

# My Head Says Yes but My Heart Says No: Cognitive and Affective Attraction as a Function of Similarity to the Ideal Self

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The authors hypothesized that similarity to the ideal self (IS) simultaneously generates attraction and repulsion. Attraction research has suggested that a person likes individuals who are similar to his or her IS. Social comparison research has suggested that upward social comparison threatens self-evaluation. In Experiment 1, attraction to a partner increased and then decreased as the partner became more similar to and then surpassed the participant's IS. In Experiment 2, the cognitive and affective components of attraction increased and decreased, respectively, as the partner approached and surpassed the participant's IS to the extent that the dimension of comparison was meaningful and participants anticipated meeting their partner. Similarity to the IS generates opposing cognitive and affective reactions when the self-evaluative threat of upward comparison intensifies.

Research dating back to Newcomb's (1961) field studies has revealed a positive linear association between similarity and interpersonal attraction. Indeed, Byrne and Nelson (1965) designated this linear association as the *law of attraction*. More recent efforts in the attraction literature have been directed at disentangling similarity to the actual self versus the ideal self and suggest that the ideal self is the driving force behind the similarity–attraction relationship (LaPrelle, Hoyle, Insko, & Bernthal, 1990; Wetzel & Insko, 1982). That is, people are attracted to others who emulate the person they want to be rather than the person they actually are. The current research extends the investigation of similarity to the ideal self in light of an opposing process that might simultaneously decrease attraction. The ideal other may be desirable; nonetheless, comparison with such a person may prove threatening and instigate psychological distancing (e.g., Tesser, 1988). The current research attempts to capture these opposing processes and examine their role in the similarity–attraction association.

## Attraction as a Function of Similarity to the Ideal Self

The bulk of the early work on the similarity–attraction association operationalized similarity in terms of attitudes (Byrne, 1961; Byrne & Nelson, 1965; Byrne & Rhamey, 1965).<sup>1</sup> In the *bogus other* paradigm, for example, participants completed an attitude questionnaire and received a questionnaire allegedly completed by another person. The other person's attitudes were manipulated such that they varied in similarity to those of the participant. This research repeatedly found a consistent linear relation between attitudinal similarity and attraction (Byrne, 1971). However, reliance on attitudinal similarity does not clarify whether the basis of attraction is similarity to the actual self, similarity to the ideal self, or both. As LaPrelle et al. (1990) suggested, "The attitudes that we hold are also the ones that we find to be the most desirable" (p. 217). In other words, the actual and ideal selves are confounded or overlap on attitudinal dimensions.

More recent research has suggested that it is primarily similarity to the ideal self that affects attraction. LaPrelle et al. (1990, Experiment 1) had participants rate their actual self, ideal self, liked peers, and not-liked peers on numerous trait scales. The similarity–attraction relationship (i.e., degree of perceived similarity with liked vs. not-liked peers) was stronger for the ideal self than the actual self. Additionally, similarity to the actual self was associated with attraction only to the extent that participants perceived their actual self as being similar to their ideal self. These results were replicated with an experimental method that manip-

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<sup>1</sup> This is not to suggest that all of the early research used attitudinal similarity. Some studies examined economic similarity (Byrne, Clore, & Worchel, 1966), and another examined similarity in regard to personality characteristics (Byrne, Griffitt, & Stefaniak, 1967).

ulated liking between previously unacquainted persons and measured participants' perceptions of their actual self, ideal self, and partner (LaPrelle et al., 1990, Experiment 2). Differences in liking more strongly affected the perceived similarity of the partner to the participant's ideal than to his or her actual self. Furthermore, a factor analysis of the scales on which self and other were rated identified a belief-orthodoxy (or attitudinal) factor. On that attitudinal factor, the liking manipulation equally affected perceived similarity to the actual and ideal selves—with the liked partner perceived as more similar to the ideal self and actual self than the not-liked partner. Although these studies reversed the direction of causation typically investigated in the similarity–attraction literature, they are consistent with the proposition that similarity to the ideal self drives the similarity–attraction association, and attitudes (or, for that matter, any dimension on which the actual and ideal selves overlap) confound similarity of the actual and ideal selves.

Wetzel and Insko (1982) more directly tested the effect of ideal-self similarity on attraction by independently manipulating perceived similarity to the actual and ideal selves. We describe this procedure in detail because we used a modified version of the procedure in our own experiments. During an initial session, participants rated their actual self and ideal self on 50 semantic differentials and were informed that a computer program would analyze their responses to determine the dimensions they use to perceive self and others. A week later, participants were informed that the program identified two dimensions and that the purpose of the experiment was to test the validity of the dimensions by examining whether participants could accurately guess the labels of the dimensions. To facilitate this labeling task, participants were informed that they would be paired with a partner whom they would come to know through a series of interactions. Before meeting their alleged partner, participants learned that their partner was either similar or dissimilar to their actual self on both dimensions and similar or dissimilar to their ideal self on both dimensions. In particular, participants were informed that the partner was either 1 or 5 points away from their actual self and 1 or 5 points away from their ideal self on Dimension A and 2 or 6 points away from their actual self and 2 or 6 points away from their ideal self on Dimension B. Participants provided their preinteraction impression of their partner by rating how much they liked their partner. A series of such experiments detected a consistent main effect for similarity to the ideal self but not a consistent main effect for similarity to the actual self: Participants liked partners who were similar to their ideal self.

In summary, research subsequent to the initial experiments on the similarity–attraction association has suggested that the association is driven primarily by similarity to the ideal self. Perceived similarity to the actual self generates attraction only to the extent that the actual and ideal selves overlap (i.e., are the same). A theoretical account of why attraction is driven by similarity to the ideal self is relatively simple in that the ideal self is the valued or desired state of affairs. As an illustration, take Norman Anderson's (1981) application of information integration theory to attitudes. Anderson gave the example of one's attitude preference for an automobile being an averaged function of the extent to which the automobile's attributes (e.g., body style, engine) are personally valued and weighted by their perceived importance. In Anderson's example, there is no mention of similarity to the actual self (or the

attributes of the car one currently drives). The emphasis is on attributes that are valued or that are ideal. Anderson argued that the same process applies to attitudes (i.e., attraction) toward persons. Complexity arises in the similarity–attraction association when the actual self and ideal self are confounded. This is less likely to happen for traits, such as extroversion, than for attitudes because persons are better able to change their attitudes than their traits.<sup>2</sup>

### Self-Evaluation and Upward Social Comparison

The consistency of the relation between similarity to the ideal self and attraction across experimental and nonexperimental methodologies is notable and satisfies the often competing requirements of internal and external validity. Indeed, similarity to the ideal self prospectively predicts whether college roommates remain together across the duration of a semester (Wetzel, Schwartz, & Vasu, 1979)! Despite the methodological diversity of these similarity studies, an alternative body of literature suggests that the similarity–attraction relationship may be more complex than the extant data imply.

A person who is what others desire to be is certainly impressive and awe inspiring. At the same time, however, comparison with such a person can be devastating. Upward social comparison (i.e., comparing the self with a superior other) on self-relevant domains, at times, spawns negative affect, painful emotions (e.g., envy and jealousy), and a desire to distance the self from the other (Salovey & Rodin, 1984, 1991; Tesser, Millar, & Moore, 1988).

The self-evaluation maintenance model (SEM; Tesser, 1986, 1988) provides a useful framework for understanding the self-evaluative and interpersonal consequences of social comparison. We describe the SEM and subsequently describe recent research that identifies a context not identified by the SEM in which upward social comparison exerts inspirational and enhancing effects on self-perception. According to the SEM, upward social comparison activates either a reflection process or a comparison process. The reflection process has positive implications for self-evaluation in that self is assimilated with other and can bask in the reflected glory of the other's successes and achievements (e.g., Cialdini et al., 1976). The comparison process, on the other hand, has negative implications for self-evaluation in that self is contrasted against the more successful other. Whether the reflection or comparison process is activated is determined by the relevance of the dimension of comparison. Self-relevant (i.e., important to self definition) dimensions activate the comparison process, and dimensions of lesser relevance activate the reflection process. Furthermore, the intensity with which the reflection and comparison process is activated varies as a function of the closeness of self and other, with those processes being activated most strongly when the other is close (i.e., *unit relationship*; e.g., Heider, 1958) to the self. So comparison with a close other who outperforms the self on an irrelevant dimension increases self-evaluation via maximal activa-

<sup>2</sup> An exception to the relationship between attraction and attitudinal similarity occurs for nonpolarized attitudes that are indifferent or ambivalent (Insko, 1984). Evidence has suggested that people are not particularly attracted to others who agree with them in being neutral—an effect that is inconsistent with the possibility that the similarity–attraction association is driven by similarity to the actual self.

tion of the reflection process, whereas comparison with a close other who outperforms the self on a relevant dimension decreases self-evaluation via maximal activation of the comparison process.

Because self-enhancement is a primary human motive (for articulations of this basic motive, see Baumeister, 1998; Greenberg, Solomon, & Pyszczynski, 1997; Leary, 1999; Sedikides, Gaertner, & Toguchi, 2003; Sedikides & Herbst, 2002; Sedikides, Herbst, Hardin, & Dardis, 2002; Steele, 1988; Taylor & Brown, 1988; Tesser, 2000), the SEM suggests that upward comparison with a close other on self-relevant domains results in attempts to rectify the unpleasant consequences of negative self-evaluation. Indeed, persons react to upward social comparison on self-relevant dimensions, in part, by (a) diminishing the perceived relevance of the dimension of comparison (Tesser & Campbell, 1981), (b) weakening bonds of interpersonal closeness between self and other (Pleban & Tesser, 1981; Salovey & Rodin, 1984), (c) disparaging the other (Salovey & Rodin, 1984), and even (d) sabotaging the other's performance (Tesser & Smith, 1980).

Lockwood and colleagues (i.e., Lockwood, Jordan, & Kunda, 2002; Lockwood & Kunda, 1997, 1999) have advanced the SEM by demonstrating that upward social comparison on relevant domains can positively (rather than negatively) affect the self. That is, exemplary individuals, at times, serve as role models who inspire self-improvement and a drive toward success, and such inspiration enhances self-perception. Of particular interest is that the perceiver's ideal self is implicated in whether upward social comparison on self-relevant domains exerts inspirational or self-deflating effects. As Lockwood and Kunda (1999) suggested, making salient one's ideal or "best-hoped for future selves may disrupt one's ability to envision a self as outstanding as the superior other, thereby blocking one's ability to draw inspiration from the other person's success and undercutting self-enhancement" (p. 215).

Indeed, Lockwood and Kunda (1999, Study 2) had college students describe, in regard to the domain of academic success, their ideal self, actual self, or, in a no-self control condition, the typical leisure activity of the average college student. Participants subsequently read a newspaper article about an academically outstanding student (i.e., upward comparison) or a newly acquired animal at the local zoo (i.e., no comparison) and rated the self-descriptiveness of success-relevant adjectives. Participants primed to think about their actual self or no self evaluated themselves more favorably when they upwardly compared with the high-achieving student than when they read about the zoo animal and, importantly, participants primed to think about their ideal self evidenced the opposite pattern and evaluated themselves less favorably when they upwardly compared with the high-achieving student. In summary, upward social comparison on self-relevant dimensions can be inspiring and enhances self-perception in a drive toward improvement. However, such inspiration is curtailed and upward social comparison proves threatening and negatively affects self-perception when the ideal self is salient.

#### Resolving Seemingly Inconsistent Literatures: On the Duality of Attraction

The similarity–attraction literature has indicated that persons are attracted to others who emulate the ideal self. Oddly, attraction to

the ideal other has been detected under conditions that, according to the social comparison literature, threaten self-worth and prompt psychological distancing. In particular, similarity–attraction research that distinguished between similarity to the actual and ideal selves (Laprelle et al., 1990; Wetzel & Insko, 1982) created a social context in which (a) the participant upwardly compared with the target person, (b) the target person was a fellow student (i.e., psychologically close to the participant), (c) the dimension of comparison was designed to be self-relevant, and (d) the participant's ideal self was made explicitly salient (i.e., Wetzel & Insko, 1982). Despite the threat to self-worth posed by such a context, participants evidenced attraction to the ideal other.

What should be made of the apparent inconsistency between the similarity–attraction and social comparison literatures? Are one or both literatures wrong? Are the literatures at an impasse? We suggest that the apparent inconsistency can be resolved by recognizing that persons experience a duality of reactions to the ideal other. In the attitudes literature, interpersonal attraction is conceptualized as an attitude, which is an evaluative (i.e., unfavorable–favorable) response to an object (for reviews, see Eagly & Chaiken, 1993, 1998). Furthermore, the tripartite model of attitudes suggests that the general evaluative nature of an attitude has cognitive, affective, and behavioral components (Bagozzi, 1978; Breckler, 1984; Kothandapani, 1971; Ostrom, 1969; for an alternative analysis, see Dillon & Kumar, 1985). The cognitive component consists of beliefs about the attitude object, the affective component consists of feelings toward the object, and the behavioral component consists of actions toward the object. Although there is a general drive toward consistency among attitudinal components (e.g., Heider, 1958; Rosenberg, 1960), the components initially may be inconsistent. Perhaps the cognitive component of the evaluation of the ideal other attests to his or her superlative status and reflects beliefs about his or her desirable characteristics. On the other hand, the affective component may reflect disdain toward the ideal other and the envy and jealousy that, under certain conditions, follow social comparison.

If such a duality of responses toward the ideal other is plausible, why has the similarity–attraction literature detected only a positive reaction toward those who approximate the ideal self? It is important to keep in mind that such duality should occur under limited circumstances. Comparison with a person who approximates one's ideals should generate disdain only when comparison poses a threat to self-evaluation. As previously described, the initial research on similarity–attraction used comparison dimensions on which there was little discrepancy between the participants' actual and ideal selves (i.e., attitudinal similarity). Consequently, comparison with the "similar" other was lateral rather than upward (i.e., "We are both ideal!") and did not threaten the participants' self-evaluation.

The more recent research that differentiated between the actual and ideal selves more closely approximated a context in which a duality of responses was plausible. However, this research did not necessarily use dependent measures capable of detecting conflicting responses. Wetzel and Insko (1982), for example, used a single-item measure of liking. Liking plausibly taps a general evaluation and reflects some amalgamation of the cognitive and affective reactions. Additionally, it might be argued that the dimension of comparison used in the more recent studies was of little

relevance to the participant and, consequently, activated the reflection process that increases self-evaluation and likely increases attraction (both cognitive and affective) toward the ideal other. This latter argument is less plausible in that the instructions provided to participants were intentionally designed to imbue the dimension of comparison with personal relevance. In any event, past research on the similarity–attraction association was not designed in a manner that could accurately capture a duality of reactions.

### The Current Research

The current research, consisting of two experiments examining the relation between similarity and attraction, was designed to capture the potentially dual reactions to the ideal other. In both experiments, the participant’s ideal self was made salient across all conditions, thereby instigating threatening, as opposed to inspiring, consequences of upward comparison (e.g., Lockwood & Kunda, 1999). The first experiment used a measure of general evaluation and partially replicated the procedure of Wetzel and Insko (1982). Visual feedback was used to manipulate the perceived similarity of the participant’s alleged partner and the participant’s ideal self. The similarity manipulation, however, was more extreme than that of Wetzel and Insko (1982) in that in the most extreme condition, the partner surpassed (i.e., was better than) the participant’s ideal self. We reasoned that the general evaluation might reflect negativity toward the participant in this extreme condition. The second experiment used separate measures of affective and cognitive attraction and used a factorial design to manipulate the conditions under which the cognitive and affective reactions would be maximally discrepant. Finally, we assessed self-evaluative threat in both experiments to examine whether patterns of attraction covaried with potential threats to self-evaluation.

### Experiment 1

The current experiment partially replicated the procedure of Wetzel and Insko (1982) in that we manipulated the perceived similarity of an alleged partner to the participant’s ideal self and measured general evaluative attraction toward the partner. Likewise, we attempted to maximize the self-evaluative implications of social comparison by (a) informing participants that they would interact with and get to know their partner, (b) making the dimension of comparison self-relevant, and (c) making the participants’ ideal self salient. In particular, participants received feedback in regard to “the major dimension you use to find meaning in who you are.” Unlike Wetzel and Insko, we used visual feedback that unambiguously displayed the relative similarity between the partner and the participant’s ideal self (see Figure 1); Wetzel and Insko (1982) manipulated similarity by verbally describing the numeric distance between the partner and participant on a given dimension. Additionally, our similarity manipulation was more extreme in that in the most extreme condition, the partner’s actual self surpassed the participant’s ideal self. We reasoned that this more extreme condition might better capture potential disdain toward a person who is similar to the participant’s ideal self.

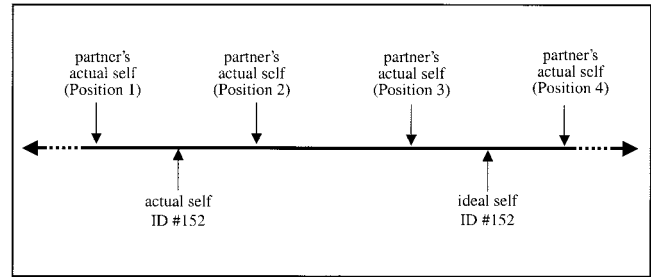


Figure 1. Representation of the between-subjects manipulation of the position of the partner’s actual self used in Experiments 1 and 2. The participant’s actual self and ideal self are displayed below the dimension, and the partner’s actual self is displayed above the dimension. In Experiment 1, Positions 1 and 2 were separated by 16 mm, Positions 2 and 3 were separated by 34 mm, and Positions 3 and 4 were separated by 16 mm. The positions were equally separated by 40 mm in Experiment 2, and Position 1 was excluded. #152 = the participant’s identification (ID) number. Each participant had a unique ID number; “#152” in this figure is merely an example of Session 2 computer output.

### Method

#### Participants and Design

Two hundred six students (61 men, 145 women) at the University of North Carolina at Chapel Hill participated in groups of 6–8 in a two-session experiment titled “Describing Yourself” for partial credit in an introductory psychology course. We used a four-group between-subjects design and manipulated the perceived similarity of an alleged partner’s actual self to the participant’s ideal self. We subsequently assessed the participant’s general evaluation of the partner.

#### Procedure

During the first session, participants learned that the objective of the initial session was to gather information about their actual self (i.e., “who you actually are”) and ideal self (i.e., “who you would like to be”). Participants rated their actual and ideal selves on thirty 7-point semantic-differential scales (e.g., talkative–reserved).

A week later, participants returned for the second session. Following the general procedure of Wetzel and Insko (1982), the experimenter explained that the purpose of the experiment was to provide a final round of tests for a computer program designed to reveal “the major dimension you use to find meaning in who you are.” The participants’ responses from the first session were allegedly entered into the program. Participants were informed that their task was to label the dimension and that if the program was accurate, their labeling of the dimension would match the label generated by the program. Participants were assured that past studies yielded 92% agreement between the program and the participant’s self-generated label. To facilitate the labeling task, participants were informed that they had been paired with a partner whom they would get to know through an informal interview and two problem-solving tasks. The experimenter mentioned that the information gathered about self and partner would be useful for labeling the self-defining dimension.

Before meeting the alleged partner, each participant received a bogus computer printout that displayed the positions of his or her actual and ideal selves and the partner’s actual self on the yet-to-be-labeled self-defining dimension. This printout was used to manipulate the similarity of the partner’s actual self to the participant’s ideal self (see Figure 1). Written instructions explained that the horizontal line on the printout represented

the self-defining dimension and that the line formed a continuum that when read from left to right ranged from lower degrees to higher degrees of the dimension. The participant's actual self was positioned to the left end of the continuum and his or her ideal self was positioned to the right end of the continuum. We manipulated, as a four-level between-subjects factor, the position of the partner's actual self along the self-defining dimension: The partner's actual self was located 8 mm to the left of the participant's actual self (Position 1), 8 mm to the right of the participant's actual self (Position 2), 8 mm to the left of the participant's ideal self (Position 3), or 8 mm to the right of the participant's ideal self (Position 4). In other words, we varied the distance of the partner's actual self from the participant's ideal self, and across conditions the partner's actual self approached and eventually surpassed the participant's ideal self. Because of the spacing between the participant's actual and ideal selves, the intervals among the four positions of the partner's actual self were not equal. The first and second positions were separated by 16 mm, the second and third positions were separated by 34 mm, and the third and fourth positions were separated by 16 mm. Thus, the positioning of the partner's actual self constituted a four-level between-subjects quantitative factor.

After participants had a few moments to locate their actual self, ideal self, and their partner's actual self on the printout, the experimenter distributed the dependent measures and announced that he or she was interested in preinteraction impressions of the partner. Participants completed the measures and were debriefed and thanked for their participation.

### Dependent Measures

*General attraction.* Participants rated how much they liked their partner. Participants responded on a 13-point scale anchored at 1 (*not at all*) and 13 (*very much*).

*Coded threat.* Participants were prompted to write down their thoughts about the impending interaction with their partner. The written responses of 6 participants are missing. Two judges who were blind to condition coded the available responses from 200 participants for mentions of threat (yes = 1, no = 0). The judges identified 37 instances of threat, and interjudge agreement was modest (Cohen's kappa = .69).

## Results

### Attraction

To examine the association between general evaluative attraction and similarity to the ideal self, we entered the attraction rating (i.e., liking) into a one-factor analysis of variance (ANOVA) for the effect of position. The omnibus effect of position was significant,  $F(3, 202) = 7.05, p < .01, \eta^2 = .09$ . The mean attraction ratings are displayed in Table 1. It appears that the attraction rating followed an inverted quadratic pattern such that attraction increased as the partner's actual self approached the participant's ideal self (i.e., Positions 1 to 3) and then decreased as the partner's actual self surpassed the participant's ideal self (i.e., Position 4). To more formally test this pattern, we decomposed the position

effect with three polynomial contrasts that tested for linear, quadratic, and cubic trends, respectively.<sup>3</sup> Neither the linear trend,  $F(1, 202) = 0.72, p = .40, \eta^2 < .01$ , nor the cubic trend,  $F(1, 202) = 0.78, p = .38, \eta^2 < .01$ , were significant. However, the quadratic trend was significant,  $F(1, 202) = 19.64, p < .01, \eta^2 = .08$ , and confirmed that attraction to the partner increased as the partner's actual self approached the participant's ideal self and decreased as the partner's actual self surpassed the participant's ideal self.

### Coded Threat

We averaged the judges' 0–1 coding of threat for the available 200 responses and entered the average threat score into a one-factor ANOVA for position. The omnibus effect of position was significant,  $F(3, 196) = 8.22, p < .01, \eta^2 = .11$ . The mean levels of coded threat across Positions 1–4 were 0.01, 0.09, 0.22, and 0.29. Polynomial contrasts of the four-level position effect revealed a significant linear trend,  $F(1, 196) = 24.61, p < .01, \eta^2 = .11$ , and nonsignificant quadratic,  $F(1, 196) = 0.01, p = .94, \eta^2 < .01$ , and cubic,  $F(1, 196) = 0.04, p = .85, \eta^2 < .01$ , trends (see Footnote 3). The significant linear trend indicates that mentions of threat increased linearly as the partner's actual self approached and surpassed the participant's ideal self.<sup>4</sup>

## Discussion

The current experiment partially replicated the results of previous research (LaPrelle et al., 1990; Wetzel & Insko, 1982) in that participants expressed increasing evaluative attraction for their partner as the partner became more similar to the participant's ideal self. However, the addition of a more extreme condition in which the partner surpassed the participant's ideal self revealed a decrease in evaluative attraction. Such a pattern is consistent with our reasoning that similarity to the ideal self does not invariably increase attraction but instead elicits competing responses when comparison with a person who emulates one's ideals poses a threat to self-evaluation. Of course, those competing responses could not be directly observed in that we did not include separate assessments of cognitive and affective attraction. Instead, those competing responses could only be inferred through the quadratic pattern of the general evaluative measure of liking (this is an issue we addressed in Experiment 2).

<sup>3</sup> The unequal spacing across levels of the position variable prohibited the use of the standard polynomial contrast weights for a four-level quantitative factor. Consequently, we obtained the appropriate weights with the polynomial option of the repeated statement of SAS (Release 8.2). Those weights for Positions 1, 2, 3, and 4 are  $-0.6286, -0.3238, 0.3238,$  and  $0.6286$  for the linear trend;  $0.50, -0.50, -0.50,$  and  $0.50$  for the quadratic trend; and  $-0.3238, 0.6286, -0.6286,$  and  $0.3238$  for the cubic trend. Keppel (1982, pp. 629–633) provided formulas for computing weights proportionally equivalent to those generated by SAS.

<sup>4</sup> We repeated the previously reported analyses and factorially crossed the position factor with a coding of participants' sex. The Position  $\times$  Sex interaction was nonsignificant for both the attraction and threat data (both  $F_s < 1.00$ ) and suggests that the effects of position were consistent across men and women.

Table 1  
Mean Evaluative Attraction as a Function of Position

Position	Attraction
1	7.53
2	8.57
3	8.74
4	7.02

Also consistent with our theorizing was the linear increase in coded threat. Participants were more likely to mention self-evaluative threat in their open-ended statements as the partner became more similar to the participant's ideal self. However, mediation analyses (not reported) did not support the possibility that the linear increase in threat mediated the quadratic pattern of evaluative attraction. Failure to detect mediation could be attributed to our measure of threat. Rather than having participants rate their feelings of threat, we had to infer threat through participants' written descriptions of their expectations for the impending interaction with their partner. Possibly, this is a relatively insensitive measure. Additionally, our failure to detect mediation could be attributed to the lack of separate assessments of affective and cognitive attraction. If the threat to self-evaluation posed by social comparison differentially affects the cognitive and affective reactions to the target person, our measure of general evaluative attraction might not fully capture the differential associations between threat and the cognitive and affective reactions.

In any event, the quadratic pattern of evaluative attraction is consistent with the possibility that persons are not invariantly attracted to others who emulate the ideal self and instead experience conflicting reactions to those ideal others. It is worth mentioning that we replicated the quadratic association between evaluative attraction and similarity to the ideal self in an additional experiment. In the additional experiment, we (a) equally spaced the intervals among the four positions by 40 mm, (b) made the dimension of self–other comparison more relevant by describing it as being predictive of career success, and (c) attempted to minimize threat by informing participants that they would not meet their partner. Rating of general attraction followed a significant quadratic pattern across the four levels of the position factor such that evaluative attraction increased and then decreased as the partner approached and then surpassed the participants' ideal self ( $M$ s for Positions 1–4 were 7.28, 8.20, 8.88, and 8.16). This pattern was not moderated by sex nor was it mediated by a rating of felt threat—suggesting that if threat is responsible for the decrease in attraction, it may differentially affect the cognitive and affective components. It is noteworthy, however, that the decrease in attraction that occurred as the partner surpassed the participants' ideal self appears descriptively less dramatic than the decrease that occurred in Experiment 1, in which participants anticipated meeting their partner. Such a descriptive comparison circumstantially suggests that the anticipation of meeting the partner (i.e., self–other closeness) potentially moderates the decrease in evaluative attraction, which occurred as the partner surpassed the participant's ideal self. We conducted an additional experiment to assess the potentially conflicting cognitive and affective reactions and explore the conditions under which those reactions are most discrepant.

## Experiment 2

The previous experiment manipulated the perceived similarity between the participant's partner and the participant's ideal self on a self-relevant dimension and, in the most extreme condition, the partner exceeded the participant's ideal self. A quadratic trend for our measure of evaluative attraction indicated that attraction increased as the partner became more similar to the participant's

ideal self and then decreased as the partner surpassed the participant's ideal self. We interpret the quadratic pattern as being consistent with our hypothesis that social comparison with a person who emulates a perceiver's ideal self activates conflicting reactions. On the one hand, such an ideal person is desirable and impressive. On the other hand, comparison with such a person poses a potential threat to self-evaluation in that the perceiver pales in comparison with the ideal other.

In the current experiment, we directly tested whether persons experienced conflicting reactions when they compared themselves with a person who was similar to their ideal self by separately assessing cognitive and affective components of attraction. Furthermore, we used a factorial design to manipulate the context in which the cognitive and affective responses should be maximally discrepant. According to SEM, upward social comparison is maximally threatening to self-evaluation when the comparison person is a close other and the dimension of comparison is self-relevant. Consequently, we crossed the manipulation of perceived similarity of the other to the participant's ideal self that we used in the previous experiment (i.e., *position*) with independent manipulations of closeness between self and other and the meaningfulness (i.e., *relevance*) of the dimension of comparison. We manipulated interpersonal closeness by varying whether participants anticipated meeting their alleged partner. We manipulated the meaningfulness of the comparison dimension (i.e., *cognitive style*) by varying whether that dimension was described as being related or unrelated to career success. We hypothesized that the patterns of cognitive and affective attraction across levels of the position factor (i.e., as the partner approaches and surpasses the participant's ideal self) should be maximally discrepant when participants anticipate meeting their partner and the dimension of comparison is meaningful. Furthermore, the cognitive reaction (i.e., beliefs about the partner) should reflect attraction and the affective reaction (i.e., feelings toward the partner) should reflect disdain.

## Method

### Participants and Design

Three hundred thirty participants (81 men, 248 women, and 1 who did not indicate sex) at the University of North Carolina at Chapel Hill participated in groups of 6–8 in a two-session experiment titled "Describing Yourself" for partial credit in an introductory psychology course. We used a  $2 \times 2 \times 3$  between-subjects factorial design to manipulate the meaningfulness of the dimension of comparison (high vs. low meaningfulness), whether participants anticipated interacting with their partner (yes vs. no), and the perceived similarity of the partner's actual self to the participant's ideal self. We subsequently assessed cognitive and affective attraction toward the partner and rated threat experienced by the participant.

### Procedure

In the first session, participants completed self-ratings on measures that appeared relevant to the dimension of cognitive style (i.e., the tendency to see the big picture rather than simply the details). In particular, participants rated their actual and ideal selves on 13 semantic differential scales relevant to cognitive style and completed the Sensing–Intuition items from the Myers-Briggs Type Indicator and the Openness–Intellect items from the Big Five Personality Inventory.

One week later, participants returned to the laboratory and were informed that their responses from the previous session had been entered into a computer program designed to locate a person's actual and ideal selves along the dimension of cognitive style. We manipulated the meaningfulness of the cognitive style dimension by informing participants of a fictitious *Psychology Today* article reporting that cognitive style was either unrelated to career success (low meaning) or highly predictive of career success (high meaning).

Participants were informed that the purpose of the study was to provide an additional test of whether the computer program could simultaneously map information about two persons on the cognitive style dimension, and the experimenter mentioned that past research indicated that the program was 92% accurate in simultaneously mapping information about two persons. We manipulated whether participants anticipated meeting their partner. Participants who did not anticipate meeting their partner were informed that although they would receive information about their partner's cognitive style, they would not meet their partner. Participants who anticipated meeting their partner were informed that in addition to receiving information about their partner's cognitive style, they and their partner would interact for 15 min in an adjoining room.

All participants then received the computer output that located their actual self, ideal self, and their partner's actual self along the cognitive style dimension. We varied the position of the partner's actual self across three rather than four positions to minimize the number of participants required by a factorial design involving three between-subjects factors. We eliminated Position 1 (i.e., partner's actual self to the left of the participant's actual self) and equally spaced the intervals among Positions 2, 3, and 4 (each position was separated by 40 mm). After participants had a few moments to locate their actual self, ideal self, and their partner's actual self on the printout, they completed a packet of dependent measures. After completing the measures, participants were debriefed and thanked for their participation.

### Dependent Measures

**Cognitive and affective attraction.** Participants responded to five items designed to assess the cognitive component of attraction and five items designed to assess the affective component of attraction. For the cognitive attraction items, participants rated on 13-point scales (1 = *not at all*, 13 = *very much*) the extent to which they believed their partner was talented, capable, gifted, able, and competent (e.g., "How talented do you believe your partner is?"). For the affective items, participants indicated how they felt about their partner on 13-point semantic-differential scales anchored by *unpleasant-pleasant*, *cold-warm*, *negative-positive*, *unfriendly-friendly*, and *distant-close* (e.g., "How distant/close do you feel to your partner?"). The order of the cognitive and affective measures was counterbalanced across participants.

**Rated threat.** Following the attraction measures, participants indicated their feelings of threat instigated by their partner on five items: (a) "I'm concerned what this person might think of me"; (b) "I wonder how others would regard me if I were to spend time with this person?"; (c) "I would feel smaller comparing myself to this person"; (d) "I feel as though comparing myself to this person might lessen my sense of self-worth"; and (e) "I am concerned that I might feel inadequate comparing myself to this person." Participants responded to each item on a 9-point scale (1 = *not at all*, 9 = *very much*).

**Meaningfulness of comparison dimension.** Participants responded to three items designed to check the manipulation of the meaningfulness of the dimension on which self and partner were compared: (a) "How meaningful is the cognitive-style dimension?"; (b) "To what extent do you feel that cognitive style is a central dimension to you?"; and (c) "How meaningful is cognitive style as defined in this experiment?" Participants rated each item on a 9-point scale (1 = *not at all*, 9 = *very much*).

## Results

### Meaningfulness Manipulation Check

We averaged responses to the three meaningfulness items ( $\alpha = .83$ ) and entered the index into a 2 (anticipated meeting: no, yes)  $\times$  2 (meaningfulness of dimension: low, high)  $\times$  3 (position of partner's actual self) ANOVA. Consistent with the intended manipulation, only the meaningfulness main effect was significant,  $F(1, 318) = 12.37, p < .01$ . Participants in the high meaningfulness condition rated the dimension of cognitive style as being more meaningful ( $M = 5.00$ ) than did participants in the low meaningfulness condition ( $M = 4.35$ ).

### Cognitive and Affective Attraction

To determine whether the cognitive and affective items tapped separate constructs, we conducted an exploratory factor analysis using a principal-axis extraction followed by an oblique (i.e., promax) rotation. All criteria for determining the number of factors to retain (i.e., eigenvalues, scree plot, and proportion of variance explained) unambiguously indicated the retention of two factors. Table 2 contains the factor loadings from the rotated factor-pattern matrix and factor-structure matrix. The factor-pattern matrix, which reflects the variance in each item that is uniquely contributed by each factor, indicates that the five cognitive attraction items have strong loadings on Factor 1 and near zero loadings on Factor 2, and the five affective attraction items have strong loadings on Factor 2 and near zero loadings on Factor 1. The factor-structure matrix, which does not control for the variability in each item that is shared between factors, also suggests that cognitive and affective items differentially load on the factors and reflect the moderate correlation between the factors ( $r = .50$ ). As intended,

Table 2  
Factor Loadings for the Cognitive and Affective Items From the Rotated Factor Pattern Matrix and Factor Structure Matrix

Item	Factor Pattern		Factor Structure	
	Factor 1	Factor 2	Factor 1	Factor 2
Intended construct: Cognitive				
Talented	.80	.00	.80	.40
Capable	.92	.03	.94	.49
Gifted	.82	.06	.86	.48
Able	.91	.01	.92	.46
Competent	.86	.04	.88	.47
Intended construct: Affective				
Unpleasant-pleasant	.04	.87	.48	.90
Cold-warm	.00	.91	.46	.91
Negative-positive	.03	.89	.48	.91
Unfriendly-friendly	-.02	.86	.41	.85
Distant-close	.09	.44	.32	.49

*Note.* The factors were extracted with the principal-factor method and rotated with the promax rotation. The interfactor correlation is .50.

the cognitive and affective items tap separate, yet correlated, constructs.<sup>5</sup>

We averaged responses to the cognitive items and affective items, respectively, to form a cognitive attraction index ( $\alpha = .95$ ) and an affective attraction index ( $\alpha = .90$ ). We entered the attraction indices into a 2 (meeting)  $\times$  2 (meaningfulness)  $\times$  3 (position)  $\times$  2 (attraction) mixed ANOVA, with attraction serving as a within-subjects factor that distinguishes between cognitive and affective attraction. The results revealed a significant Position  $\times$  Attraction two-way interaction,  $F(2, 318) = 16.39, p < .01, \eta^2 = .09$ , and a significant Meeting  $\times$  Meaningfulness  $\times$  Position  $\times$  Attraction four-way interaction,  $F(2, 318) = 3.08, p < .05, \eta^2 = .02$ .

The two-way interaction indicates that cognitive attraction increased linearly and affective attraction decreased linearly as the partner's actual self approached and surpassed the participant's ideal self across levels of position. In particular, we decomposed the Position  $\times$  Attraction interaction with two orthogonal-polynomial interaction contrasts that tested whether the linear and quadratic patterns across levels of position varied as a function of cognitive versus affective attraction: Linear Position  $\times$  Attraction and Quadratic Position  $\times$  Attraction. Table 3 contains the means for the two-way interaction. The quadratic trend did not vary as a function of cognitive versus affective attraction,  $F(1, 318) = 1.18, p = .28$ . Furthermore, the quadratic trend across levels of position was not significant for the cognitive rating,  $F(1, 318) = 0.43, p = .51$ , or the affective rating,  $F(1, 318) = 0.16, p = .69$ . On the other hand, the linear trend for the cognitive rating was significantly different than the linear trend for the affective rating,  $F(1, 318) = 31.30, p < .01$ . As the partner's actual self approached and surpassed the participant's ideal self across levels of position, ratings of cognitive attraction increased linearly,  $F(1, 318) = 11.46, p < .01, \eta^2 = .03$ , and ratings of affective attraction decreased linearly,  $F(1, 318) = 4.17, p < .05, \eta^2 = .01$ .

The four-way interaction indicated that the relative difference in the linear increase in cognitive attraction and linear decrease in affective attraction across levels of position was most pronounced when the dimension on which the participant and partner were compared (i.e., cognitive style) was described as being highly meaningful and participants anticipated meeting their partner. Table 4 contains the means for the four-way interaction. We decomposed the Meeting  $\times$  Meaningfulness  $\times$  Position  $\times$  Attraction interaction with interaction contrasts that tested whether the linear and quadratic patterns across position varied as a function of Meeting  $\times$  Meaningfulness  $\times$  Attraction: Linear  $\times$  Meeting  $\times$  Meaningfulness  $\times$  Attraction and Quadratic  $\times$  Meeting  $\times$  Meaningfulness  $\times$  Attraction.

Table 3  
Mean Cognitive and Affective Attraction as a Function of Position

Position	Attraction	
	Cognitive	Affective
2	9.02	8.35
3	9.29	8.16
4	9.82	7.78

Table 4  
Mean Cognitive and Affective Attraction as a Function of Anticipated Meeting, Meaningfulness of Dimension, and Position of Partner's Actual Self

Position	Attraction	
	Cognitive	Affective
Low meaningfulness		
No anticipated meeting		
2	9.21	8.21
3	9.10	8.08
4	9.92	7.37
Anticipated meeting		
2	8.84	8.31
3	9.81	8.43
4	9.75	8.36
High meaningfulness		
No anticipated meeting		
2	8.73	7.86
3	9.28	8.26
4	9.23	7.47
Anticipated meeting		
2	9.30	9.04
3	8.97	7.88
4	10.39	7.90

The interaction contrast of the quadratic trend indicated that it did not vary significantly across the other factors,  $F(1, 318) = 1.83, p < .18$ . Furthermore, the overall quadratic trend (i.e., collapsing across the other factors) was not significant,  $F(1, 318) = 0.01, p < .93$ . On the other hand, the interaction contrast of the linear pattern was significant and indicated that the linear trend varied significantly as a function of meeting, meaningfulness, and cognitive versus affective attraction,  $F(1, 318) = 4.20, p < .05$ . We further decomposed the interaction pattern for the linear trend by testing the Linear  $\times$  Meeting  $\times$  Attraction interaction contrast in levels of meaningfulness. The linear trend did not vary significantly as a function of meeting and attraction when meaningfulness was low,  $F(1, 318) = 1.04, p < .31$ , but did vary when meaningfulness was high,  $F(1, 318) = 18.49, p < .01$ . When meaningfulness was high, the linear trends of cognitive and affective attraction were marginally different (i.e., Linear  $\times$  Attraction) when participants did not anticipate meeting their partner,  $F(1,$

<sup>5</sup> A reviewer questioned whether a confirmatory factor analysis (CFA) would have been more appropriate than an exploratory factor analysis (EFA). Consequently, we conducted a CFA to determine what our conclusion would have been had we not originally conducted the EFA. We specified a two-factor model (with maximum-likelihood estimation) in which the five cognitive attraction items were indicators of one factor (i.e., latent construct of cognitive attraction) and the five affective attraction items were indicators of the other factor (i.e., latent construct of affective attraction). The two-factor model provided an acceptable fit: The fit indices were adequate (comparative fit index = .97, nonnormed fit index = .96, and root-mean-square error of approximation = .085), all factor loadings were significant, and the distribution of the normalized residuals was symmetrical and centered on zero.

318) = 3.44,  $p < .07$ , but were significantly different when participants anticipated meeting their partner,  $F(1, 318) = 16.78$ ,  $p < .01$ . In this latter condition, in which meaningfulness was high and participants anticipated meeting their partner, there was a linear increase in cognitive attraction,  $F(1, 318) = 4.34$ ,  $p < .04$ ,  $\eta^2 = .01$ , and a marginal linear decrease in affective attraction,  $F(1, 318) = 3.34$ ,  $p < .07$ ,  $\eta^2 = .01$ , as the partner approached and surpassed the participant's ideal self. In summary, the discrepancy between the linear increase in cognitive attraction and linear decrease in affective attraction that occurred as the partner's actual self approached and surpassed the participant's ideal self was most pronounced when the dimension on which the participant and partner were compared was highly meaningful and participants anticipated meeting their partner.<sup>6</sup>

### Rated Threat

We averaged responses to the five threat items ( $\alpha = .87$ ) and entered the threat index into a 2 (meeting)  $\times$  2 (meaningfulness)  $\times$  3 (position) ANOVA. There was a significant Meeting  $\times$  Meaningfulness  $\times$  Position interaction,  $F(2, 318) = 3.13$ ,  $p < .05$ ,  $\eta^2 = .02$ , that paralleled the linear pattern of affective attraction. Table 5 contains the means for reported threat. We decomposed the three-way interaction with interaction contrasts that tested whether the linear and quadratic patterns across position varied as a function of Meeting  $\times$  Meaningfulness: Linear  $\times$  Meeting  $\times$  Meaningfulness and Quadratic  $\times$  Meeting  $\times$  Meaningfulness. The quadratic trend did not vary significantly across levels of meeting and meaningfulness,  $F(1, 318) = 1.50$ ,  $p = .22$ . Likewise, the overall quadratic trend (i.e., collapsing across all factors) was not significant,  $F(1, 318) = 0.07$ ,  $p = .79$ . On the other hand, the interaction contrast for the linear trend indicated that the linear pattern of rated threat across levels of position varied significantly as a function of Meeting  $\times$  Meaningfulness,  $F(1, 318) = 4.63$ ,  $p < .05$ . Simple effect tests of the linear trend across levels of position within the four conditions of meeting and meaningfulness revealed that the linear trend for rated threat was significant only in the condition in which the dimension of comparison was highly meaningful and participants anticipated meeting their partner,  $F(1,$

318) = 4.55,  $p < .05$ ,  $\eta^2 = .01$ . In this condition, rated threat linearly increased as the partner's actual self approached and surpassed the participant's ideal self. In summary, the Meeting  $\times$  Meaningfulness  $\times$  Position effect on rated threat indicates that the linear increase in rated threat that occurred as the partner's actual self approached and surpassed the participant's ideal self was most pronounced with anticipated meeting and a highly meaningful dimension of comparison.<sup>7</sup>

### Does Threat Mediate the Opposing Linear Patterns of Affective and Cognitive Attraction?

Analyses of the cognitive and affective attraction indexes revealed a significant Linear Position  $\times$  Meeting  $\times$  Meaningfulness  $\times$  Attraction effect, which indicated that the discrepancy between the linear increase in cognitive attraction and linear decrease in affective attraction across levels of position was most pronounced when participants anticipated meeting their partner and the dimension of comparison was highly meaningful. That pattern was paralleled by a Linear Position  $\times$  Meeting  $\times$  Meaningfulness effect on rated threat, such that the linear increase in threat across levels of position was most pronounced when participants anticipated meeting their partner and the dimension of comparison was highly meaningful. Such parallel patterns suggest that the discrepancy between the linear patterns of cognitive and affective attraction is mediated by the threat evoked by potential comparison with a person who surpasses one's ideals (e.g., "Compared to my partner, I'm a real *schlemiel!*").

We tested this mediation hypothesis with the  $z$ -prime method recommended by MacKinnon, Lockwood, Hoffman, West, and

Table 5  
Mean Rated Threat as a Function of Anticipated Meeting, Meaningfulness of Dimension, and Position of Partner's Actual Self

Position	Meaningfulness	
	Low	High
No anticipated meeting		
2	2.54	3.43
3	2.62	3.40
4	3.21	3.00
Anticipated meeting		
2	2.74	2.98
3	3.03	3.19
4	2.89	4.12

<sup>6</sup> We repeated the previous analysis and factorially crossed attraction, meeting, meaningfulness, and position with a coding of participants' sex. There was a significant Meeting  $\times$  Meaningfulness  $\times$  Position  $\times$  Attraction  $\times$  Sex interaction,  $F(2, 305) = 3.89$ ,  $p < .05$ . This five-way interaction, however, does not substantially change the conclusions derived from the previously reported four-way interaction. In particular, we decomposed the five-way interaction with a series of interaction contrasts that tested whether the contrasts that we used to decompose the four-way interaction varied as a function of sex. The five-way interaction indicated that the previously reported marginal ( $p < .07$ ) Linear  $\times$  Attraction simple interaction in the condition of high meaning and no meeting significantly varied as a function of sex. When the dimension of comparison was meaningful and the participant did not anticipate meeting his or her partner, the difference between the linear increase in cognitive attraction and linear decrease in affective attraction was stronger for women than men. However, those latter simple linear trends in cognitive and affective attraction were not significant for either men or women, and the simple interaction reflects an uninteresting difference in the relative difference between nonsignificant trends. More importantly, however, sex did not moderate the degree to which the linear increase in cognitive attraction deviated from the linear decrease in affective attraction in the condition of high meaning and anticipated meeting (i.e., the social context in which upward comparison poses a threat to self-evaluation and, consequently, was predicted to generate opposing cognitive and affective reactions toward the partner).

<sup>7</sup> The Meeting  $\times$  Meaningfulness  $\times$  Position interaction on rated threat was not moderated by sex—that is, for Meeting  $\times$  Meaningfulness  $\times$  Position  $\times$  Sex,  $F(2, 305) = 0.04$ ,  $p = .96$ .

Sheets (2002).<sup>8</sup> As required by the  $z$ -prime method for establishing mediation, (a) the Linear Position  $\times$  Meeting  $\times$  Meaningfulness effect significantly predicted threat ( $B = 2.084$ ,  $SE = 0.968$ ,  $p < .05$ ), (b) threat significantly predicted the difference between cognitive and affective attraction ( $B = 0.293$ ,  $SE = 0.055$ ,  $p < .01$ ) when the Linear Position  $\times$  Meeting  $\times$  Meaningfulness effect was controlled, and (c) the Linear Position  $\times$  Meeting  $\times$  Meaningfulness effect on the difference between affective and cognitive attraction was significantly reduced ( $z' = 1.99$ ,  $p < .05$ ) when threat was controlled. These tests are consistent with mediation and suggest that the linear increase in cognitive attraction became more discrepant from the linear decrease in affective attraction to the extent that participants anticipated meeting their partner, and the dimension of comparison was meaningful because of a similarly intensifying linear increase in threat.

To further trace this mediation process, we examined whether threat accounted for the simple linear trends of affective and/or cognitive attraction in the condition in which those trends were most discrepant (i.e., anticipated meeting and a highly meaningful dimension of comparison). In regard to affective attraction with anticipated meeting and a highly meaningful dimension of comparison, (a) the linear component of the position manipulation significantly increased threat ( $B = 1.136$ ,  $SE = 0.532$ ,  $p < .05$ ), (b) threat significantly decreased affective attraction ( $B = -0.205$ ,  $SE = 0.065$ ,  $p < .01$ ) when the linear component of the position manipulation was controlled, and (c) the effect of the linear component of the position manipulation was significantly reduced ( $z' = -1.768$ ,  $p < .05$ ) when threat was controlled. These tests suggest that the linear decrease in affective attraction that occurred when the partner's actual self approached and surpassed the participants' ideal self with anticipated meeting, and a highly meaningful dimension of comparison was produced by a linear increase in threat. Similar tests suggested that threat did not have a parallel effect on cognitive attraction in that threat did not predict cognitive attraction ( $B = .088$ ,  $SE = .055$ ,  $p > .05$ ) when the linear component of the position manipulation was controlled.

In summary, these mediation analyses are consistent with the possibility that the discrepancy between the linear increase in cognitive attraction and linear decrease in affective attraction was mediated by self-evaluative threat generated by social comparison with the ideal other. Comparison with the partner increased threat as the partner became more similar to and surpassed the participants' ideal self, particularly when the dimension of comparison was meaningful and participants anticipated meeting their partner. This increased threat, in turn, may have decreased affective attraction toward the partner.

### Discussion

We separately assessed the cognitive and affective components of attraction and manipulated the conditions under which those components should be maximally discrepant. The SEM (Tesser, 1988) and subsequent research (Lockwood & Kunda, 1999) have indicated that upward social comparison decreases self-evaluation and instigates responses that assuage the self-threat (e.g., distancing self from other, disparaging the dimension of comparison) to the extent that the superior other is interpersonally close, the dimension of comparison is self-relevant, and the ideal self is

salient. Consistent with the hypothesis that similarity to the ideal self generates opposing reactions to the ideal other, cognitive attraction linearly increased and affective attraction linearly decreased as the partner became more similar to and surpassed the participant's ideal self. Furthermore, the decrease in affective attraction was most discrepant from the increase in cognitive attraction when the dimension of comparison was meaningful (i.e., self-relevant) and participants anticipated meeting their partner. In terms of cognition, participants admired the ideal other in that they believed that their partner was a gifted and talented individual to the extent that the partner was similar to their ideal self. However, the participants' affect was negatively charged, and they felt relatively cold and distant toward the ideal other.

The measure of rated threat lends further credence to the possibility that the affective reaction to the ideal other was driven by the negative consequences of upward social comparison as detailed by the SEM. Participants' reports of threat increased as their partner became more similar to their ideal self, and this increase in threat was most pronounced when the dimension of comparison was meaningful and participants anticipated meeting their partner. Such a linear increase in threat directly tracked the linear decrease in affective attraction. Mediation analyses were consistent with the possibility that threat mediated the difference between the discrepant patterns of cognitive and affective attraction by decreasing affective attraction toward the ideal other. In other words, comparison with the partner posed a threat to self-evaluation to the extent that the partner was similar to the participants' ideal self, the dimension of comparison was meaningful, and participants anticipated meeting their partner. This threat in turn generated a negatively charged affective orientation toward the partner. These data provide relatively dramatic evidence that similarity to the ideal self generates opposing cognitive and affective reactions.

### General Discussion

Two experiments yielded consistent support for the hypothesis that similarity to the ideal self does not invariantly increase attraction but instead elicits opposing reactions to the ideal other. In the first experiment, we partially replicated previous similarity-attraction research by assessing evaluative attraction (i.e., liking).

<sup>8</sup> MacKinnon et al. (2002) empirically compared 14 methods for establishing mediation, including Baron and Kenny's (1986) method, and concluded that the  $z$ -prime method was superior in terms of accurately maintaining the Type I error rate and maximizing statistical power. Mediation is established with the  $z$ -prime technique by demonstrating that the independent variable predicts the mediator, the mediator predicts the outcome variable when the independent variable is controlled, and the effect of the independent variable on the outcome variable is significantly reduced when the mediator is controlled. The latter requirement is tested with the following Sobel formula using a modified critical value:  $z' = ab / \sqrt{b^2 s_a^2 + a^2 s_b^2}$ . In the formula,  $a$  represents the unstandardized effect of the independent variable on the mediator,  $b$  represents the unstandardized effect of the mediator on the dependent variable when the independent variable is controlled, and  $s_a$  and  $s_b$  represent the standard errors of  $a$  and  $b$ , respectively. Because the product of  $ab$  is not normally distributed, the sampling distribution of  $z'$  is not well represented by the standard normal distribution, and the appropriate critical value is 0.97, not 1.96, for  $\alpha = .05$ .

We extended the past research with the addition of a more extreme similarity condition in which the partner surpassed the participant's ideal self. The experiment revealed a quadratic association between similarity to the ideal self and evaluative attraction: Evaluative attraction increased as the partner became more similar to the participant's ideal self and subsequently decreased as the partner surpassed the participant's ideal self.

In the second experiment, we decomposed evaluative attraction into its cognitive and affective components with separate assessments of those components. Orthogonal to our similarity manipulation, we manipulated variables that intensify social comparison (i.e., anticipated meeting, or closeness, and the meaningfulness, or relevance, of the comparison dimension). The cognitive and affective reactions followed different trajectories as a function of similarity to the ideal self, anticipated meeting, and meaningfulness of the comparison dimension. Cognitive attraction increased linearly and affective attraction decreased linearly as the partner became more similar to and surpassed the participant's ideal self. Furthermore, those patterns were most discrepant when social comparison was most intense (i.e., a meaningful dimension of comparison and anticipated meeting).

Why does similarity to the ideal self generate opposing cognitive and affective reactions? On the one hand, the ideal other is desirable: He or she possesses valued traits, abilities, and beliefs and is, quite simply, ideal. The cognitive component of attraction likely tracks this desirable element of the ideal other. On the other hand, comparison with the ideal other is potentially devastating. One cannot measure up to the ideal other, and being outshined on self-defining dimensions is painful. The pattern of responses to the measure of threat included in Experiment 2 certainly suggests that the affective component of attraction reflects the pain and displeasure of social comparison with the ideal other.

Why did Experiment 1 reveal a quadratic association between similarity and attraction, whereas the associations in Experiment 2 were linear? We suggest that the different patterns reflect discrepancies in the dependent measures used across the experiments. In Experiment 1, we used a measure of evaluative attraction similar to the measures used in previous similarity-attraction research (e.g., Wetzel & Insko, 1982). In Experiment 2, however, we differentiated between the cognitive and affective components that underlie the general evaluation (e.g., Breckler, 1984). Those components have opposing and decidedly linear patterns. The general evaluation, as assessed in Experiment 1, is formed by some combination of the cognitive and affective components. Indeed the attitudes literature abounds with articulations of how affect and cognition (and behavior) influence evaluation (e.g., Abelson, Kinder, Peters, & Fiske, 1982; Fishbein & Ajzen, 1975; Forgas & Bower, 1987; Kaplan, 1991; Millar & Tesser, 1986, 1989; Staats & Staats, 1958; Zajonc, 1980, 1984).

We make no pretense of being able to identify with certainty the specific process through which the cognitive and affective components combined to influence evaluative attraction. Instead, we offer this observation: The quadratic pattern of evaluative attraction suggests that the linear increase in the cognitive component more strongly influenced evaluative attraction as the partner became more similar to the participant's ideal self (i.e., Positions 1–3). However, the balance of power shifted and the linear decrease in the affective component became more influential as the

partner surpassed the participant's ideal self (i.e., Position 3–4). The combinatorial process is likely more complicated than a simple averaging of the affective and cognitive components—otherwise, the pattern of evaluative attraction would have been relatively flat and not quadratic.

One possibility is that as implied by Sears's (1983) notion of the person-positivity bias, people value other people and, unless given some justification, are reluctant to express dislike for them. Still another consideration is that participants may assume that expressed dislike for an ideal other would create an unflattering impression of petty jealousy. Perhaps the pain of comparison with an individual who surpasses one's ideals provides the justification necessary to enable negatively charged feelings to override positive beliefs in the expression of attitudes. Of course, these explanations assume that persons are, to an extent, willfully monitoring or regulating the contribution of their feelings to their evaluative response, when it is quite possible that the combinatorial process functions in the absence of conscious awareness.

### *Similarity-Attraction or Dissimilarity-Repulsion*

Reminiscent of Rosenbaum's (1986) repulsion hypothesis, some readers might question whether the patterns of attraction detected in the current research were driven by similarity or dissimilarity between the participant and the alleged partner. Rosenbaum reinterpreted the traditional linear association between similarity and attraction as reflecting the effect of dissimilarity on repulsion rather than the effect of similarity on liking. Rosenbaum extended the bogus other paradigm (Byrne, 1971) with the addition of a control condition in which participants received no information about the attitudes of the alleged other. Participants expressed no evaluative preference between a similar other and a person for whom they received no attitudinal information. Participants, however, expressed significantly more liking for both of the latter persons (similar and no information) than for a person with whom they allegedly shared dissimilar attitudes. Rosenbaum argued that such patterns indicate that dissimilarity generates repulsion and that similarity is a relatively neutral psychological state that has no effect on attraction. Byrne, Clore, and Smeaton (1986), however, replied that the null difference between the similarity and no-information control condition was an artifact of the false-consensus effect (e.g., Ross, Greene, & House, 1977), such that participants in the control condition assumed that the alleged other held attitudes similar to their own—an argument empirically supported by Tan and Singh (1995).

Assuming, for the moment, that dissimilarity degrades attraction, we ask the question, dissimilarity from what? To the best of our knowledge, the subsequent research differentiating similarity and dissimilarity operationalized similarity and dissimilarity in regard to attitudes (i.e., Drigotas, 1993; Hoyle, 1993; Rosenbaum, 1986; Singh & Ho, 2000; Singh & Tan, 1992; Singh & Teoh, 1999; Smeaton, Byrne, & Murnen, 1989; Tan & Singh, 1995). As we discuss above, because persons generally hold attitudes that they deem ideal, someone who is similar to the actual self is also similar to the ideal self. Once the actual-ideal distinction is made, it becomes more plausible that similarity to an ideal other would increase positive attraction. The assumption that we are attracted to attitude objects (person or nonperson) that we value is hardly

novel. We should acknowledge, however, that the present research was not designed to investigate Rosenbaum's (1986) repulsion hypothesis and thus did not include a control condition in which no information was given regarding the partner. Thus, Experiment 1, in particular, could be interpreted as indicating that repulsion increased as the partner moved in either direction from the participant's ideal self.

What about Experiment 2? Experiment 2, like Experiment 1, did not have a no-information control condition. However, the contrasting results for the cognitive and affective measures are consistent with the possibility of both attraction to the ideal partner and repulsion from the ideal partner. Thus, despite the lack of a control condition, the data suggest that people's reactions to an ideal other are not a simple function of just repulsion.

### *On Matters of External Validity*

The purpose of a controlled experiment is to address whether a given process is plausible (Mook, 1983). Nonetheless, it is appropriate to consider the external validity of the obtained results. In our experiments, we addressed whether persons experience opposing reactions (i.e., cognitive and affective) to an individual who emulates their ideal self. Inquisitive readers are likely to wonder in what types of interpersonal relationships such opposing processes function and whether they are more characteristic of some relationships (e.g., friends, lovers) than others (e.g., student-teacher, employer-employee). Of course, those questions are best addressed empirically. In the absence of relevant data, we offer our speculation.

It is worth reiterating that the discrepant cognitive and affective reactions occur in limited contexts in which social comparison threatens self-worth. Upward social comparison is likely to be threatening when the dimension of comparison is self-relevant, the person with whom one is comparing is a close other, and one's ideal self-conception is salient, thereby preventing self-improvement via an imagined self that is better or as good as the superlative other (e.g., Lockwood & Kunda, 1999; Tesser, 1988). Consequently, we suspect that the process identified in the current research would be more likely in egalitarian relationships (e.g., friends, lovers) than in hierarchically structured relationships (e.g., student-teacher, employer-employee) because, in part, self and other are apt to be closer in the former than latter type of relationship. Likewise, the superlative status of the other in the latter relationship justifies, to a degree, its hierarchical structure.

As we mentioned previously, however, there is typically a drive toward consistency among attitudinal components (i.e., affect, cognition, and behavior; Heider, 1958; Rosenberg, 1960). In the current research, we assessed those components minutes after the participant received information about his or her partner. During that brief interval, reports of cognitive and affective attraction were inconsistent (to the degree to which the dimension of comparison was relevant and the other person was psychologically close). Over an extended period of time (through which most relationships operate) those inconsistencies are likely resolved. Whether the cognitive component is brought in line with the affective component or the affective with the cognitive may be influenced, in part, by the nature of the relationship between self and other. In volun-

tary relationships, perhaps the negatively charged affect is made more consistent with the positively charged cognitions.

### *Conclusion*

The current data extend our prior understanding of the similarity-attraction association. Similarity to the ideal self does not invariantly increase attraction. Instead, similarity to the ideal self generates opposing cognitive and affective reactions to the ideal other, and those reactions are particularly discrepant in situations that intensify the self-evaluative consequences of social comparison.

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