Positive illusion in close relationships

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Abstract

The literature regarding self–other comparisons suggests that self-enhancing perceptions are prevalent, including forms of "illusion" such as excessively positive self-evaluation, unrealistic optimism, and exaggerated perceptions of control. Concepts from optimal distinctiveness theory served as the basis for two experiments examining whether illusion functions similarly when the context of evaluation involves a relationship. In both experiments participants rated themselves, the best friend, and the average other—or their own romantic relationships, the best friend's relationship, and the relationship of the average other—using scales measuring positivity of evaluation, optimism regarding the future, and perceptions of control. In both experiments, participants exhibited centrality-based differentiation, rating targets more favorably to the degree that the target was more central to their social identity. Patterns of differentiation differed for the two contexts: In the individual context, participants differentiated themselves and their friends from the average other. In the relationship context, participants differentiated their own relationships from the relationships of friends and average others. Also, participants rated individuals as more controllable than relationships. Participants in Experiment 2 provided information regarding potential predictors of illusion. Analyses of these data suggest that favorable centrality-based differentiation may be partially accounted for by impression management, global self-esteem (particularly in the individual context), and commitment level (particularly in the relationship context).

What wild imagination one forms, where dear self is concerned! How sure to be mistaken!
—*Jane Austen*

Whether confronted with negative or positive events, whether evaluating ourselves or our peers, we live in a world of illusion (e.g., Alicke, 1985; Brown, 1986; Lipkus, Martz, Panter, Drigotas, & Feaganes, 1993; Showers, 1992; Tajfel & Turner, 1986; Taylor & Koivumaki, 1976; Van Knippenberg & Ellemers, 1990; Weinstein, 1980). Although our subjective experience of the social world in part reflects reality, perception and cognition frequently are self-enhancing, deviating from a strictly veridical view of the world. It has been argued that such misconceptions indicate poor adjustment and yield negative consequences (e.g., DeJoy, 1989; Miller, Ashton, McHoskey, & Gimbel,

1990). However, Taylor and Brown (1988) suggest an alternative perspective (cf. Scheier & Carver, 1993). These authors propose that such biased thinking to some extent represents adaptive functioning, and that some degree of self-enhancement tends to be "characteristic of normal human thought" (p. 193).

The present work explores the generalizability of illusion phenomena to the realm of groups—specifically, to perceptions of close relationships. We propose that parallel forms of illusion characterize cognition regarding relationships, and we explore the nature of such cognitions by testing hypotheses derived from Brewer's (1991) optimal distinctiveness theory. More generally, we suggest that illusion in close relationships serves an important function, representing a habit of thinking that supports the decision to persist in a relationship (cf. Rusbult & Buunk, 1993). It is easier to sustain the energies needed to maintain a relationship (e.g., to accommodate, to derogate tempting alternatives) when one's relationship is regarded as desirable and controllable, with a rosy future. The specific goal of the present research was to examine the existence and nature of illusion regarding relationships; the present work merely suggests the adaptive value of such illusion.

Favorable Self–Other Differentiation

Based on an extensive review of the literature regarding bias in human cognition, Taylor and Brown (1988) identified three forms of self-enhancement, which they describe as "illusions." This term is employed to represent "pervasive, enduring, and systematic" cognitive misconceptions, as opposed to "error" or "bias," which imply short-lived and specific mistakes. One type of illusion involves *excessively positive self-evaluation*—the tendency to perceive ourselves as superior to the average person, and to evaluate ourselves more positively than others evaluate us. A second type of illusion involves *exaggerated perceptions of control*—the tendency to perceive that we have greater control over events in our lives

than is actually likely to be the case. A third type of illusion involves *unrealistic optimism about the future*—the tendency to perceive the future as exceptionally benign, particularly our own futures.

The illusions of positivity, optimism, and control involve implicit or explicit comparisons of the self to another person(s)—comparisons that serve to differentiate the self from others in a favorable manner. In addition to self–other differentiation, illusions also function to differentiate intimates from other persons (e.g., Brown, 1986; Taylor & Koivumaki, 1976). Research examining comparisons of the self, intimates, and other individuals (e.g., Campbell, 1986; Hall & Taylor, 1976; Vallone, Griffin, Lin, & Ross, 1990; Van Lange, 1991) has demonstrated that individuals evaluate themselves more positively than they evaluate their intimates, and they evaluate their intimates more positively than does the average person (cf. Taylor & Brown, 1988; Wood, 1989). Differentiation between an intimate and a stranger may involve assimilation of the intimate other into one's social identity, as suggested by optimal distinctiveness theory.

Favorable Centrality-Based Differentiation for Individuals and Groups

Optimal distinctiveness theory (Brewer, 1991) suggests that self–other differentiation occurs along a continuum (e.g., self > intimate other > stranger). This theory characterizes social identity as "a reconciliation of opposing needs for assimilation and differentiation from others" (p. 475). There is an optimal balance between the need to regard oneself as part of a social unit (social identity) and the need to regard oneself as a distinct individual (personal identity). Individuals make favorable comparisons of intimates to strangers because enhancing an intimate—who is relatively central to one's social identity—serves to enhance one's social self. Thus, rather than describing the "self-enhancement" literature in terms of the *self* (i.e., in terms of favorable self–other differentiation), it may be appropriate to speak of *centrality-based*

differentiation—favorable differentiation on the basis of the centrality of a target to one's identity, where more central targets are simultaneously assimilated into the self and differentiated from less central targets.

Optimal distinctiveness theory also provides a rationale for the proposition that the illusions of positivity, optimism, and control may color *perceptions of relationships* (i.e., dyads or groups) much as they color *perceptions of individuals*. Comparisons of ingroups to outgroups follow a pattern of evaluation similar to that observed in the literature on self–other comparisons—a similarity predicated by both social identity theory and self-categorization theories (Tajfel & Turner, 1986; Turner, 1987). Overwhelmingly, individuals perceive ingroups more favorably than they perceive outgroups (e.g., Maass & Schaller, 1991; Schopler & Insko, 1992; Smith, 1993). It should be evident that frame of reference plays a role in the differentiation between ingroups and outgroups; ingroup members are more central to the self and function as a frame of reference for comparisons with outgroups. Thus, irrespective of frame of reference (i.e., whether perception involves personal or social identities) and irrespective of the specific illusion under consideration (i.e., positivity, optimism, control), the more central a target is to one's identity, the more favorably it should be differentiated from less central targets. Just as central targets should be favorably differentiated from less central targets, more central dyads or groups should be favorably differentiated from less central dyads or groups.

Given that the dyad formed by romantic partners can be one of the most central aspects of identity (e.g., Aron, Aron, Tudor, & Nelson, 1991), it is theoretically and clinically important to extend this line of reasoning to the close relationships domain. Indeed, some researchers have begun to explore positive illusion in the context of intimate relationships. Early studies indicate that individuals exhibit "perceived relationship superiority," holding a greater number of positive beliefs and fewer negative beliefs about their own relationships than

about others' relationships (Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Buunk & Van Yperen, 1991; Hall & Taylor, 1976; Murray & Holmes, 1993; Murray, Holmes, & Griffin, 1996a, 1996b; Van Lange & Rusbult, 1995). That is, more central targets of evaluation (i.e., one's own group/relationship) appear to be favorably differentiated from less central targets, irrespective of the context of evaluation (i.e., whether perceiving individuals or relationships; cf. Brewer, 1991; Goethals & Darley, 1987; Levine & Moreland, 1987; Smith, 1993). For example, just as an individual may hold more benevolent beliefs about her best friend than about the average person, she may hold more benevolent beliefs about her best friend's close relationship than about the average close relationship.

Unfortunately, existing research on illusion in the close relationships context is limited in that it generally has examined only one of the three illusions identified by Taylor and Brown (1988)—namely tendencies toward positive evaluation. The other two illusions—optimism and perceptions of control—by and large have been ignored in the relationships domain (but see Murray & Holmes, 1997). Granted, it is important to understand the factors that lead us to evaluate our relationships positively—happiness and satisfaction are important features of ongoing relationships. At the same time, the course of an ongoing relationship may be shaped by features other than positivity of evaluation (cf. Rusbult, 1983). For example, perceptions of control may be relevant to understanding the dynamics of nonvoluntary dependence (e.g., remaining in an abusive relationship; cf. Rusbult & Martz, 1995), and optimism regarding the future may allow dissatisfied individuals to extend the evaluative frame of their relationships into the future, thus compensating for less-than-ideal current outcomes (cf. Kelley, 1983).

Moreover, existing research has focused on the simple differentiation between one's own relationship and the relationships of strangers, and it has not included a more fine-grained analysis of centrality-based

differentiation. That is, the existing literature has not examined how perceptions of relationships with intermediate levels of centrality to one's identify (e.g., the relationships of close friends) may play into optimal distinctiveness processes. Many social psychological theories comment on the importance of identifying the self with similar others and differentiating the self from dissimilar others (e.g., social comparison theory, social identity theory). It may be equally important to understand whether and how individuals compare their relationships to similar relationships and differentiate their relationships from dissimilar relationships. As noted earlier, such cognitive maneuvers may stand as habits of thinking that support the decision to persist in a relationship (cf. Rusbult & Buunk, 1993).

Finally, no extant research has sought to determine whether substantively meaningful differences exist between illusory processes in the two contexts under consideration—individuals versus relationships. On average, do perceptions of individuals and relationships differ in meaningful ways? Some research suggests that individuals tend to be evaluated more positively than are other attitude objects, such as inanimate objects or groups of people (Sears, 1983). Thus, it is possible that, on average, compared to ratings of relationships, individuals will be evaluated more positively, perceived as more controllable, and judged to have more rosy futures, irrespective of centrality of the target to the self. For example, just as an individual may evaluate his representative in Congress favorably than the Congress as a whole, individuals may hold more favorable beliefs about their best friends than about their friends' romantic relationships.

Does the specific character of centrality-based differentiation differ for individuals and relationships? As noted earlier, no research has explicitly asked whether such differentiation varies as a function of context of evaluation, so we do not know whether or how centrality of target might interact with context (cf. Levine & More-

land, 1987; Schaller, 1992). Because "one's self-evaluation is to some extent anchored in comparisons between oneself and others, and to some extent anchored in comparisons between one's group and other groups" (Goethals & Darley, 1987, p. 34), it is possible that individuals evaluate their friends more positively than they do their friends' romantic relationships, while simultaneously evaluating their own romantic relationships as favorably as they evaluate themselves. Thus, we advance no *a priori* hypotheses regarding differences in centrality-based differentiation for individuals in comparison to relationships.

Predictors of Centrality-Based Differentiation

Given that it is not clear how context (individual vs. relationship) and centrality of target may jointly influence perception, it is desirable to consider factors that may be relevant to understanding this association—to identify variables that may be associated with centrality-based differentiation, and to consider possible moderators of such associations. One predictor might be the truthfulness of the respondent, not only with himself or herself but also with others (cf. Baumeister & Hutton, 1987; Nisbett & Ross, 1980; Nisbett & Wilson, 1977; Wood, 1989). For example, when attempting to present themselves in a favorable manner, individuals may consciously distance themselves from other individuals in order to create positive impressions (Cialdini et al., 1976; Goffman, 1959). Moreover, assuming that illusions represent deviations from reality, it is possible that there is a self-deceptive component to illusion (Paulhus, 1984). Thus, variables such as impression management and self-deception may contribute to the display of centrality-based differentiation. It would seem that self-deception and desire to present oneself favorably would be equally applicable to individuals and relationships—individuals plausibly deceive themselves and others by enhancing both themselves *and* their relationships (or by disparaging other individuals *and* others'

relationships). Thus, it seems plausible to anticipate that the associations of self-deception and impression management with favorable centrality-based differentiation will not differ for perceptions of individuals in comparison to perceptions of relationships.

Self-esteem is another plausible predictor of illusion, in that the tendency toward positive illusion has been described as characteristic of healthy self-concept (Taylor & Brown, 1988; Weinstein, 1984). While it seems clear that high self-esteem might induce more favorable ratings of the self in comparison to less central targets, to the degree that social identity includes those with whom we are intimate, it is also plausible that high self-regard will induce more favorable ratings of best friends in relation to the average other. Thus, we anticipate that self-esteem will be associated with favorable centrality-based differentiation. However, given that conceptualizations of self-esteem assume an individual context (i.e., fundamentally, self-esteem concerns evaluations of the self), it seems likely that self-esteem will predict illusion in the individual context more powerfully than it does in the context of relationships (cf. Crocker & Luhtanen, 1990; Luhtanen & Crocker, 1992). Hence, we suggest that context of evaluation will moderate the association of self-esteem with favorable centrality-based differentiation.

Recent work suggests that perceived superiority and other types of illusion may be construed as relationship maintenance phenomena, arguing that such phenomena are driven by feelings of commitment to a relationship (Rusbult & Buunk, 1993; Rusbult, Van Lange, Verette, Yovetich, & Wildschut, 1997; Van Lange & Rusbult, 1995). Commitment represents strength of desire for a relationship to persist, and induces orientation toward the future. Individuals who perceive an extended future in a relationship should be motivated to think highly of the relationship, perceive the relationship as controllable, and feel optimistic regarding the relationship's future. Also, given that commitment is a relationship-

specific construct, it seems probable that it will predict self–other and self–friend differentiation more powerfully than friend–other differentiation, and that it will do so more powerfully in the relationship context than in the individual context. Thus, we suggest that context of evaluation will moderate the association of commitment with centrality-based differentiation, particularly for self–other and self–friend differentiation.

Research Overview and Hypotheses

This article presents the results of two experiments, both of which included manipulations of context of evaluation (individual context vs. relationship context) and centrality of target (self vs. best friend vs. average other).[1] In both experiments, participants either (a) rated themselves, the best friend, and the average other, or (b) rated their own romantic relationships, the best friend's relationship, and the average other's relationship. We obtained ratings of positivity of evaluation, optimism regarding the future, and perceptions of control. Both experiments were designed to test three hypotheses. First, we anticipated that, irrespective of context of evaluation, individuals would exhibit centrality-based differentiation:

H1: *There will be main effects of centrality of target, such that ratings of evaluation, optimism, and control will be higher in the self condition than in the best-friend and the average-other conditions, such that ratings will be higher in the self and best-friend conditions than in the average-other condition, or both.*

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1. Given the necessity of generically describing levels of centrality of target irrespective of the distinction between contexts, we employ "self" to refer to oneself and one's romantic relationship, "best friend" to refer to the best friend and the best-friend's romantic relationship, and "average other" to refer to the average UNC student of one's own age and sex, as well as the average-other's romantic relationship.

Second, we anticipated that centrality-based differentiation would be evident in cognitions regarding individuals as well as in cognitions regarding relationships:

H2: *There will be simple effects of centrality of target for both contexts, such that ratings of evaluation, optimism, and control (a) will be higher for the self than for the best-friend and average-other, will be higher for the self and best-friend than for the average-other, or both; and (b) will be higher for one's own relationship than for the best-friend's and average-other's relationships, will be higher for one's own and the best-friend's relationships than for the average-other's relationship, or both.*

In addition, we sought to determine whether centrality-based differentiation functions similarly in the individual context and relationship context. Given that few if any studies have compared illusion regarding individuals and relationships (cf. Schaller, 1992), we did not advance *a priori* predictions along these lines. However, one exploratory goal of our research was to determine whether illusion functions differently as a function of context. For example, participants may regard themselves and their best friends equally favorably, but may differentiate between their own romantic relationships and the relationships of their friends.

A third and somewhat tentative hypothesis concerned differences in ratings as a function of context of evaluation. Given that previous studies have demonstrated that individuals tend to be regarded more positively than are dyads, groups, or other sorts of attitude object (Sears, 1983), we speculated that participants might rate individuals more favorably than romantic relationships, irrespective of centrality to the self. For example, we anticipated that participants might evaluate their friends more favorably than their friends' relationships.

H3: *There will be main effects of centrality of target, such that ratings of evaluation, optimism, and control will be higher in the*

individual context than in the relationship context.

Both experiments tested Hypotheses 1, 2, and 3. Experiment 2 also obtained measures of four variables that may illuminate our knowledge of the underpinnings of individual- and relationship-level illusion. These measures allowed us to address a fourth question: How does favorable centrality-based differentiation come about (i.e., what are some plausible predictors of such tendencies), and are associations with such predictors similar for perceptions of individuals versus relationships (i.e., does context moderate such associations)?

Given that one important issue in understanding perception may be the truthfulness of the individual, Experiment 2 included measures of both impression management and self-deception. We predicted that these variables would be positively associated with favorable self–other, self–friend, and friend–other differentiation in both the individual context and the relationship context.

Experiment 2 also included a measure of self-esteem. Given that self–other differentiation can be characterized as a continuum of centrality-to-self, we predicted that self-esteem would be positively associated with favorable self–other, self–friend, and friend–other differentiation. Also, we expected that context would moderate the association of self-esteem with centrality-based differentiation, such that self-esteem would predict differentiation more powerfully in the individual context than in the relationship context.

Finally, Experiment 2 included a measure of commitment to the current romantic relationship. Given that commitment level is relevant to *one's own relationship*, we predicted that commitment would be positively associated with favorable self–other and self–friend differentiation. Also, we expected that context would moderate the association of commitment with differentiation, such that commitment would predict self–other and self–friend differentiation

more powerfully in the relationship context than in the individual context.

On the basis of these lines of reasoning, a fourth hypothesis was advanced:

H4: *Ratings of evaluation, optimism, and control will be (a) positively correlated with self-deception for favorable self–other, self–friend, and friend–other differentiation; (b) positively correlated with impression management for self–other, self–friend, and friend–other differentiation; (c) positively correlated with self-esteem for self–other, self–friend, and friend–other differentiation, particularly in the individual context, and (d) positively correlated with commitment level for self–other and self–friend differentiation, particularly in the relationship context.*

Method

Participants

Two hundred eighteen undergraduates (132 women, 86 men) participated in Experiment 1 in partial fulfillment of the requirements for introductory psychology courses at the University of North Carolina (UNC) at Chapel Hill. Most were Caucasian (81% Caucasian; 11% African American; 5% Asian American; 3% other), most were in their first or second year of college (30% freshmen, 45% sophomores, 16% juniors, 10% seniors), and they were 19 years old on average (range 17 to 44 years). One hundred fifty-eight undergraduates (85 women, 73 men) participated in Experiment 2 in partial fulfillment of the requirements for introductory psychology courses at the University of North Carolina. Most were Caucasian (84% Caucasian, 11% African American, 2% Asian American, 3% other), most were in their first or second year of college (47% freshmen, 40% sophomores, 10% juniors, 4% seniors), and they were 19 years old on average (range 18 to 32 years). Participants signed up for the experiments in same-sex groups ranging in size from two to eight individuals. Each par-

ticipant was randomly assigned to one of two experimental conditions.

Design

Each experiment was a 2 × 3 × 2 design: Context of Evaluation (individual ratings vs. relationship ratings) was a between-participants variable and Centrality of Target (self vs. best friend vs. average other) was a within-participant variable. Participant Sex was an additional between-participants variable that we did not expect would influence our findings. Three types of dependent measures were assessed: evaluation, optimism, and control.

Procedure

The studies were described as computer-administered experiments in which participants would be asked to answer questions about themselves or their relationships. The experiments were presented via personal computers, linked through a server via network software. Each participant was seated at his or her own terminal. Partitions separated workstations and protected the anonymity of participants' responses. Participants received both oral and written informed-consent information, and then proceeded at their own pace through a computer-administered questionnaire. At the end of the session, participants were fully debriefed and thanked for their assistance.

Independent variable manipulations and questionnaire

In both experiments, Context of Evaluation and Centrality of Target were manipulated using parallel sets of questionnaire items. For each Centrality condition, participants completed 21 nine-point scales tapping three types of measure (seven items per type of measure; for all items, 1 = strongly disagree; 9 = strongly agree)—*evaluation* (e.g., "My life is extremely unsatisfying" [reverse-scored]), *optimism* (e.g., "No matter what happens in my life, things will al-

ways work out for the best"), and *control* (e.g., "If we work hard enough, we can make our relationship ideal"). The 21 items were randomly ordered; the same random ordering was employed across all participants. These items were modified to tap each of three levels of Centrality of Target—self, best friend, and average other for two Context of Evaluation conditions—individual versus relationship. Thus, there were two parallel questionnaires, one for individual ratings and one for relationship ratings; each questionnaire included 63 items.

Context of Evaluation was manipulated by assigning participants to either the individual or the relationship ratings condition. Participants in the *individual ratings condition* completed items describing individual-level attributes (e.g., "My life just keeps getting better every day"; "I have no control over the direction my life takes" [reverse-scored]). Participants in the *relationship ratings condition* completed parallel items describing relationship-level attributes (e.g., "My relationship just keeps getting better every day"; "We have no control over the direction our relationship takes" [reverse-scored]). Questionnaires for the two Context conditions were identical except for the variation in referent—either the individual (self, best friend, or average other) or the relationship (one's own relationship, the best friend's relationship, or the average other's relationship).

Centrality of Target was a within-participant variable. Each participant answered three parallel sets of items describing the self, the best friend (the closest friend, other than a romantic partner), and the average other (the average student at UNC of the participant's age and sex). Participants completed *self ratings* (e.g., "I am successful" or "Our relationship is successful"), *best-friend ratings* (e.g., "My closest friend is successful" or "My closest friend's relationship is successful"), and *average-other ratings* (e.g., "The average student is successful" or "The average student's relationship is successful"). The Centrality condi-

tions were presented in one of six random orders.

In Experiment 2, after completing items for each target condition, the following scales were presented in fixed order: *Commitment Level* (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; e.g., "Do you feel committed to maintaining your relationship with your partner"; 1 = not at all; 9 = completely); *Global Self-Esteem* (Hoyle, 1991; e.g., "On the whole, I am satisfied with myself"; 1 = not at all like me; 9 = very much like me); and the Balanced Inventory of Desirable Responding, which measures both *Self-Deception* and *Impression Management* (Paulhus, 1984; e.g., "I sometimes tell lies if I have to"; 1 = not true; 7 = very true).

Participant selection

In Experiment 1, in both the individual and relationship ratings conditions, if a participant indicated that he or she did not have a best friend, the program skipped items regarding the best friend (3 individuals in the individual condition, 2 in the relationship condition). In the relationship ratings condition, if a participant indicated that he or she was not involved in a romantic relationship, the program skipped corresponding items (57 individuals); if a participant indicated that the best friend was not involved in a romantic relationship, the program skipped corresponding items (28 individuals); data for one individual were deleted owing to incomplete data. Thus, a selection bias differentiated between the Context conditions: Participants in the relationship context were required to (a) be involved in a romantic relationship and (b) have a best friend who (c) was involved in a romantic relationship (*n* = 37 out of 125), whereas the only restriction for participants in the individual context was that they (b) have a best friend (*n* = 90 out of 93).

In light of the selection bias characterizing Experiment 1, we modified the selection procedure for Experiment 2. In Experiment 2 sign-up sheets indicated that, in order to participate, individuals must be in-

volved in a romantic relationship. A questionnaire item was included to verify that each participant was in fact currently involved. Moreover, *all* participants were asked whether they had a best friend and whether the friend was involved in a romantic relationship. Irrespective of the Context condition to which they were assigned, participants' data were later deleted from analyses if they were not involved in a romantic relationship (0 individuals), if they did not have a best friend (0 individuals), or if the best friend was not involved in a romantic relationship (51 individuals; 4 individuals failed to report whether the friend was involved); data for five individuals were deleted because of incomplete data.

To determine whether the selection procedure in Experiment 1 might have colored findings for that study—particularly in the individual context—we performed preliminary analyses of the Experiment 2 data, including data for those individuals whose data were retained for final analyses *and* data for those individuals whose data were later deleted on the basis of our selection criteria. These preliminary analyses included a Participant Selection variable to distinguish between individuals whose data were later retained and those whose data were later deleted. (For the individual context, this variable distinguishes between the Experiment 2 selection criteria and the Experiment 1 criteria.) These analyses revealed no significant Participant Selection main effects, no interactions of Participant Selection with other independent variables, and no simple effects of Participant Selection within levels of other independent variables. Accordingly, the selection procedures employed in Experiment 1 do not appear to have colored our findings.

Results

Reliability of measures

The reliability of items designed to measure each type of illusion was assessed by calculating *alphas* for each set of items, sepa-

rately for Experiment 1 and Experiment 2, and separately as a function of Context of Evaluation and Centrality of Target. In Experiment 1, for items tapping self, best friend, and average other, acceptable reliability was observed in both the individual context and the relationship context for measures of evaluation (average *alphas* = .77 and .76), optimism (average *alphas* = .73 and .81), and control (average *alphas* = .51 and .63). In Experiment 2, acceptable reliability was observed in both the individual context and the relationship context for measures of evaluation (average *alphas* = .83 and .84), optimism (average *alphas* = .78 and .80), and control (average *alphas* = .57 and .61). In Experiment 2, reliability analyses also revealed good convergence for items measuring each potential predictor of centrality-based differentiation: K-R-20 coefficients were .70 for Self-Deception and .74 for Impression Management; *alphas* were .91 for Self-Esteem and .88 for Commitment Level.

Correlations among measures

We calculated correlations among measures of evaluation, optimism, and control separately for Experiment 1 and Experiment 2 and separately as a function of Context of Evaluation and Centrality of Target. In Experiment 1, examining associations among ratings of self, best friend, and average other, for both the individual context and the relationship context, there were positive correlations of evaluation with optimism (using Fisher's r-to-z transformation, average rs = .75 and .70; both ps < .01), evaluation with control (average rs = .58 and .65; both ps < .01), and optimism with control (average rs = .63 and .80; both ps < .01). In Experiment 2, there were positive correlations of evaluation with optimism (average rs = .78 and .83; both ps < .01), evaluation with control (average rs = .61 and .72; both ps < .01), and optimism with control (average rs = .64 and .77; both ps < .01). Thus, although the three types of measure are associated, to some degree

they are theoretically and empirically distinguishable.

Effects of Context of Evaluation and Centrality of Target

To examine all effects in our 2 (Context of Evaluation: individual vs. relationship ratings) × 3 (Centrality of Target: self vs. best friend vs. average other) × 2 (Participant Sex: women vs. men) design, we performed doubly-multivariate repeated-measures analysis of variance separately for Experiments 1 and 2.[2] This analysis is equivalent to performing three simultaneous repeated-measures analyses of variance, examining evaluation repeated across levels of Centrality, optimism repeated across levels of Centrality, and control repeated across levels of Centrality, in the context of our between-participants variables (Context of Evaluation, Participant Sex). This technique is preferable to performing separate repeated-measures analyses because it minimizes possibilities for capitalizing on chance.

For each experiment, mean levels of each measure as a function of Context of Evaluation and Centrality of Target are presented in Table 1. Table 2 presents an analysis of variance summary table for each experiment. Out of a total of 24 effects involving Participant Sex (12 effects for each experiment), only one effect was significant in Experiment 1 and no effects were significant in Experiment 2. Accordingly, Tables 1 and 2 do not present results as a function of Participant Sex.

2. The term doubly-multivariate derives from the fact that the design is multivariate in two respects: (a) the presence of three dependent variables (evaluation, optimism, and control) conforms to the usual definition of multivariate analysis; and (b) although the repeated measures component of the design (self vs. best friend vs. average other) is conceptually univariate, it is preferable to represent such designs as multivariate so as to directly examine within-participant effects (i.e., in contrast to a univariate or mixed-model approach; Maxwell & Delaney, 1990).

Does centrality-based differentiation occur? We anticipated that, irrespective of context, targets who were more central to the self would be favorably differentiated from targets who were less central to the self. Specifically, *Hypothesis 1* predicted main effects of Centrality of Target, such that ratings of evaluation, optimism, and control would be higher in the self condition than in the best-friend and average-other conditions, and/or that ratings would be higher in the self and best-friend conditions than in the average-other condition. Consistent with expectations, the multivariate main effect of Centrality of Target was significant in both Experiment 1 (*Mult. F* [6, 118] = 22.50, $p < .01$) and Experiment 2 (*Mult. F* [6, 89] = 14.71, $p < .01$). Ignoring context of evaluation and type of measure, ratings tended to decline from the self condition to the best-friend condition to the average-other condition in both Experiment 1 (see Table 1; *Ms* = 7.18 vs. 6.64 vs. 6.01) and Experiment 2 (*Ms* = 6.95 vs. 6.61 vs. 5.84). In both experiments the main effect of Centrality of Target was evident for all three types of measure (see Table 2, "Centrality of Target Main Effect" rows under heading "Effects for Full Design")—positivity of evaluation (2 of 2 effects significant), optimism regarding the future (2 of 2 effects significant), and perceptions of control (2 of 2 effects significant).

What is the character of centrality-based differentiation? Is the self differentiated from the best friend and average other, are the self and best friend differentiated from the average other, or do both forms of differentiation occur? Contrasts of the three target conditions for the three types of measure revealed that in both experiments (a) the self condition was favorably differentiated from the average other condition (6 of 6 effects significant; see Table 2, "Self vs. Average Other" rows under headings "Effects for Full Design"); (b) the self condition was favorably differentiated from the best-friend condition (6 of 6 effects significant or marginal; see "Self vs. Best Friend" rows); and (c) the best-friend condition was favorably differentiated from

Table 1. *Mean positivity of evaluation, optimism regarding the future, and perceptions of control as a function of centrality of target and context of evaluation: Experiments 1 and 2*

Context/Illusion Type	Self	Best Friend	Average Other
Experiment 1			
Individual Context (n = 90)			
Positivity of Evaluation	7.14[a]	7.18[a]	6.15[b]
	(1.16)	*(1.10)*	*(0.87)*
Optimism Regarding the Future	6.93[a]	6.84[a]	5.82[b]
	(1.06)	*(1.06)*	*(0.99)*
Perceptions of Control	7.31[a]	7.19[a]	6.74[b]
	(0.85)	*(0.89)*	*(0.80)*
Relationship Context (n = 37)			
Positivity of Evaluation	7.76[a]	6.49[b]	6.17[b]
	(1.06)	*(1.61)*	*(0.88)*
Optimism Regarding the Future	6.90[a]	5.96[b]	5.39[b]
	(1.23)	*(1.92)*	*(1.29)*
Perceptions of Control	7.02[a]	6.18[b]	5.80[b]
	(1.22)	*(1.37)*	*(1.04)*
Experiment 2			
Individual Context (n = 50)			
Positivity of Evaluation	7.01[a]	6.84[a]	6.08[b]
	(1.23)	*(1.23)*	*(1.11)*
Optimism Regarding the Future	6.74[a]	6.59[a]	5.58[b]
	(1.04)	*(1.31)*	*(1.16)*
Perceptions of Control	7.21[a]	7.08[a]	6.64[b]
	(0.88)	*(1.01)*	*(0.73)*
Relationship Context (n = 48)			
Positivity of Evaluation	7.37[a]	6.66[b]	5.86[c]
	(1.39)	*(1.25)*	*(0.91)*
Optimism Regarding the Future	6.61[a]	6.23[a]	5.21[b]
	(1.57)	*(1.29)*	*(1.05)*
Perceptions of Control	6.76[a]	6.27[b]	5.67[c]
	(1.30)	*(0.97)*	*(0.94)*

Note: Higher values reflect more positive evaluations, greater optimism, and stronger perceived control (range = 1 to 9). Within rows, means with different superscripts differ significantly, $p < .01$.

the average other condition (6 of 6 effects significant; see "Best Friend vs. Average Other" rows). Thus, ignoring context of evaluation, three forms of centrality-based differentiation are evident: self–other differentiation, self–friend differentiation, and friend–other differentiation.

Does centrality-based differentiation occur in both the individual context and the relationship context? We anticipated that centrality-based differentiation would be evident in cognitions regarding individuals *as well as in* cognitions regarding relationships. Specifically, *Hypothesis 2* predicted

simple effects of Centrality of Target for both contexts, such that (a) participants would rate themselves more favorably than they rated the best friend and average other, and/or that they would rate themselves and the best friend more favorably than the average other; and (b) participants would rate their own relationships more favorably than they rated the best friend's and average other's relationships, and/or that they would rate their own and the best friend's relationships more favorably than the average other's relationship. Consistent with expectations, in both Experiment 1 and Experiment 2, the multivariate simple

Table 2. *Analysis of variance summary table: Experiments 1 and 2*

Effect	Positivity of Evaluation	Optimism Regarding the Future	Perceptions of Control
Experiment 1			
Effects for Full Design			
Context of Evaluation Main Effect	0.01	7.02**	29.91**
Context by Target Interaction	11.56**	4.70**	6.42**
Centrality of Target Main Effect	47.05**	50.08**	28.00**
Self vs. Average Other	100.27**	110.76**	57.81**
Self vs. Best Friend	6.69**	7.05**	11.25**
Best Friend vs. Average Other	45.59**	42.42**	16.15**
Effects Within Individual Context			
Centrality of Target Simple Effect	38.23**	51.68**	18.35**
Self vs. Average Other	52.36**	72.73**	32.47**
Self vs. Best Friend	0.08	0.59	1.57
Best Friend vs. Average Other	66.46**	70.67**	19.60**
Effects Within Relationship Context			
Centrality of Target Simple Effect	18.80**	11.25**	12.04**
Self vs. Average Other	52.01**	37.86**	25.18**
Self vs. Best Friend	17.03**	7.68**	11.66**
Best Friend vs. Average Other	1.27	2.43	1.94
Experiment 2			
Effects for Full Design			
Context of Evaluation Main Effect	0.00	2.41	26.68**
Context by Target Interaction	2.19	0.38	2.45†
Centrality of Target Main Effect	31.79**	39.07**	24.31**
Self vs. Average Other	61.59**	79.67**	47.25**
Self vs. Best Friend	6.53**	2.79†	5.90*
Best Friend vs. Average Other	32.85**	41.78**	20.83**
Effects Within Individual Context			
Centrality of Target Simple Effect	11.53**	26.35**	8.91**
Self vs. Average Other	18.85**	50.32**	16.94**
Self vs. Best Friend	0.56	0.79	0.78
Best Friend vs. Average Other	19.58**	30.18**	9.35**
Effects Within Relationship Context			
Centrality of Target Simple Effect	21.49**	16.27**	15.75**
Self vs. Average Other	45.65**	34.71**	30.30**
Self vs. Best Friend	7.85**	2.00	5.55*
Best Friend vs. Average Other	14.18**	15.77**	11.49**

** $p < .01$.
* $p < .05$.
† $p < .10$.
Note: Table values are F's from analyses of variance performed on data from Experiments 1 and 2.

effect of Centrality of Target was significant in both the individual context (Experiment 1 *Mult. F* [6, 83] = 18.84, p < .01; Experiment 2 *Mult. F* [6, 43] = 10.31, p < .01) and the relationship context (Experiment 1 *Mult. F* [6, 30] = 8.79, p < .01; Experiment 2 *Mult. F* [6, 41] = 8.00, p < .01).

Ignoring type of measure, in the individual context, ratings tended to decline from the self condition to the best-friend condition to the average-other condition in both Experiment 1 (see Table 1; Ms = 7.13 vs. 7.07 vs. 6.24) and Experiment 2 (Ms = 6.99 vs. 6.84 vs. 6.10). Ignoring type of measure, in the relationship context, ratings tended to decline from the self condition to the best-friend condition to the average-other condition in both Experiment 1 (see Table 1; Ms = 7.23 vs. 6.21 vs. 5.79) and Experiment 2 (Ms = 6.91 vs. 6.39 vs. 5.58). In both experiments, the simple effect of Centrality of Target was evident in both contexts for all three types of measure: (a) The simple effect of Centrality in the individual context was significant for evaluation, optimism, and control (6 of 6 effects significant; see Table 2, "Centrality of Target Simple Effect" rows under headings "Effects Within Individual Context"); and (b) the simple effect of Centrality in the relationship context was significant for evaluation, optimism, and control (6 of 6 effects significant; see rows under headings "Effects Within Relationship Context").

Does centrality-based differentiation function similarly in the individual context and relationship context? We did not advance *a priori* predictions along these lines, but one exploratory goal of our research was to determine whether illusion functions differently as a function of context. In Experiment 1, the interaction of Context of Evaluation with Centrality of Target was significant for all three measures; in Experiment 2 this interaction was marginal for one of three measures (see Table 2, "Context by Target Interaction" rows under "Effects for Full Design" headings). We performed contrasts of the three target conditions for the three types of measure separately for the individual and relationship contexts. In the individual context, (a)

participants rated themselves more favorably than the average other (6 of 6 effects; see Table 2, rows under headings "Effects Within Individual Context"); (b) participants did *not* rate themselves more favorably than the best friend (0 of 6 effects); and (c) participants rated the best friend more favorably than the average other (6 of 6 effects).

In contrast, in the relationship context, (a) participants rated their own relationships more favorably than the average-other's relationship (6 of 6 effects; see rows under headings "Effects Within Relationship Context"); (b) participants rated their own relationships more favorably than the best-friend's relationship (5 of 6 effects); and (c) participants rated the best-friend's relationship more favorably than the average-other's relationship in Experiment 2 (3 of 3 effects), but not in Experiment 1 (0 of 3 effects). Thus, in the individual context, participants exhibited self–other and friend –other differentiation, but did not exhibit self–friend differentiation (i.e., they *did not* differentiate between themselves and their friends). In the relationship context, participants exhibited self–friend and self–other differentiation, but did not exhibit reliable friend–other differentiation (i.e., they *did* differentiate between their own relationships and the friend's relationship).

Are individuals and relationships evaluated differently? We did not hold strong expectations about differences in ratings as a function of context. At the same time, some evidence suggests that, on average, individuals tend to be regarded more positively than are dyads or groups. Thus, in a tentative vein *Hypothesis 3* predicted main effects of Context of Evaluation, such that ratings of evaluation, optimism, and control would be higher for individuals than for relationships. Consistent with expectations, the multivariate main effect of Context of Evaluation was significant in both Experiment 1 (*Mult. F* [3, 121] = 15.65, p < .01) and Experiment 2 (*Mult. F* [2, 92] = 16.58, p < .01). Ignoring centrality of target and type of measure, ratings of individuals tended to be somewhat

more favorable than ratings of relationships in both Experiment 1 (see Table 1; Ms = 6.81 vs. 6.41) and Experiment 2 (Ms = 6.64 vs. 6.29). The main effect of Context was evident for perceptions of control in both experiments (see Table 2, "Context of Evaluation Main Effect" rows under headings "Effects for Full Design"), was evident for optimism regarding the future in Experiment 1 but not in Experiment 2, and was not evident for positivity of evaluation in either experiment.

Associations of potential predictors with favorable centrality-based differentiation

Experiment 2 obtained measures of four variables that we hypothesized would be associated with centrality-based differentiation (data for 16 individuals were deleted owing to incomplete data). Our next task was to explore whether and how these variables relate to favorable centrality-based differentiation. To evaluate the associations of Self-Deception, Impression Management, Self-Esteem, and Commitment Level with centrality-based differentiation, for ratings of evaluation, optimism, and control, we calculated three signed discrepancy scores (e.g., positive evaluation for the self minus positive evaluation for the friend) to develop measures of *favorable self–other differentiation*, *favorable self–friend differentiation*, and *favorable friend–other differentiation*.[3]

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3. The use of discrepancy scores has been criticized on the grounds that it is unclear whether associations with such scores are attributable (a) to links with the discrepancy per se, or (b) to links with one or the other component of the discrepancy (cf. Cohen & Cohen, 1983). However, in the current context the use of discrepancy scores seems suitable in that illusion can be discerned only in the differentiation between ratings of central targets and noncentral targets. Moreover, in the present work we do not seek to determine whether differentiation occurs through enhancement of central targets, derogation of noncentral targets, or both. Finally, these measures *do* constitute a decomposition of the Centrality of Target main effect into three within-participant contrasts—contrasts that have been rather thoroughly examined in the preceding analyses.

Hypothesis 4 predicted that centrality-based differentiation would be positively associated with Self-Deception, Impression Management, Self-Esteem (particularly in the individual context), and Commitment Level (particularly for self–other and self–friend differentiation in the relationship context). Preliminary analyses examining possible interactions with context revealed that the associations of centrality-based differentiation with Self-Deception and Impression Management do not differ for the individual context and relationship context; however, the associations of centrality-based differentiation with Self-Esteem and Commitment Level *do* differ for the individual context and relationship context. That is, it is suitable to examine main effects only for Self-Deception and Impression Management, but to examine interactions with Context for both Self-Esteem and Commitment Level.

Accordingly, we performed nine 7-factor regression analyses, regressing each of three differentiation scores (self–other, self–friend, friend–other) for each of three types of measure (positivity, optimism, control) simultaneously onto (a) the main effect of Self-Deception; (b) the main effect of Impression Management; (c) the main effect of Self-Esteem; (d) the interaction of Self-Esteem with Context; (e) the main effect of Commitment Level; (f) the interaction of Commitment with Context; and (g) the main effect of Context of Evaluation (0 = individual context; 1 = relationship context). Table 3 presents *beta* values for each effect for each of nine 7-factor analyses.

For example, in the 7-factor analysis predicting Self–Other Differentiation for Positivity of Evaluation, the regression coefficient for Self-Deception was .13 (see Table 3, "Self–Other Differentiation" row under heading "Self-Deception Main Effect," *beta* under column for "Positivity of Evaluation"). Table 3 presents *beta* values for the interactions of Context with Self-Esteem and Commitment Level; these coefficients tell us whether the association of centrality-based differentiation with Self-Esteem or Commitment differs for the two contexts

Table 3. *Regression of favorable self–other, self–friend, and friend–other differentiation onto self-deception, impression management, self-esteem, commitment level, and context, including interactions of self-esteem and commitment with context: Experiment 2*

Predictor	Positivity of Evaluation	Optimism Regarding the Future	Perceptions of Control
Self-Deception Main Effect			
Self–Other Differentiation	.13	.15	.17[†]
Self–Friend Differentiation	.10	.08	.13
Friend–Other Differentiation	.01	.04	.05
Impression Management Main Effect			
Self–Other Differentiation	−.13	.01	−.10
Self–Friend Differentiation	−.28**	−.22*	−.31**
Friend–Other Differentiation	.21[†]	.23*	.22[†]
Self-Esteem by Context Interaction			
Self–Other Differentiation	*−0.39*	*−0.02*	*−0.12*
Self–Friend Differentiation	*−0.89**	*−1.07***	*−0.26*
Friend–Other Differentiation	*0.66*	*1.03**	*0.15*
Self-Esteem—Individual Context			
Self–Other Differentiation	.37**	.28*	.26[†]
Self–Friend Differentiation	.35**	.29*	.11[†]
Friend–Other Differentiation	−.02	−.04	.17
Self-Esteem—Relationship Context			
Self–Other Differentiation	.18	.27[†]	.20
Self–Friend Differentiation	−.08	−.21	−.01
Friend–Other Differentiation	.29	.45**	.24
Commitment by Context Interaction			
Self–Other Differentiation	*1.13***	*1.18***	*1.04***
Self–Friend Differentiation	*0.78**	*0.94***	*0.77**
Friend–Other Differentiation	*0.30*	*0.10*	*0.32*
Commitment—Individual Context			
Self–Other Differentiation	−.22	−.24	−.14
Self–Friend Differentiation	.12	.16	.22
Friend–Other Differentiation	−.38*	−.37*	−.39*
Commitment—Relationship Context			
Self–Other Differentiation	.49**	.50**	.51**
Self–Friend Differentiation	.60**	.75**	.70**
Friend–Other Differentiation	−.20	−.31*	−.19
Context Main Effect—Individual vs. Relationship			
Self–Other Differentiation	−.43	−.88[†]	−.57
Self–Friend Differentiation	.28	.23	−.29
Friend–Other Differentiation	−.82	−.99[†]	−.32

Note: Table values are betas for each predictor variable from nine simultaneous 7-factor regression analyses, predicting self–other, self–friend, and friend–other differentiation for ratings of evaluation, optimism, and control.
** $p < .01$.
* $p < .05$.
[†] $p < .10$.

(see headings "Self-Esteem by Context Interaction" and "Commitment by Context Interaction"). Table 3 also presents *beta* values calculated separately for the individual context and relationship context; these coefficients represent the actual associations of centrality-based differentiation with Self-Esteem and Commitment in the two contexts (e.g., see heading "Self-Esteem—Individual Context").[4]

The analyses revealed no support for *Hypothesis 4a*. The multivariate main effect of Self-Deception was not significant (*Mult. F* [6, 69] = 0.55, *p* < .77), and the regression coefficients for this variable were nonsignificant in all nine univariate analyses (one effect was marginal; see Table 3, rows under heading "Self-Deception Main Effect"). The analyses revealed some support for *Hypothesis 4b*. The multivariate main effect of Impression Management was marginally significant (*Mult. F* [6, 69] = 2.04, *p* < .07), and coefficients for this variable were significant or marginal in six of nine analyses. Consistent with expectations, Impression Management was positively associated with favorable friend–other differentiation (3 of 3 effects significant or marginal); inconsistent with expectations, Impression Management was negatively associated with self–friend differentiation (3 of 3 effects).

In these analyses we examined both the main effect of Self-Esteem and the interaction of this variable with Context. In weak support of *Hypothesis 4c*, the multivariate interaction of Self-Esteem with Context was marginally significant (*Mult. F* [6, 69] = 2.07, *p* < .07); in univariate analyses, the interaction of Self-Esteem with Context was significant in three of nine instances (see rows under heading "Self-Esteem by Con-

text Interaction"). Consistent with expectations, in the individual context Self-Esteem was positively associated with self–other differentiation (3 of 3 effects; see rows under heading "Self-Esteem—Individual Context") and self–friend differentiation (3 of 3 effects); coefficients for friend–other differentiation were nonsignificant (0 of 3 effects). However, Self-Esteem was also weakly associated with centrality-based differentiation in the relationship context—for both self–other differentiation (1 of 3 effects; see heading "Self-Esteem—Relationship Context") and friend–other differentiation (1 of 3 effects).

We also examined both the main effect of Commitment and the interaction of this variable with Context. Consistent with *Hypothesis 4d*, the multivariate interaction of Commitment with Context was significant (*Mult. F* [6, 69] = 3.28, *p* < .01); in univariate analyses the interaction of Commitment with Context was significant in six of nine instances (see rows under heading "Commitment by Context Interaction" in Table 3). Consistent with expectations, in the relationship context Commitment was positively associated with self–other differentiation (3 of 3 effects; see rows under heading "Commitment—Relationship Context") and self–friend differentiation (3 of 3 effects); Commitment was unreliably negatively associated with friend–other differentiation (1 of 3 effects). Surprisingly, in the individual context Commitment was negatively associated with friend–other differentiation (3 of 3 effects; see rows under heading "Commitment—Individual Context"); coefficients for self–other and self–friend differentiation were nonsignificant.

The multivariate main effect of Context of Evaluation was not significant (*Mult. F* [6, 69] = 1.26, *p* < .29), and the regression coefficients for this variable were nonsignificant in all nine univariate analyses (2 effects were marginal).

Discussion

Consistent with *Hypothesis 1*, the present research revealed that the more central a

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4. The self–friend and friend–other differentiation measures fully describe the Centrality of Target effect represented by our three Centrality conditions; multivariate effects are based on these two criteria. However, it is instructive to examine univariate effects for all three types of centrality-based differentiation. Therefore, we performed univariate analyses for all nine criteria, examining self–friend, friend–other, *and* self–other differentiation for evaluation, optimism, and control.

target is to the individual's identity, the greater is the individual's tendency to perceive the target favorably. Ignoring context of evaluation, individuals exhibited three forms of centrality-based differentiation: (a) Ratings were higher in the self condition than in the average-other condition; (b) ratings were higher in the self condition than in the best-friend condition; and (c) ratings were higher in the best-friend condition than in the average-other condition. These findings support the line of reasoning outlined in the introduction: Consistent with optimal distinctiveness theory (cf. Brewer, 1991), it appears that it is suitable to speak of "centrality-based differentiation," whereby relatively central targets are simultaneously assimilated into the self and differentiated from less central targets.

Furthermore—and consistent with previous research—individuals engage in at least three forms of centrality-based differentiation, exhibiting illusion with respect to positivity of evaluation, optimism regarding the future, and perceptions of control (cf. Taylor, & Brown, 1988). These three types of illusion appear to function similarly, being influenced in like manner by the variables examined in our work. For example, evaluation, optimism, and control were similarly affected by variations in centrality of target, and they exhibited parallel associations with predictors of centrality-based differentiation. Also, the three types of measure were positively correlated.

Does centrality-based differentiation occur in cognition regarding relationships as well as in cognition regarding individuals? In support of *Hypothesis 2*, the simple effect of centrality of target was significant in both the individual context and the relationship context. Moreover, the effects of centrality were significant for evaluation, optimism, and control. These findings do much to extend the literature regarding positive illusion, demonstrating the existence of centrality-based differentiation for all three types of illusion, for both individuals and relationships.

Our work also asked whether centrality-based differentiation functions similarly, irrespective of context. We discovered an interesting difference between patterns of differentiation for individuals and groups: In the individual context, participants exhibited reliable self–other and friend–other differentiation, but did not exhibit self–friend differentiation (i.e., they *did not* differentiate between themselves and their friends). In the relationship context, participants exhibited reliable self–other and self–friend differentiation, but did not exhibit reliable friend–other differentiation (i.e., they *did* differentiate between their own relationships and the friend's relationship). Thus, in perceiving individuals, friends are incorporated into the self; in perceiving relationships, friends' relationships are contrasted from one's own relationship.

This finding may be explained through two lines of reasoning. One line of reasoning suggests that two close individuals readily form a natural, identity-defining social unit, whereas larger groups are less automatically unitlike in their relation to social identity. For example, the process of assimilation involved in self–other merger may be easier for an individual "other" than for an "other" composed of a dyad or group (cf. Aron & Aron, 1997). Assuming this to be so, it would make sense that, in our work, two close individuals—either oneself and one's best friend, or the dyad comprised of oneself and one's romantic partner—formed a necessary and sufficient identity-defining unit. In the context of relationship perception, if one's two-person romantic involvement is bolstered, it is unnecessary to bolster identity further by bolstering a friend's involvement; in individual perception, greater potential exists for bolstering identity "with a little help from [one's] friends." Indeed, relationships appear to stand as natural perceptual categories, playing a role in "organizing spontaneous mental representations" of the social world (Sedikides, Olsen, & Reis, 1993, p. 71). Also, research comparing interindividual to intergroup interactions consistently has demonstrated that one-on-one interactions are perceived as more congenial and cooperative than are

group-on-group interactions (e.g., Insko, Schopler, Hoyle, Dardis, & Graetz, 1990; Schopler, Insko, Graetz, Drigotas, & Smith, 1991). This body of research argues that a qualitative discontinuity exists between one-to-one perception and group-to-group perception.

According to a second line of reasoning, the realities of interdependence may explain why an individual is more readily incorporated into one's identity than a group. In short, compared to two persons (i.e., my best friend and I), four persons (i.e., my partner, my best friend, my friend's partner, and I) face more daunting problems of interdependence. For example, couple-to-couple interactions may be complicated by romantic jealousy, envy, or competition, and members of larger groups necessarily will find it difficult to judge one another's preferences, coordinate action, and achieve desirable outcomes for all parties. Also, the odds that four individuals will actively enjoy one another's company is exponentially smaller than the odds that two people will find one another congenial. Similarly, it is easier to locate a one-person social unit whom one is willing to bring to one's bosom in an identity-defining manner; in the case of a three-person social unit, just one bad egg can obliterate desire to link one's identity to the unit. In her novel *Heartburn*, Nora Ephron (1983, p. 101) describes a successful instance of dual-relationship interdependence (i.e., couple-to-couple dating):

We saw each other every Saturday night and every Sunday night, and we had a standing engagement for New Year's Eve. Our marriages were tied together. We went to Italy, we went to Ireland, we went to St. Martin. . . . In some fundamental sense, we were always on the road, merrily on our way to nowhere in particular. Two of us liked dark meat and two of us liked light meat and together we made a chicken.

The rarity of such congenial, identity-defining foursomes pays testimony to the complexities of interdependence in larger groups. In short, it is relatively easy to incorporate one's romantic partner and relationship into one's identity, and it is relatively easy to incorporate one's best friend into one's identity. Successfully linking a best-friend's relationship to one's own relationship may be a far more complex interdependence phenomenon.

The present work also asked whether, on average, individuals perceive relationships as favorably as they perceive individuals. Consistent with *Hypothesis 3*, main effects of context—individual versus relationship—were observed for perceptions of control. Why are individuals regarded as more controllable than relationships? Whereas control in the individual context depends on individual-level attributes (e.g., skill, knowledge), control in the relationship context also rests on the partner's characteristics and emergent features of the relationship—the course of a relationship is partially determined by relatively complex forms of interdependence (cf. Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996; Thibaut & Kelley, 1959). Thus, whereas it may not be unreasonable to perceive that individuals exert some degree of control over events in their lives (cf. Langer, 1989; Lerner & Miller, 1978), control over events in an ongoing relationship clearly is more complex and multifaceted (cf. Jones & Davis, 1965).

In light of previous findings regarding the person-positivity bias (e.g., Sears, 1983), it is curious that in our work the main effect of context was not significant for positivity of evaluation. This may be due to methodological differences between our work and traditional studies of person-positivity: Rather than comparing evaluations of "my congresswoman" to evaluations of "Congress," as in prototypic person-positivity research, we compared evaluations of individuals (e.g., my best friend) to evaluations of a substantially smaller group—a romantic dyad (e.g., my best friend and her romantic partner). Thus, it is possible that in the present work, traditional person-positivity was overridden by the tendency to view relationships as a reflection of the individual partner's social identities, and vice

versa (cf. Cooper, 1981; Tajfel & Turner, 1986).

Relevant to *Hypothesis 4b*, Experiment 2 revealed that favorable centrality-based differentiation may be partially accounted for by impression management. It is interesting that impression management appears to promote enhancement of one's best friend. Impression management was negatively associated with favorable self–friend differentiation and positively associated with friend–other differentiation. Thus, the process of impression management may be relatively sophisticated and indirect. Individuals may believe that it is ultimately less effective to enhance themselves publicly than it is to enhance identity-defining intimates (e.g., parents brag about their children, not themselves). (We should also note that this research was conducted in the South, where modesty is a virtue and self-aggrandizement is regarded as inexcusably gauche.)

Hypothesis 4a received virtually no support. *A priori*, it seemed reasonable to speculate that self-deception might be linked with inclinations toward illusion. It appears that deceiving others (i.e., engaging in impression management)—particularly in the indirect fashion evident in the present work—is a more reliable predictor of illusion than is deceiving oneself.

Our findings for global self-esteem were generally congruent with *Hypothesis 4c*, suggesting that this variable may be more strongly associated with differentiation in the individual context than in the relationship context. Also, self-esteem was consistently associated with self–other and self–friend differentiation but was unrelated to friend–other differentiation. These results provide evidence for the construct validity of self-esteem, suggesting that self-esteem is uniquely tied to individual identity. Future work designed to explore the relationship between individual and group functioning would benefit from exploring the differential utility of individual and collective self-esteem constructs (cf. Brewer, 1991; Crocker & Luhtanen, 1990; Luhtanen & Crocker, 1992).

Consistent with *Hypothesis 4d*, commitment level was associated with centrality-based differentiation in the relationship context. Also, in the relationship context, commitment was associated with self–other and self–friend differentiation but was unrelated to friend–other differentiation. As was true for self-esteem, these findings support the construct validity of commitment, demonstrating that commitment is uniquely tied to one's own relationship (cf. Rusbult & Buunk, 1993). Recent research suggests that the link between commitment and centrality-based differentiation may be motivational: Manipulations of psychological threat enhance the commitment-illusion link, whereas injunctions to be accurate weaken this link (Rusbult et al., 1997). One finding from the present work may be consistent with the claim that commitment possesses motivational properties: In the individual context, commitment was negatively associated with friend—other differentiation, suggesting that the derogation of (threatening) others in relation to (trusted) friends may be one consequence of strong commitment. However, on the basis of the current findings this line of reasoning is highly speculative.

Limitations and directions for future work

As with any experimental procedure, the present methodology is not without limitations. First, although in some respects within-participant designs are preferable to between-participant designs (e.g., greater information per participant, increased power), there are drawbacks to this methodology, such as the inability to control for potentially persistent carryover effects (Maxwell & Delaney, 1990). In future research it would be useful to employ between-participant manipulations to examine the phenomenon of centrality-based differentiation.

A second limitation of the present work centers on participant loss, which occurred when participants reported that they did not have a best friend, or when either the participant or the best friend was not cur-

rently involved in a romantic relationship. Participant loss was particularly problematic in Experiment 1, where differential loss across conditions yielded an interaction of selection bias with context of evaluation. In Experiment 2, steps were taken to guarantee equivalent samples in the individual and relationship contexts. At first glance, one might question the validity of findings based on a subset of the larger sample. At the same time, it should be clear that the hypotheses and design necessitated a sample in which both participants and their friends were romantically involved. While it would be possible to "eliminate" selectivity by specifying multiple requirements for participation on sign-up sheets, it should be clear that such a procedure merely shifts selectivity from the hands of the experimenter into the hands of the participant pool. At the very least, the current method provides an estimate of the number of individuals who would have been excluded had such restrictions been imposed. Moreover, preliminary analyses of the Experiment 2 data allowed us to examine the effects of our selection procedures; those analyses revealed no significant differences between participants whose data were retained and participants whose data were later deleted from analyses.

Third, research utilizing self-report can be challenged on the grounds that the obtained results reflect self-report bias (e.g., socially desirable responding, consistency bias). Seeking to translate this liability into an asset, in Experiment 2 we asked participants to complete the Balanced Inventory of Desirable Responding (Paulhus, 1984), which allowed us to examine the associations of centrality-based differentiation with self-deception and impression management. Self-deception was unrelated to response tendencies, and associations with impression management were complex (i.e., inconsistent with straightforward self-enhancement). Thus, our findings cannot readily be accounted for by self-report artifacts such as desire to present oneself favorably. Nevertheless, given that participants may tailor their responses in complex ways and

for a variety of reasons, it might be useful to study related phenomena using behavioral measures, or to investigate illusory processes in more naturalistic settings (e.g., using thought-listing techniques; using diary methodologies to study illusion in everyday perception; cf. Reis & Wheeler, 1991; Webb, Campbell, Schwartz, & Sechrest, 1966).

Finally, the reader should take note of the fact that, in describing the correlational results of Experiment 2, we have referred to *associations* with illusion. It is important to acknowledge that our results regarding the predictors of centrality-based differentiation clearly represent plausibility tests, and that no direct inferences regarding cause and effect can be formed. More generally, it is important to note that we cannot infer causation in describing the effects of centrality of target, in that targets were not randomly assigned to participants—indeed, participants themselves decided which particular friend and average other they would bring to mind and describe.

While many extensions of the present work seem promising, space permits consideration of just a few fruitful directions for future research: First, do partners in a given relationship exhibit parallel forms of illusion in perceiving their relationship (i.e., do partners exhibit *folie à deux*)? It would not be surprising if "the bonds of intimacy bring with them a large degree of cognitive interdependence, a tendency for individuals' thought processes and structures to be mutually determined" (Wegner, 1987, p. 199). Observing the extent to which partners exhibit parallel illusion—in both degree and form—may aid in explaining the development, maintenance, and functions of illusion.

Second, how does illusion relate not only to individual well-being but also to relationship well-being? While some degree of illusion may promote adjustment, extreme levels might well be detrimental (cf. Taylor & Brown, 1994). Where lies the point of maximum yield? One approach to exploring such issues would be to examine the link between illusion and later breakup, or with measures of couple adjustment such as

the Dyadic Adjustment Scale (Spanier, 1976; cf. Murray & Holmes, 1997; Rusbult et al., 1997). Another approach would be to investigate whether partners employ illusion to mitigate internal or external threats to a relationship (e.g., Murray & Holmes, 1993; cf. Brickman, Dunkel-Schetter, & Abbey, 1987).

Third, it would be interesting to explore how illusion changes over time, if at all. For example, when and how does illusion emerge? How and why does illusion grow stronger, and how and why does it deteriorate? Consistent with the logic underlying the present work, Murray and Holmes (1997) recently demonstrated that the romantic relationships of individuals with greater levels of illusion are more likely to persist over time. Given that illusion affects both individual well-being and couple well-being, the ability to predict change in illusion might allow us to inoculate healthy relationships in preparation for turbulent periods. Alternatively, it may be possible to shape relationship-specific illusions in such a manner as to enhance functioning in distressed relationships.

Conclusions

The present research demonstrated that individuals exhibit centrality-based differentiation in perceiving relationships much as they do in perceiving individuals. Tendencies toward positive evaluation, optimism regarding the future, and perceptions of control characterize cognition regarding both individuals and relationships. Although individual-level and relationship-level illusion are parallel in many respects, various substantively meaningful differences exist in the nature of centrality-based differentiation for the two contexts; also, the predictors of such differentiation appear to differ for the two contexts. These findings have important implications for our knowledge of the social nature of the self, revealing differences in the nature of identity across interpersonal domains. More broadly, this research suggests that it may be fruitful to conceive of self-enhancement in terms of centrality-based differentiation, demonstrating that such an approach may illuminate our understanding of the nature of individual and social identity.

Finally, the present results may encourage the sharing of concepts across typically segregated literatures (e.g., social cognition, personality, ingroup–outgroup relations, close relationships). Exploring such process-oriented portability of concepts surely will lead to an increasingly coherent approach to our understanding of human social behavior.

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