture of their own relationships than objectively is warranted—it would seem logical that we would possess a greater amount of both positive and negative information regarding our own relationships. But although a pattern of negative inferiority was evident in the accuracy condition, this pattern did not emerge in the threat or control conditions: Individuals typically did not report more negative thoughts about their own relationships than about others' relationships.

In a related vein, is it possible that the commitment-superiority association is stronger given threat because (a) individuals with low commitment already assume that most relationships are not particularly strong (perhaps due to false consensus), and accordingly were less influenced by the information the threat manipulation provides, or because (b) when threatened, it is easier for committed individuals to defend their relationships because they possess more positive information about their relationships? Given that commitment represents more than simple positive evaluation-given that commitment encompasses the effects of such variables as investment size and normative support (Bui et al., 1996; Felmlee et al., 1990)-it seems unlikely that interactions with commitment are accounted for solely by the ability to bring to mind positive features of one's own relationship. Also, the commitment-superiority association was evident beyond variance attributable to ratings of specific relationship attributes. Thus, to explain why commitment and threat yield enhanced tendencies to report negative qualities in others' relationships, one must turn to

motivational explanations resting on such processes as defensiveness or suppression.

Priming and shifting standards. Is it possible that the threat manipulation primed negative thoughts about relationships, thereby causing participants to list a greater number of negative thoughts regarding others' relationships? If this were so, priming should also have increased the availability of negative thoughts regarding one's own relationship. Instead, participants in the threat condition listed fewer negative thoughts regarding their own relationships. Is it possible that results for the threat condition emerged because the threatening assertion that "college students' relationships ... exhibit lower levels of adjustment" lowered individuals' comparison standards regarding others' relationships, thereby enhancing the salience of positive qualities in their own relationships? We think this is unlikely, in that the threat manipulation not only influenced the number of positive thoughts about one's own relationship and negative thoughts about others' relationships, but it also interacted with commitment level. It is difficult to explain why priming or shifting standards would interact with both threat and commitment level to yield the observed pattern of findings.

Evenhandedness. Is it possible that participants in the accuracy condition interpreted the instruction to be accurate as a request to tenor their claims-to be more realistic and thus less positive? If so, could this have decreased the variability in participants' responses, thereby weakening the commitment-superiority association? First, we should note that restricted range does not appear to have been a problem in the accuracy condition (SDs for the four types of thought ranged from 1.61 to 2.49 in the accuracy condition, 1.13 to 3.22 in the control condition, and 1.34 to 3.71 in the threat condition). More to the point, evenhandedness in many respects is another way of describing the intent of the accuracy manipulation. Evidence from the accuracy condition was intended to illustrate that the illusory component of perceived superiority could be deactivated under some circumstances and that when deactivated, the normal motivational properties of commitment no longer strongly color tendencies toward perceived superiority. As such, findings from the accuracy condition provide a benchmark which should help one to understand the motivational properties evident under normal conditions and under conditions of threat.

Thus, although several alternative interpretations might partially account for our results, these interpretations do not parsimoniously explain (a) differences in the effects of threat, control, and accuracy instructions on all four types of thought regarding one's own and others' relationships, (b) interactions of instructional set with commitment, and (c) the fact that these findings were evident beyond evaluations of specific relationship attributes. At the same time, several processes outlined above might contribute to the inclination to regard one's own relationship more favorably than others' relationships. Future research should use alternative experimental manipulations to examine the motivational properties of perceived superiority, exploring the contributions of processes such as priming, shifting standards, and differential availability of information to inclinations toward perceived superiority.

# Functional Value of Perceived Superiority

Study 2 addressed a final hypothesis, centering on the claim that perceived superiority is adaptive—that this pattern of thinking serves a functional purpose, toward the related goals of relationship maintenance and relationship growth. Consistent with Hypothesis 4a, we found that perceived superiority was positively associated with dyadic adjustment. This prediction received support not only in analyses examining concurrent associations of superiority with adjustment, but also in analyses examining change over time in adjustment. Consistent with Hypothesis 4b, we found that earlier tendencies toward perceived superiority were greater among couples whose relationships persisted over time than among those whose relationships later terminated. Indeed, among couples whose relationships later terminated, individuals exhibited other relationships positivity, perceiving that others' relationships also possessed more positive than negative qualities.

These findings are especially interesting in light of the fact that the reverse could as plausibly have been observed. For example, it would not be unreasonable to expect that the relationships of individuals with superior beliefs might exhibit poor functioning, in that partners might feel less motivated to exert effort toward maintaining their relationships (e.g., unrealistic optimism might cause people to ignore unhealthy habits; cf. Taylor & Brown, 1988; Weinstein, 1980). The present findings are also noteworthy in that these results provide rare evidence of the longer-term functional value of illusion. Existing evidence regarding the functional value of positive illusion (a) is largely limited to that obtained in the context of short-term laboratory experiments (for exceptions, see Murray et al., 1996a, 1996b) and (b) focuses primarily on individuals rather than relationships (cf. Taylor & Brown, 1988). Thus, our work can be seen to answer Taylor's (1983) call for research in "field situations of high involvement" (p. 1167).

Of course, our results regarding the benefits of perceived superiority are correlational. Thus, it would be inappropriate to conclude, for example, that perceived superiority causes enhanced persistence. Although in Study 2, earlier beliefs clearly preceded later breakup (i.e., it might appear that low levels of superiority cause breakup), it is equally plausible that people whose relationships were on the road to dissolution felt inclined to describe their relationships in a somewhat unsavory manner (i.e., being on the road to breakup yields reduced superiority). In future research it would be fruitful to obtain further evidence of the interpersonal benefits of superior beliefs by experimentally manipulating perceived superiority in nonromantic involvements, determining whether interactions accompanied by superior beliefs are more congenial, trusting, or intimate.

In Study 2, we performed mediation analyses, examining the plausibility of the assertion that perceived superiority partially mediates the association of commitment with couple well-being. Consistent with expectations, perceived superiority consistently accounted for significant variance in adjustment beyond that which is attributable to commitment. Also, commitment accounted for significantly reduced variance in adjustment once variance attributable to perceived superiority was taken into consideration. At the same time, commitment accounted for unique variance in adjustment beyond superiority, either because commitment affects adjustment by means of mechanisms other than perceived superiority (e.g., accommodation, willingness to sacrifice, derogation of alternatives) or because commitment exerts direct effects on adjustment. Thus, and consistent with expectations, mediation of the commitment-adjustment association by perceived superiority was significant yet partial. These results are consistent with Hypothesis

4c and are compatible with the assumption that perceived superiority represents one of several specific mechanisms by which committed individuals sustain well-functioning, long-term involvements.

## Additional Findings

The tendency toward perceived superiority is reliable among both men and women. However, in both studies women exhibited a greater number of relationship-relevant thoughts than men, and women exhibited stronger tendencies toward perceived superiority. These findings are consistent with other work regarding gender differences in North American samples, which tends to characterize women as social-emotional experts (cf. Huston & Ashmore, 1986; Peplau & Gordon, 1985): Women may pay more attention to relationship-relevant information, and may thereby develop a greater number of relationship-relevant cognitions—cognitions that center on both their own and others' relationships. Women may also more persistently make use of relationship-relevant information in such a manner as to sustain conviction in their relationships.

Two additional findings should also be noted. First, both studies revealed evidence of an item valence main effect: Participants exhibited more positive than negative thoughts about relationships. This finding is consistent with the assumption that individuals hold relatively positive global beliefs about relationships (cf. Fiske, 1980; Skowronski & Carlston, 1989). Second, both studies revealed evidence of an item target main effect: On average, participants had more to say about their own relationships than about others' relationships. This finding is consistent with the assumption that (a) the breadth of available information may be greater for one's own relationship than for others' relationships (e.g., we have direct experience with our own relationships and the internal events accompanying the involvement, whereas we have no access to the private issues or internal thoughts that accompany others' relationships) and (b) we may hold relatively more differentiated views about our own than about others' relationships (e.g., another relationship may simply be regarded as conflicted, whereas one's own relationship may be regarded as simultaneously conflicted and loving; cf. Sande, Goethals, & Radloff, 1988).

# Limitations and Directions for Future Research

Before closing, we should address several potential limitations of our work. First, we should comment on our technique for assessing perceived superiority. Is it possible that when people are asked to categorize positive and negative thoughts as characteristic of either their own or others' relationships, their only option is to exhibit superior beliefs? There is nothing in this technique that demands superior beliefs-participants are free to list as many thoughts as come to mind about their own and others' relationships, both positive and negative. Also, previous studies using modified measurement techniques have revealed findings paralleling those obtained using the present technique. For example, parallel evidence is obtained when participants categorize thoughts as more characteristic of their own relationships, equally characteristic of their own and others' relationships, or more characteristic of others' relationships (Van Lange & Rusbult, 1995); parallel evidence is obtained when participants simply write open-ended descriptions of relationships (Agnew et al., 1998). Moreover,

research on self-other judgments reveals that quite subtle thoughtlisting instructions yield self-other superiority of a magnitude approximating that observed using the present technique (Messick et al., 1985). Thus, we believe that our measurement method is a good one—one with the added benefit of being a relatively unobtrusive, participant-driven means of examining natural belief systems, including beliefs about the self, partner, and dyad.

Second, we should ask whether it is appropriate to describe favorable differentiation between one's own and others' relationships as illusion. We have suggested that at least in part, this pattern of thought reflects the reality of ongoing relationships. When people judge that their own relationships are better than others' relationships with respect to the dimensions they regard as important, there is a realistic basis for favorable differentiation between one's own and others' relationships. At the same time, we used a variety of empirical strategies to demonstrate that in part, this pattern of thought reflects motivational forces. We believe that the full complement of evidence is most parsimoniously explained by a model that assumes some motivational basis for the phenomenon of perceived superiority.

Third, we have reported correlational findings regarding the associations among commitment, perceived superiority, and couple well-being. Thus, we have no direct evidence regarding the causal links asserted in our model. We suspect that in the final analysis, the associations among model variables should be interpreted in the context of a model of cyclical growth (cf. Van Lange et al., 1997; Wieselquist et al., 1999)—a model wherein variables represented as "later effects" feed back on and influence "earlier causes." For example, it seems obvious on the face of it that perceived superiority (a "later effect") is likely to influence feelings of satisfaction with a relationship, which in turn should strengthen commitment (see Footnote 5). Future research should explore plausible links in this sort of cyclical model, and should seek to explore the fascinating intricacies (rather than emphasizing the liabilities) of bidirectional cause–effect associations.

# Conclusions

The present research began with the assumption that perceptions of relationship quality are socially defined and advanced the argument that individuals perceive their own relationships as both better than and not as bad as others' relationships. We developed a conceptual model of this phenomenon, suggesting that perceived superiority (a) results from motivational forces arising from threats to conviction regarding the desirability of a relationship, (b) is motivated by commitment, or by desire to sustain a long-term, well-functioning involvement, and (c) yields relationshipenhancing benefits in the form of persistence and enhanced adjustment. The results of two studies were compatible with this analysis (although alternative perspectives cannot be entirely discounted), suggesting that it may be fruitful to conceptualize perceived superiority as one of several mechanisms by which individuals maintain stable and vital ongoing close relationships.

#### References

Agnew, C. R., Van Lange, P. A. M., Rusbult, C. E., & Langston, C. A. (1998). Cognitive interdependence: Commitment and the mental representation of close relationships. *Journal of Personality and Social Psychology*, 74, 939–954.

- Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage.
- Alicke, M. E. (1985). Global self-evaluation as determined by the desirability and controllability of trait adjectives. *Journal of Personality and Social Psychology*, 49, 1621–1630.
- Allison, S. T., Messick, D. M., & Goethals, G. R. (1989). On being better but not smarter than others: The Muhammad Ali effect. Social Cognition, 7, 275-296.
- Aron, A., & Aron, E. N. (1997). Self-expansion motivation and including other in the self. In S. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (2nd ed., pp. 251–270). Chichester, England: Wiley.
- Arriaga, X. B., & Rusbult, C. E. (1998). Standing in my partner's shoes: Partner perspective-taking and reactions to accommodative dilemmas. *Personality & Social Psychology Bulletin, 9*, 927–948.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychol*ogy, 51, 1173-1182.
- Baumeister, R. F. (1989). The optimal margin of illusion. Journal of Social and Clinical Psychology, 8, 176-189.
- Bissonnette, V. L., Rusbult, C. E., & Kilpatrick, S. D. (1997). Empathic accuracy and marital conflict resolution. In W. Ickes (Ed.), *Empathic* accuracy (pp. 251–281). New York: Guilford Press.
- Brickman, P. (Ed.). (1987). Commitment, conflict, and caring. Englewood Cliffs, NJ: Prentice Hall.
- Bryk, A. S., & Raudenbush, S. W. (1992). Hierarchical linear models: Applications and data analysis methods. Newbury Park, CA: Sage.
- Bui, K. T., Peplau, L. A., & Hill, C. T. (1996). Testing the Rusbult model of relationship commitment and stability in a 15-year study of heterosexual couples. *Personality & Social Psychology Bulletin*, 22, 1244– 1257.
- Buunk, B. P., & Van Yperen, N. W. (1991). Referential comparisons, relational comparisons, and exchange orientation: Their relation to marital satisfaction. *Personality & Social Psychology Bulletin*, 17, 709-717.
- Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychol*ogy, 37, 12-24.
- Colvin, C. R., & Block, J. (1994). Do positive illusions foster mental health? An examination of the Taylor and Brown formulation. *Psychological Bulletin*, 116, 3–20.
- Crowne, D., & Marlowe, D. (1964). The approval motive. New York: Wiley.
- Drigotas, S. M., Rusbult, C. E., & Verette, J. (1999). Level of commitment, mutuality of commitment, and couple well-being. *Personal Relationships*, 6, 389-409.
- Drigotas, S. M., Rusbult, C. E., Wieselquist, J., & Whitton, S. (1999). Close partner as sculptor of the ideal self: Behavioral affirmation and the Michelangelo phenomenon. *Journal of Personality and Social Psychol*ogy, 77, 293–323.
- Dunning, D., & McElwee, R. (1995). Idiosyncratic trait definitions: Implications for self-description and social judgment. *Journal of Personality and Social Psychology*, 68, 936–946.
- Dunning, D., Meyerowitz, J. A., & Holzberg, A. D. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychol*ogy, 57, 1082–1090.
- Felmlee, D., Sprecher, S., & Bassin, E. (1990). The dissolution of intimate relationships: A hazard model. Social Psychology Quarterly, 53, 13-30.
- Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, 38, 889–906.

- Fiske, S. T., & Taylor, S. E. (1991). Social cognition (2nd ed.). New York: McGraw-Hill.
- Gaines, S. O., Jr., Reis, H. T., Summers, S., Rusbult, C. E., Cox, C. L., Wexler, M. O., Marelich, W. D., & Kurland, G. J. (1997). Impact of attachment style on reactions to accommodative dilemmas in close relationships. *Personal Relationships*, 4, 93-113.
- Hoyle, R. H. (1991). Evaluating measurement models in clinical research: Covariance structure analysis of latent variable models of self-conception. Journal of Consulting and Clinical Psychology, 59, 67-76.
- Huston, T. L., & Ashmore, R. D. (1986). Women and men in personal relationships. In R. D. Ashmore & F. K. Del Boca (Eds.), *The social* psychology of female-male relations. Orlando, FL: Academic Press.
- Johnson, D. J., & Rusbult, C. E. (1989). Resisting temptation: Devaluation of alternative partners as a means of maintaining commitment in close relationships. *Journal of Personality and Social Psychology*, 57, 967– 980.
- Kanouse, D. E., & Hanson, L. R., Jr. (1972). Negativity in evaluations. In
  E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B.
  Weiner (Eds.), Attribution: Perceiving the causes of behavior (pp. 47-62). Morristown, NJ: General Learning Press.
- Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 1, pp. 233-265). Boston: McGraw-Hill.
- Kruglanski, A. W. (1990). Lay epistemic theory in social-cognitive psychology. *Psychological Inquiry*, 1, 181–197.
- Kunda, Z. (1990). The case for motivated reasoning. Psychological Bulletin, 108, 480-498.
- Martz, J. M., Verette, J., Arriaga, X. B., Slovik, L. F., Cox, C. L., & Rusbult, C. E. (1998). Positive illusion in close relationships. *Personal Relationships*, 5, 159–181.
- Messick, D. M., Bloom, S., Boldizar, J. P., & Samuelson, C. D. (1985). Why we are fairer than others. *Journal of Experimental Social Psychology*, 21, 480-500.
- Miller, D. T., & Turnbull, W. (1986). Expectancies and interpersonal processes. Annual Review of Psychology, 37, 233-256.
- Miller, R. S. (1997). Inattentive and contented: Relationship commitment and attention to alternatives. *Journal of Personality and Social Psychol*ogy, 73, 758-766.
- Murray, S. L., & Holmes, J. G. (1993). Seeing virtues in faults: Negativity and the transformation of interpersonal narratives in close relationships. *Journal of Personality and Social Psychology*, 65, 707-722.
- Murray, S. L., & Holmes, J. G. (1997). A leap of faith? Positive illusions in romantic relationships. *Personality & Social Psychology Bulletin*, 23, 586-604.
- Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996a). The benefits of positive illusions: Idealization and the construction of satisfaction in close relationships. *Journal of Personality and Social Psychology*, 70, 79-98.
- Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996b). The self-fulfilling nature of positive illusions in romantic relationships: Love is not blind, but prescient. *Journal of Personality and Social Psychology*, 71, 1155– 1180.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. Journal of Personality and Social Psychology, 46, 598-609.
- Peplau, L. A., & Gordon, S. L. (1985). Women and men in love: Gender differences in close heterosexual relationships. In V. E. O'Leary, R. K. Unger, & B. S. Wallston (Eds.), Women, gender, and social psychology (pp. 257-291). Hillsdale, NJ: Erlbaum.
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in

heterosexual involvements. Journal of Personality and Social Psychology, 45, 101-117.

- Rusbult, C. E., Bissonnette, V. L., Arriaga, X. B., & Cox, C. L. (1998). Accommodation processes during the early years of marriage. In T. N. Bradbury (Ed.), *The developmental course of marital dysfunction* (pp. 74-113). New York: Cambridge University Press.
- Rusbult, C. E., & Buunk, B. P. (1993). Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Per*sonal Relationships, 10, 175–204.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357–391.
- Rusbult, C. E., & Van Lange, P. A. M. (1996). Interdependence processes. In E. T. Higgins & A. Kruglanski (Eds.), Social psychology: Handbook of basic principles (pp. 564–596). New York: Guilford Press.
- Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, 60, 53-78.
- Sande, G. N., Goethals, G. R., & Radloff, C. E. (1988). Perceiving one's own traits and others': The multifaceted self. *Journal of Personality and Social Psychology*, 54, 13–20.
- Schwarz, N. (1999). Self-reports: How the questions shape the answers. American Psychologist, 54, 93-105.
- Simpson, J. A., Ickes, W., & Blackstone, T. (1995). When the head protects the heart: Empathic accuracy in dating relationships. *Journal of Personality and Social Psychology*, 69, 629-641.
- Skowronski, J. J., & Carlston, D. E. (1989). Negativity and extremity biases in impression formation. *Psychological Bulletin*, 105, 131-142.
- Snyder, M. (1984). When beliefs create reality. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 18, pp. 247–305). New York: Academic Press.
- Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage* and the Family, 38, 15-28.
- Sweeney, P. D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review and an empirical test. *Journal of Personality and Social Psychology*, 50, 974–991.
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. American Psychologist, 38, 1161–1173.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210.
- Van Lange, P. A. M., & Rusbult, C. E. (1995). My relationship is better than—and not as bad as—yours is: The perception of superiority in close relationships. *Personality & Social Psychology Bulletin*, 21, 32-44.
- Van Lange, P. A. M., Rusbult, C. E., Drigotas, S. M., Arriaga, X. B., Witcher, B. S., & Cox, C. L. (1997). Willingness to sacrifice in close relationships. *Journal of Personality and Social Psychology*, 72, 1373– 1395.
- Van Lange, P. A. M., Rusbult, C. E., Goossens, A., Görts, C. A., & Stalpers, M. (1999). Being better than others but otherwise perfectly normal: Perceptions of uniqueness and similarity in close relationships. *Personal Relationships*, 6, 269–289.
- Van Lange, P. A. M., & Sedikides, C. (1998). Being honest but not necessarily more intelligent than others: Generality and explanations for the Muhammad Ali effect. *European Journal of Social Psychology*, 28, 675-680.
- Weinstein, N. D. (1980). Unrealistic optimism about future life events. Journal of Personality and Social Psychology, 39, 806-820.
- Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, 77, 942–966.
- Wills, T. A. (1991). Similarity and self-esteem in downward comparison.

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In J. Suls & T. A. Wills (Eds.), Social comparison: Contemporary theory and research (pp. 51-78). Hillsdale, NJ: Erlbaum.

- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106, 231-248.
- Wood, J. V., & Taylor, K. L. (1991). Serving self-relevant goals through social comparison. In J. Suls & T. A. Wills (Eds.), Social comparison: Contemporary theory and research (pp. 23-49). Hillsdale, NJ: Erlbaum.
- Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psy*chology, 49, 1169-1183.

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