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# Different Selves Have Different Effects: Self-Activation and Defensive Social Comparison

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*Three studies show that different forms of self-activation have differential influences on the processing of social comparison information. Activating neutral self-conceptions results in defensive processing of threatening social comparison information (Study 1). Participants maintain favorable self-evaluations in the face of upward comparison and rate the upward target of comparison negatively. Activating positive self-conceptions results in nondefensive processing of threatening social comparison information (Study 2). Participants endorse negative self-evaluations following upward comparison and rate the upward target of comparison positively. Activating negative self-conceptions maximizes defensive processing of threatening social comparison information (Study 3). Participants maintain favorable self-evaluations in the face of upward comparison and rate both upward and downward targets of comparison negatively. These results are discussed in terms of their implications for strategies to maintain self-esteem in the face of threatening comparisons.*

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**Keywords:** *self-activation; defensiveness; social comparison; self-processes; self-evaluation maintenance; self-affirmation*

**F**rom the moment Festinger postulated his theory of social comparison in 1954, things have changed. Although Festinger proposed that social comparisons were driven by the need for accurate self-evaluations, current formulations emphasize the need to maintain and protect self-esteem (Aspinwall & Taylor, 1993; Pyszczynski, Greenberg, & LaPrelle, 1985; Taylor & Lobel, 1989; Wood, 1989). In general, when this motive is accessible, social comparison information is processed defensively. When the need to protect self-esteem is less salient (and the desire for self-certainty more of a concern), social comparison information may be processed nondefensively (Stapel & Schwinghammer, 2004). But what deter-

mines which need is salient? Up until now, research has not provided a clear answer to this question. Specifically, the role of the self has been largely neglected in this matter. In this article, we posit that the self matters. We propose that whether people react defensively to social comparison information depends on the type of self-conception that is activated at that particular moment. Specifically, a focus on positive self-conceptions will promote nondefensive reactions to upward social comparisons as a positive self-focus can act as a self-protective buffer. A focus on neutral self-conceptions, on the other hand, will promote defensive reactions to upward social comparisons because a neutral self will increase awareness that one has fallen short of an upward standard of comparison (see also Stapel & Koomen, 2001). Finally, we propose that a focus on negative self-conceptions will leave the self particularly vulnerable to threat, and so it will maximize defensive processing whether one encounters upward or downward social comparison.

The central theory guiding the current work is that people will be most motivated to protect self-esteem when attention is drawn to the self. This theory is based on the straightforward assumption that making the self salient focuses attention on the social object that is threatened by upward social comparisons. The specific prediction that follows is that a self-activation manipulation—a manipulation that draws attention to the self by activating self-conceptions—should engage

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more defensive comparison tendencies (see Stapel & Koomen, 2001). This prediction is premised on the use of a self-activation manipulation that does not activate either inherently positive or inherently negative aspects of the self. However, most of the time, focusing attention on the self may not result in the activation of predominantly neutral self-conceptions. In daily life, however, self-activation can take many forms. Most of the time then, focusing attention on the self may not result in the activation of predominantly neutral self-cognitions. Rather, the content of the self-cognitions that come to mind might be colored by recent experiences and may vary from one instance to another. For example, focusing on the self after having accomplished something important will probably result in the activation of positive self-cognitions. In this case, the activation of positive self-conceptions could act as a self-affirmation (see Steele, 1988) and might therefore reduce rather than increase the need to self-protect, resulting in nondefensive processing of social comparison information. In contrast, while experiencing failure, self-focus is most likely to activate negative self-conceptions. In these circumstances, self-activation could act as a threat, amplifying the need to protect or enhance the self, which in turn might maximize defensiveness (Campbell & Sedikides, 1999). In other words, we propose that when investigating defensive reactions to social comparisons, it is not heightened self-focus per se that determines defensiveness but rather *what* it is people focus on (see also Carver & Scheier, 1981). To test our predictions, the current studies compared a neutral self-activation manipulation with manipulations designed to activate positive or negative aspects of the self. In the following sections, we review research relevant to our theory, and then, we introduce a set of studies that test our key predictions.

#### *Self-Activation and Defensiveness*

When self-conceptions are highly accessible (i.e., when the self is activated), one is likely to be more attentive to self-relevant information than when the mind is otherwise engaged. Self-awareness research has shown,<sup>1</sup> for instance, that activating self-constructs raises concern for the standards by which one's actions can be evaluated (e.g., Duval & Wicklund, 1972; Scheier & Carver, 1983). Given that other people often serve as self-evaluative standards, self-activation should therefore influence the strength of reactions to social comparison information. Consistent with this view, self-activation appears to increase interest in social comparison information (see Stapel & Tesser, 2001).

Although self-activation increases a concern for comparisons, there is still some debate regarding whether it would also promote more or less defensive processing of social comparison information. On one hand, some

research has shown that self-focused attention increases accurate (and therefore less defensive) self-perceptions (Gibbons, 1983, 1990; Scheier, Carver, & Gibbons, 1979). On the other hand, a recent critical review of research examining the effects of self-focus on self-perceptions (Silvia & Gendolla, 2001) concluded that there is little direct evidence to support this view. In fact, evidence suggests that under some circumstances, a focus on the self can lead to increased defensive processing of self-relevant information. Our line of theorizing might be able to account for these inconsistent findings. We suggest that whether self-focus promotes defensive or accurate self-knowledge depends on the specific part of the self on which one is focusing. When the focus is on positive aspects of the self, this will result in less defensive self-perceptions. When the focus is on negative or neutral aspects of the self, increased defensiveness will be the result. It may be that contradictory findings across studies have occurred because manipulations have varied in their tendencies to focus attention on positive versus negative self-conceptions.

#### *Comparing and Defending the Self*

As a general rule, people do not like being outperformed by others. Among other concerns, it can be psychologically threatening to evaluate the self relative to an upward target of comparison. People can respond to this threat by working to prevent negative comparison information from diminishing their own self-images (e.g., Brown, Novick, Lord, & Richards, 1992; Klein, Blier, & Janze, 2001; Stapel & Schwinghammer, 2004). Research by Stapel and Koomen (2001) showed that defensive processing of this sort is especially likely to occur when the self is activated. In their studies, participants who received a neutral self-activation manipulation processed social comparison information in a self-serving (i.e., defensive) way. Negative and therefore threatening social comparison information produced no change in self-evaluations, whereas positive social comparison information resulted in higher self-evaluations (compared to control). Typically, such a lack of lowered self-evaluations after exposure to negative self-relevant information is considered to result from a self-defensive motive aimed at protecting self-esteem. Apparently, a focus on neutral self-conceptions increased the need to protect self-esteem.

Study 1 set out to gather additional evidence that neutral self-activation heightens defensive reactions to comparison information. But more important, as previous studies have focused only on neutral self-activation, the studies that follow extend our knowledge in an important way by also focusing on activation of both positive and negative self-conceptions. Study 1 was designed to replicate and extend Stapel and Koomen (2001) using a

different social comparison domain and a new measure of self-defensiveness. Study 2 adapted these procedures to compare the effects of neutral versus positive self-activation. We predicted that positive self-activation would lead to less defensive reactions to threatening (upward) social comparisons, whereas neutral self-activation would lead to more defensive reactions. Finally, Study 3 adapted the procedures in Studies 1 and 2 to examine the effects of positive versus negative self-activation. We predicted that negative self-activation would lead to defensiveness, irrespective of direction of comparison.

#### STUDY 1: NEUTRAL SELF-ACTIVATION AND DEFENSIVENESS

This study tested whether neutral self-activation would increase self-defensive processing of social comparison information (as compared to a control condition) in a physical attractiveness domain. In the no-activation control condition, we predicted less favorable self-evaluations of attractiveness after exposure to an attractive person than to an unattractive person. This pattern is consistent with past research and will be referred to in this article as a “nondefensive contrast effect” (see Brown et al., 1992). In the neutral self-activation condition, however, it was hypothesized that heightened attention to the self would lead to greater concern for maintaining positive self-esteem. As a result, we predicted that participants’ self-evaluations would show a defensive pattern such that the direction of the comparison would exert no influence on participants’ ratings of their own attractiveness (i.e., there would not be a significant contrast effect on self-evaluations).

In addition to defensive evaluations of the self, we also explored the possibility that there might be defensive evaluations of the comparison target. We asked participants to evaluate the attractiveness of the comparison other and hypothesized that compared to the control condition, increased concerns with living up to social standards would cause participants in the self-activation condition to lower their evaluations of the attractive comparison other. This method of denying the attractiveness could act as a second means of diminishing the threat of the upward social comparison.

This type of defensiveness has received little direct attention. Although defensive strategies aimed at altering relative performance have been documented before in the social comparison literature, most studies have focused on indirect strategies aimed at thwarting subsequent performances of the comparison other (e.g., sabotaging performances of the comparison other on a subsequent test) or directed at improving one’s own performance (e.g., working harder on a subsequent test; see Tesser, 1988). Gibbons and McCoy (1991), on the

other hand, did report direct derogation of the performance of a comparison other but on dimensions unrelated to the comparison itself. In their study, participants outperformed the comparison other in social adjustment and subsequently derogated this other person on unrelated dimensions of likeability and academic competence. To our knowledge, the present studies are the first to explore direct downgrading effects of the actual performance of a comparison other on the comparison dimension itself.

#### Method

##### PARTICIPANTS AND DESIGN

Sixty-nine female University of Groningen students participated for partial credit in an introductory psychology class. Participants were randomly assigned to one of four conditions of a 2 (self-activation: neutral vs. none)  $\times$  2 (comparison: attractive vs. unattractive) between-subjects design.

##### PROCEDURE AND INDEPENDENT VARIABLE MANIPULATIONS

The study was conducted as part of a mass testing session. Participants completed several questionnaires, all of which were ostensibly unrelated. At the end of the testing session, they were given a process debriefing.

*Self-activation.* In the first part of the questionnaire, half of the participants were given the neutral self-activation manipulation used by Stapel and Koomen (modeled after Brewer & Gardner, 1996). Participants read paragraphs describing a trip to the city. As part of a word-search task, they were instructed to circle carefully all the pronouns that appeared in the text, referring to *I* or *me*. The other half of the participants received a control manipulation in which they were asked to describe three qualities of a chair.

*Social comparison information.* Participants were then asked to take a close look at a picture of either an attractive female student or an unattractive female student. This part of the questionnaire was called “Face and Memory,” and it purportedly measured the relation between perceptual stimuli (e.g., physical attractiveness) and memory. Participants were asked to form an impression of this person as some questions about the person on the picture would follow later in the questionnaire.

##### DEPENDENT MEASURES

*Self-evaluation.* Immediately following the social comparison manipulation, participants rated their own attractiveness. Participants were told that this section of the questionnaire was part of a more extensive study in which researchers from the University of Groningen were examining how students see themselves at different points in time. Participants’ attractiveness ratings were

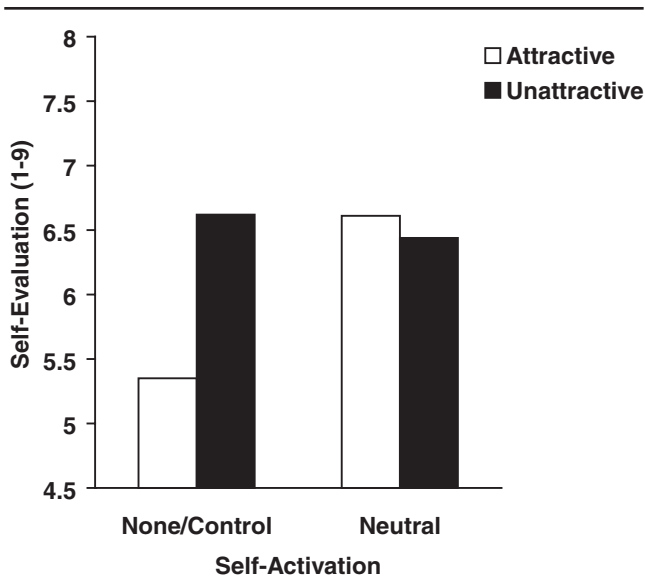


Figure 1 Self-evaluations of attractiveness as a function of self-activation and comparison: Study 1.

measured with two questions: “To what extent do you think you are attractive?” and “To what extent are you satisfied with your looks?” Responses were made on 9-point Likert-type scales, ranging from 1 = *not at all* to 9 = *extremely*. The two self-evaluation questions were combined into a single index of self-evaluation (Pearson’s  $r = .73$ ).

*Attractiveness comparison other.* To measure participants’ perception of the attractiveness of the comparison other, they were asked the following: “In general, to what extent do you think this person is seen as attractive?” Responses were made on 9-point Likert-type scales, ranging from 1 = *not at all attractive* to 9 = *extremely attractive*. This question was embedded in the filler items of the Face and Memory Study at the end of the questionnaire.

#### Results and Discussion

*Self-evaluation.* The hypothesis was that self-activation would moderate the influence of the comparison manipulation. The predicted pattern was for a nondefensive contrast effect in the control condition and little or no effect of comparison in the self-activation condition.

A 2 (self-activation)  $\times$  2 (comparison) ANOVA was conducted to test these predictions. These revealed a main effect of self-activation,  $F(1, 65) = 4.32, p < .05$ , such that participants in the neutral self-activation condition reported higher attractiveness ratings ( $M = 6.53, SD = 1.16$ ) than control participants ( $M = 5.99, SD = 1.16$ ). Additionally, a main effect of comparison was uncovered,  $F(1, 65) = 4.43, p < .05$ , such that comparison with

an attractive other resulted in lower attractiveness ratings ( $M = 6.00, SD = 1.10$ ) than comparison to an unattractive other ( $M = 6.53, SD = 1.21$ ).

More important, analysis revealed the predicted Self-Activation  $\times$  Comparison interaction,  $F(1, 65) = 7.60, p < .01$ . The pattern of results is shown in Figure 1. Control participants’ self-evaluations showed a nondefensive contrast effect such that those who were exposed to an attractive other rated themselves as less attractive ( $M = 5.35, SD = 0.63$ ) than those who were exposed to an unattractive other ( $M = 6.62, SD = 1.23$ ),  $F(1, 65) = 11.65, p < .001$ . In the neutral self-activation condition, however, this contrast effect disappeared. Participants who were exposed to an attractive other rated themselves no more or less attractive ( $M = 6.61, SD = 1.12$ ) than participants who were exposed to an unattractive other ( $M = 6.44, SD = 1.22; F < 1$ ).

These findings are consistent with our predictions. As expected, control participants processed the upward social comparison information in a non-self-defensive manner by incorporating the negative information into the self. Specifically, exposure to an attractive other resulted in less favorable self-evaluations than exposure to an unattractive other person. This pattern did not emerge, however, for participants in the neutral self-activation condition. They engaged in defensive processing of social comparison information. In this case, there was no difference between self-evaluations of attractiveness after exposure to an attractive or unattractive other person. It seems that self-activation increased the need to maintain self-esteem, preventing self-evaluations from being negatively influenced by threatening social comparison information.

*Attractiveness of comparison other.* Analyses of the attractiveness ratings of the comparison other brought out the predicted results. A 2 (self-activation)  $\times$  2 (comparison) ANOVA revealed a main effect of comparison,  $F(1, 65) = 55.48, p < .001$ , a significant main effect of self-activation,  $F(1, 65) = 7.20, p < .01$ , and a predicted (though marginal) Self-Activation  $\times$  Comparison interaction,  $F(1, 65) = 3.18, p = .079$ . The nature of these results can be understood by analysis of the simple main effects and by inspecting Figure 2. Among participants in the control condition, the attractive other was rated as more attractive ( $M = 8.00, SD = 1.06$ ) than the unattractive other ( $M = 5.59, SD = 1.33$ ),  $F(1, 65) = 42.01, p < .001$ . In the neutral self-activation condition, there was also a significant tendency to view the attractive other as more attractive ( $M = 6.83, SD = 0.92$ ) than the unattractive other ( $M = 5.35, SD = 1.00$ ),  $F(1, 65) = 16.28, p < .001$ . However, the (marginally) significant interaction between comparison and self-activation suggests that the effect of comparison was smaller in magnitude in the neutral self-activation condition than in the control condition. This

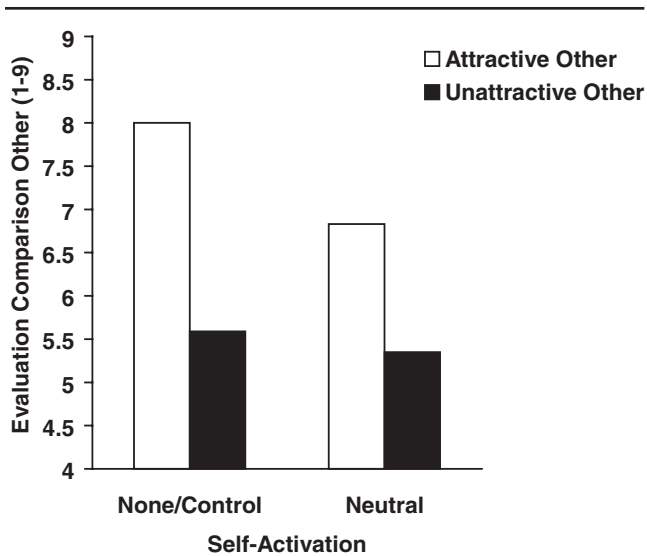


Figure 2 Evaluations of attractiveness of the comparison other as a function of self-activation and comparison: Study 1.

drop was driven by a tendency for those in the neutral self-activation condition to rate the attractive other as less attractive than did those in the control condition,  $F(1, 65) = 10.11, p < .005$ .

In summary, self-activation resulted in a diminished tendency to view the attractive comparison other as attractive. By devaluing the attractiveness of the threatening comparison other, participants diminished the threat this person posed to their self-esteem. Together with the results on self-evaluation, these findings provide further support for the view that neutral self-activation promotes defensive reactions to threatening social comparison information. This defensiveness is revealed not only through the maintenance of positive self-evaluations in the face of negative social comparison information but also through devaluation of the threatening comparison other.

#### STUDY 2: POSITIVE SELF-ACTIVATION AND DEFENSIVENESS

Having established that self-activation can lower defensiveness in response to comparisons of physical attractiveness, Study 2 was conducted to compare the effects of positive versus neutral self-activation procedures. Self-affirmation theory predicts that an opportunity to affirm the self-image (i.e., activating positive self-conceptions) will decrease defensive reactions to threatening information (Steele, 1988). Consistent with this, self-affirmations have been shown to reduce cognitive dissonance (Steele & Liu, 1983), stereotyping (Fein & Spencer, 1997), ruminative thoughts (Koole, Smeets,

van Knippenberg, & Dijksterhuis, 1999), and biased processing of threatening health information (Reed & Aspinwall, 1998). Effects of self-affirmation have also been found in the social comparison domain. Tesser and Cornell (1991) showed that a self-affirmation diminished the use of defensive strategies in a threatening comparison situation. In their study, self-affirmed participants were more helpful (gave easier clues in a verbal skills test) and were kinder to the comparison other than unaffirmed participants. Study 2 advances the work of Tesser and Cornell by determining if self-affirmations also moderate the effects that social comparison information has on self-evaluations.

Given that self-affirmation leads to increased acceptance of negative self-relevant information, it was hypothesized that it would also lead to increased acceptance of threatening upward social comparison information. Because a self-affirming activity bolsters feelings of self-worth (Steele, 1988), it is likely to reduce the motivation to protect or enhance self-esteem. As this self-enhancing motive becomes less salient, its influence on the processing of social comparison information might decrease, leading to nondefensive processing. Consequently, self-evaluations should be negatively influenced by upward social comparison information. The ironic effect is that people who are led to feel good about themselves (i.e., affirmed) will actually rate themselves less positively following threatening (upward) comparisons.

In this second study, the effects of positive self-activation<sup>2</sup> were compared to the effects of a neutral self-activation procedure. In the positive self-activation condition, we predicted a nondefensive contrast effect such that participants' evaluations of their own attractiveness would be less favorable after exposure to an attractive person than after exposure to an unattractive person. In the neutral self-activation condition, on the other hand, we predicted the same defensive effect observed in Study 1. Thus, we predicted that there would be no significant effect of the social comparison on self-evaluation. We also predicted defensive evaluations of the comparison other in the neutral self-activation condition (consistent with Study 1) and nondefensive evaluations of the target in the self-affirmation condition.

#### Method

##### PARTICIPANTS AND DESIGN

Sixty students were randomly assigned to the conditions of a 2 (self-activation: positive vs. neutral)  $\times$  2 (comparison: attractive vs. unattractive) between-subjects design. Participants received 3.50 Euros for their participation. At the end of the experiment, they were given a process debriefing.

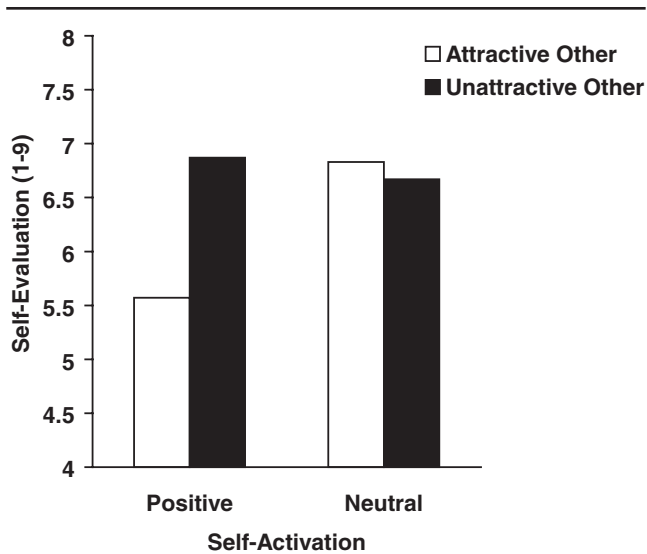


Figure 3 Self-evaluations of attractiveness as a function of self-activation and comparison: Study 2.

PROCEDURE AND INDEPENDENT  
VARIABLE MANIPULATIONS

Students from the University of Groningen were invited to the laboratory to participate in a study on perception. On arrival, participants were asked to sit down in separate cubicles and were told they would participate in a series of unrelated studies. Except for the positive and neutral self-activation manipulation, procedures and materials were identical to Study 1.

*Self-activation.* The current study extended the results of Study 1 by using a new manipulation of self-activation. The first questionnaire was a (bogus) test that was supposed to measure social skills and ambition. Participants were presented with 12 statements (e.g., “I like to influence other people” and “I would rather not be responsible for other people”) and were asked to indicate to what extent these statements applied to them (1 = *not at all like me*, 5 = *very much like me*). In the positive self-activation condition, participants were affirmed through the use of false positive feedback on their test. Participants in the neutral self-activation condition were told that they would receive their test score at the end of the experiment because calculation of their score would take some time. It was assumed, however, that the mere act of answering the test items would make participants self-reflect, thereby activating the self.

The rest of the procedure mirrored Study 1. After the manipulation of self-activation, participants were given the social comparison information and their attractiveness ratings for self and other were assessed.

Results and Discussion

*Self-evaluation.* A 2 (self-activation)  $\times$  2 (comparison) ANOVA was conducted to test our predictions, revealing a main effect of self-activation,  $F(1, 56) = 7.63, p < .01$ . Overall, participants whose positive self was activated rated themselves as less attractive ( $M = 6.22, SD = 1.04$ ) than participants whose neutral self was activated ( $M = 6.75, SD = 0.67$ ). Additionally, a main effect of comparison was uncovered,  $F(1, 56) = 8.61, p < .005$ . The nature of this effect was that participants who were exposed to an attractive other rated themselves as less attractive ( $M = 6.20, SD = 0.85$ ) than participants who were exposed to an unattractive other ( $M = 6.77, SD = 0.89$ ).

More important, the analysis revealed the predicted Self-Activation  $\times$  Comparison interaction,  $F(1, 56) = 14.42, p < .001$ . The complete pattern of means can be understood by analysis of the simple main effects and by inspecting Figure 3. In the positive self-activation condition, participants' self-evaluations showed a contrast effect such that those exposed to an attractive other rated themselves as less attractive ( $M = 5.57, SD = .56$ ) than those exposed to an unattractive other ( $M = 6.87, SD = 1.01$ ),  $F(1, 56) = 22.65, p < .001$ . In the neutral self-activation condition, however, there was no such contrast effect. Participants who were exposed to an attractive other rated themselves no more or less attractive ( $M = 6.83, SD = 0.56$ ) than participants who were exposed to an unattractive other ( $M = 6.67, SD = 0.77; F < 1$ ).

These findings were consistent with predictions. As in Study 1, activating neutral self-conceptions promoted defensive processing of threatening social comparison information, preventing self-evaluations from being negatively influenced by threatening social comparison information. In contrast, activating positive self-conceptions promoted nondefensive processing of threatening social comparison information, resulting in incorporation of negative social comparison information into the self. In this case, exposure to an attractive other resulted in less favorable self-evaluations of attractiveness than exposure to an unattractive other person. Although participants in this condition were also focusing on the self, the positive nature of the self that was activated prevented defensive processing of the threatening social comparison information. By bolstering the self, positive self-activation seems to have decreased the need to protect self-esteem, resulting in nonbiased processing of threatening self-relevant information.

*Attractiveness of comparison other.* A Comparison  $\times$  Self-Activation ANOVA revealed a main effect of comparison,  $F(1, 59) = 34.57, p < .001$ , such that the attractive comparison other was perceived as more attractive ( $M = 7.40, SD = 1.14$ ) than the unattractive other ( $M = 5.47, SD = 1.16$ ). It also revealed a marginally significant main

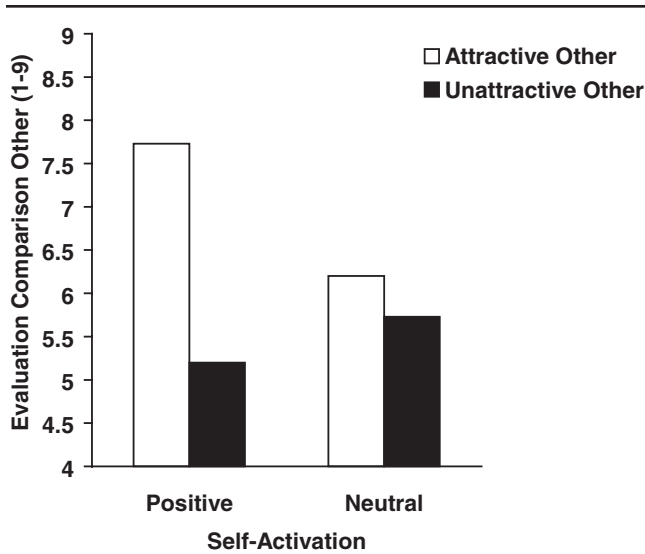


Figure 4 Evaluations of attractiveness of the comparison other as a function of self-activation and comparison: Study 2.

effect of self-activation,  $F(1, 56) = 3.84, p = .055$ , such that those in the neutral self-activation condition rated the comparison other as less attractive ( $M = 5.97, SD = 0.85$ ) than those in the positive self-activation condition ( $M = 6.47, SD = 1.70$ ). Both main effects were qualified, however, by a significant first-order interaction,  $F(1, 56) = 16.41, p < .001$ . The nature of the effects can be understood by analysis of the simple main effects and inspection of Figure 4.

These effects showed that participants in the positive self-activation condition rated the attractive other as more attractive ( $M = 7.73, SD = 0.59$ ) than the unattractive other ( $M = 5.20, SD = 1.47$ ),  $F(1, 56) = 49.31, p < .001$ . This pattern suggested a nondefensive acceptance of the threatening comparison others' attractiveness. In contrast, those in the neutral self-activation condition showed no difference in how attractive they rated the attractive comparison other ( $M = 6.20, SD = 0.78$ ) and the unattractive comparison other ( $M = 5.73, SD = 0.88$ ),  $F(1, 56) = 1.67, ns$ . This suggests a defensive tendency to deny the attractiveness of the attractive other. In further support of this view, simple main effects revealed that the attractive comparison other was rated as less attractive by those in the neutral self-activation condition than those in the positive self-activation condition,  $F(1, 56) = 18.06, p < .001$ .

As in Study 1, these results indicate that neutral self-activation caused participants to eliminate the threat the attractive person posed to their self-image by diminishing her attractiveness. The fact that participants in the positive self-activation condition did not show this defensive reaction supports the prediction of lower defensive-

ness following self-affirmation. Taken together, these findings show that neutral self-activation leads to dramatically different results than positive self-activation.

#### STUDY 3:

##### NEGATIVE SELF-ACTIVATION AND DEFENSIVENESS

Studies 1 and 2 showed that activating the self does not simply lead to more defensive reactions toward threatening social comparison information. Rather, it is the positive or neutral valence of the self-conceptions that are activated that determines the level of defensiveness. Having established that positive self-conceptions can promote nondefensive processing, an important next step is to assess the relative effects of negative versus positive self-activation.

Given that the activation of positive self-conceptions bolsters the self and thereby decreases the motivation to protect or enhance self-esteem, it is logical to assume that the activation of negative self-conceptions will pose a threat to the self. This, in turn, may lead to a heightened motivation to enhance self-esteem (Beauregard & Dunning, 1998; Steele, 1988). Consistent with this prediction, a vast number of studies have shown that when the self is threatened, people often engage in self-esteem-restoring activities (Campbell & Sedikides, 1999; Steele, 1988; Tesser, 1988). In social comparison research, the concept of self-threat and its influence on social comparison have also received considerable attention. However, most studies have assessed the effects of self-threat either on social comparison choice (Taylor & Lobel, 1989; Wills, 1981; Wood, Giordano-Beech, & Ducharme, 1999) or on strategies to minimize threatening comparisons (Alicke, LoSchiavo, Zerbst, & Zhang, 1997; Brown et al. 1992; Gibbons, Benbow, & Gerrard, 1994; Tesser & Cornell, 1991). As a result, very little is known about how threatening information about the self moderates the effects of social comparison on self-evaluation. Study 3 was conducted to gain insight into this matter.

In this study, the effects of negative and positive self-activation were compared.<sup>3</sup> Based on previous research, it was predicted that activating negative self-conceptions prior to receiving social comparison information would promote defensive, self-serving processing of this information. Different from neutral self-activation, which promotes defensive processing of only threatening comparison information, negative self-activation was expected to result in defensiveness irrespective of whether the comparison information was threatening in nature. Thus, participants might raise their self-evaluations and diminish their evaluations of others whether the comparison other is attractive or not. In contrast, participants whose positive self is activated should have no self-esteem-maintaining concerns (see Study 2) and would

consequently report more realistic evaluations of the self and the comparison other. As a result, self-evaluations in the negative self-activation condition should be higher than self-evaluations in the positive self-activation condition. In addition, evaluations of the comparison other should be lower in the negative self-activation condition than in the positive self-activation condition.

### Method

#### PARTICIPANTS AND DESIGN

Seventy female students participated for partial credit in an introductory psychology class. Participants were randomly assigned to one of four conditions of a 2 (self-activation: positive vs. negative)  $\times$  2 (comparison: attractive vs. unattractive) between-subjects design.

#### PROCEDURE AND INDEPENDENT VARIABLE MANIPULATIONS

The study was conducted as part of a mass testing session. Participants completed several questionnaires that were ostensibly unrelated. At the end of the testing session, participants were given a process debriefing.

**Self-activation.** In the first questionnaire, either a positive or a negative self-activation was induced. In the positive self-activation condition, participants were asked to describe three positive aspects of themselves. In the negative self-activation condition, participants were asked to describe three negative aspects of themselves. All participants were asked to illustrate their answers by giving examples.

The rest of the procedure mirrored Studies 1 and 2. After the manipulation of self-activation, participants were given the social comparison information and subsequently rated the self and comparison other for attractiveness.

### Results and Discussion

**Self-evaluation.** Self-evaluations in both the negative and positive self-activation condition were expected to show a contrast effect. But because of a heightened motivation to restore self-esteem, self-evaluations in the negative self-activation condition were expected to be higher than self-evaluations in the positive self-activation condition.

A 2 (self-activation)  $\times$  2 (comparison) ANOVA was conducted to test our predictions. This revealed the expected main effect of comparison,  $F(1, 66) = 17.26, p < .001$ , such that participants who were exposed to an attractive other rated themselves as less attractive ( $M = 5.78, SD = 1.38$ ) than participants who were exposed to an unattractive other ( $M = 6.96, SD = 1.19$ ). Additionally, the predicted main effect of self-activation was uncovered,  $F(1, 66) = 13.30, p < .001$ . Participants whose negative self was activated rated themselves as more attractive

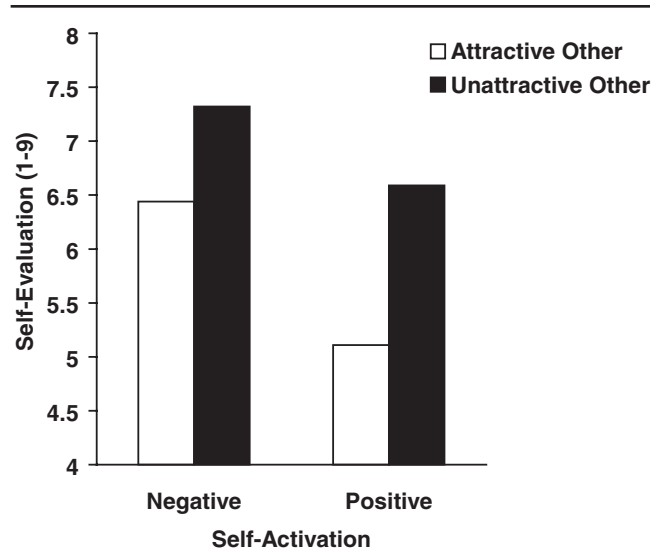


Figure 5 Self-evaluations of attractiveness as a function of self-activation and comparison: Study 3.

( $M = 6.87, SD = 1.39$ ) than participants whose positive self was activated ( $M = 5.83, SD = 1.25$ ).

Simple effect analyses were conducted to test whether self-evaluations of participants whose negative self was activated were significantly higher in both the attractive and unattractive other conditions. This appeared to be the case. When participants were confronted with an attractive other, participants in the negative self-activation condition rated themselves as more attractive ( $M = 6.44, SD = 1.47$ ) than participants in the positive self-activation condition ( $M = 5.11, SD = 0.90$ ),  $F(1, 66) = 11.38, p < .001$ . The same pattern of results was observed when participants were confronted with an unattractive other. As hypothesized, participants in the negative self-activation condition reported higher self-evaluations ( $M = 7.32, SD = 1.17$ ) than participants in the positive self-activation condition ( $M = 6.59, SD = 1.12$ ),  $F(1, 66) = 3.27, p < .075$ .

The overall pattern of results is shown in Figure 5, and it suggests a need to restore feelings of self-worth even following exposure to an unattractive other.

**Attractiveness of comparison other.** It was hypothesized that when the negative self was activated, the attractiveness ratings for both the attractive and the unattractive comparison other would be lower than when the positive self was activated. A Self-Activation  $\times$  Comparison ANOVA revealed a significant effect of comparison,  $F(1, 66) = 122.24, p < .001$ , such that the attractive comparison other was perceived as more attractive ( $M = 7.47, SD = 0.91$ ) than the unattractive other ( $M = 4.74, SD = 1.29$ ). It also revealed a significant main effect of self-activation,  $F(1, 66) = 12.01, p < .001$ , such that partici-

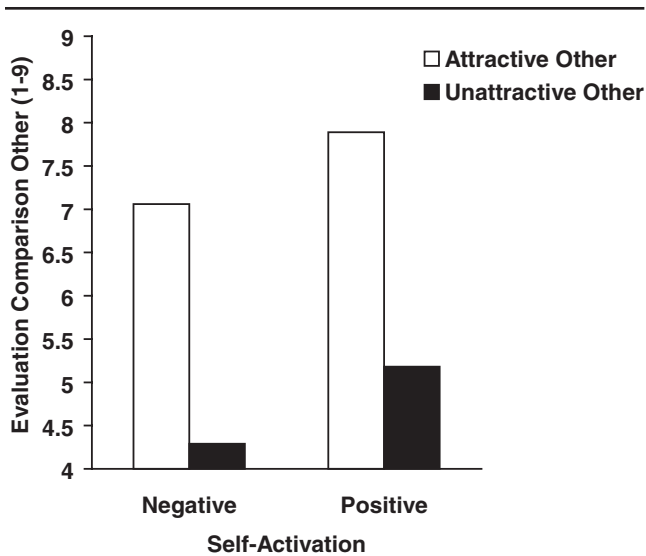


Figure 6 Evaluations of attractiveness of the comparison other as a function of self-activation and comparison: Study 3.

pants whose negative self was activated rated the comparison other as less attractive ( $M = 5.71$ ,  $SD = 1.73$ ) than participants whose positive self was activated ( $M = 6.57$ ,  $SD = 1.72$ ).

Although there was no significant interaction, simple main effects analyses were conducted to test whether participants whose negative self was activated actively devalued the attractiveness of the comparison other in both the attractive and unattractive other conditions. This appeared to be the case. The attractive other was rated as less attractive by participants whose negative self was activated ( $M = 7.06$ ,  $SD = .80$ ) than by participants whose positive self was activated ( $M = 7.89$ ,  $SD = 0.83$ ),  $F(1, 66) = 5.83$ ,  $p < .025$ . And as hypothesized, the unattractive other was also rated as less attractive by those whose negative self was activated ( $M = 4.29$ ,  $SD = 1.21$ ) than by those whose positive self was activated ( $M = 5.18$ ,  $SD = 1.24$ ),  $F(1, 66) = 6.18$ ,  $p < .025$ . The overall pattern of results is shown in Figure 6.

These findings show that negative self-activation promotes self-serving processing of social comparison information. Participants whose negative self was activated reported higher self-evaluations than participants whose positive self was activated. In addition, those participants whose negative self was activated rated the comparison other as less attractive than participants whose positive self was activated. The fact that these defensive reactions occurred both in the attractive other and in the unattractive other condition shows that negative self-activation promotes defensive processing of any kind of social comparison information, threatening and nonthreatening.

Apparently, negative self-activation increases the motivation to restore self-esteem even more so than neutral self-activation, making people seize every available opportunity to repair their self-image.

#### GENERAL DISCUSSION

The present research demonstrated that different forms of self-activation have differential influences on the extent to which social comparison information is processed defensively. Neutral self-activation increased, whereas positive self-activation diminished defensive reactions toward threatening social comparison information. Negative self-activation, on the other hand, resulted in maximized defensiveness, whether the comparison information was threatening or nonthreatening.

It thus appeared that activation of positive self-conceptions leads to dramatically different results than activating negative or neutral self-conceptions. Apparently, a focus on positive self-conceptions (i.e., self-affirmation) bolstered the self, thereby reducing the need to protect or enhance self-esteem. This reduced preoccupation with self-esteem maintenance concerns, in turn, permitted less biased processing of threatening self-relevant information. In contrast, neutral self-activation, and negative self-activation even more so, appeared to have increased the motivation to protect self-esteem. A focus on neutral self-conceptions resulted in defensive processing of self-relevant information when comparison information was threatening. A focus on negative self-conceptions, on the other hand, promoted defensive processing of both threatening and nonthreatening social comparison information. Apparently, a focus on negative self-conceptions damages self-esteem, inducing a heightened need to defend and enhance self-esteem.

Taken together, these findings clearly show that Stapel and Koomen's (2001) proposition needs nuance. One cannot simply state that self-activation increases defensiveness. The present set of studies makes clear that essential in determining defensiveness is not whether the self is activated but what aspect of the self is being activated. When positive self-conceptions are activated, defensiveness is low; when neutral self-conceptions are activated, defensiveness increases; and when negative self-conceptions are activated, defensiveness is maximized.

Critics might argue, though, that the pattern of results on self-evaluation in the neutral self-activation condition (Studies 1 and 2) need not necessarily be explained using a motivational approach. One might contend, for example, that the patterning of self-evaluations in the neutral self-activation condition might be driven by a priming (or assimilation) effect. Seeing an

attractive person might induce optimistic feelings about one's own attractiveness and thereby results in positive ratings of self. Although this explanation can explain this particular finding, it cannot explain the fact that these same participants also devalued the attractiveness of this comparison other. After all, why would one derogate an attractive person if she makes you feel positive about yourself? This pattern of results does make sense from our own perspective, however. An underlying motivation to protect self-esteem would explain derogation of an attractive woman because she threatens the individual's feelings of self-worth. In fact, our claim that motivation is the mechanism underlying the self-evaluation maintenance (SEM) processes is strengthened by these findings.

In addition, we have supplementary data to support a motivational interpretation of our findings. In an independent part of Study 2, we provided a different subset of participants in the neutral self-activation condition with an extra opportunity to bolster their self-esteem prior to measuring their self-evaluations of attractiveness. We asked these individuals to rate their own intelligence and the extent to which they were satisfied with their living situations.<sup>4</sup> Results show that participants who were given this extra opportunity to bolster their feelings of self-worth did incorporate negative comparison information into their self-evaluations. Their self-evaluations patterned themselves consistent with a nondefensive contrast effect. Self-ratings were lower after seeing an attractive other ( $M = 5.47$ ,  $SD = 0.99$ ) than after seeing an unattractive other ( $M = 6.46$ ,  $SD = 0.93$ ),  $F(1, 54) = 6.24$ ,  $p < .025$ . Results also indicated that defensive devaluation of the attractive comparison other was eliminated when participants were given this extra opportunity to bolster self-esteem. The attractive comparison other was rated as far more attractive ( $M = 7.73$ ,  $SD = 0.46$ ) than the unattractive other ( $M = 5.50$ ,  $SD = 1.16$ ),  $F(1, 54) = 32.90$ ,  $p < .001$ . Put differently, when an additional source of bolstering self-esteem was provided in the neutral self-activation condition, the need to protect self-esteem by guarding self-evaluations was no longer evidenced.

These findings strongly support our motivational view. It is interesting that our results also correspond with Tesser et al.'s (Tesser & Cornell, 1991; Tesser, Crepaz, Beach, Cornell, & Collins, 2000) stand on self-esteem regulation. They argue that various self-esteem-affecting mechanisms act interchangeably to serve the common goal of maintaining positive self-esteem. In our additional study, participants who had the opportunity to report positive self-ratings of intelligence were nondefensive in their reactions to threatening social comparison information, whereas participants who did not

have this opportunity reacted defensively. The fact that affirming one's intelligence, a self-esteem-bolstering activity, affected the propensity to engage in another self-esteem-regulating mechanism indicates that both activities tap into the same underlying mechanism of self-esteem regulation. This supports Tesser et al.'s (Tesser & Cornell, 1991; Tesser et al., 2000) interchangeability perspective. Moreover, the fact that bolstering self-esteem reduced the tendency to engage in other defensive strategies provided further support for their claim of the satisfying rather than maximizing nature of this self-esteem-regulating mechanism (Tesser & Cornell, 1991; Tesser et al., 2000).

#### *Soundness of Manipulations*

Our studies are focusing on self-defensive mechanisms, which are relatively volatile processes. For this reason, we have deliberately chosen not to conduct manipulation checks because most likely, they would have interfered with the self-defensive mechanisms and would have consequently affected our main dependent variables. Therefore, a critical note about the validity of our manipulations of the different types of self-activation seems to be in place. As no manipulation checks were conducted, we cannot be entirely certain whether our manipulations of self-activation actually succeeded in activating the self.

To test whether our self-activation manipulations activated the self more so than the no-activation control condition, we conducted an additional study ( $n = 73$ ) in which we induced the exact same manipulations that were used throughout our article. Thus, participants were randomly assigned to either a control (describe three aspects of a chair), neutral self-activation (circle personal pronouns), neutral self-activation (filling in a personality test), positive self-activation (false positive feedback on a personality test), positive self-activation (describe three positive aspects of self), or negative self-activation (describe three negative aspects of self) condition. Subsequently, level of self-activation was measured by means of the Wezwe task (Dijksterhuis & van Knippenberg, 2000; Stapel & Tesser, 2001). Participants were told that they would be presented with a short story in Wezwe, a language only spoken in New Guinea. Then, participants were given a short story. Contrast analyses were conducted on the number of reported self-words in which the following weights were given to control, neutral self-activation (circle personal pronouns), neutral self-activation (filling in a personality test), positive self-activation (false positive feedback on a personality test), positive self-activation (describe three positive aspects of self), or negative self-activation (describe three negative aspects of self), respectively (-5, 1, 1, 1, 1, 1). The analy-

**TABLE 1: Means and Standard Deviations for Translated Self-Words as a Function of Manipulation**

<i>Manipulation</i>	<i>Number of Translated Self-Words</i>	
	M	SD
Control	4.55	0.93
Neutral self-activation (circle self-words)	5.42	1.88
Neutral self-activation (personality test)	6.08	1.61
Positive self-activation (personality test)	5.92	1.61
Positive self-activation (positive self-aspects)	6.42	2.02
Negative self-activation (negative self-aspects)	5.67	2.15

ses revealed a significant effect,  $t(1, 67) = 2.37, p < .025$ . Participants in the control condition translated a smaller number of the target words into self-words than participants in both positive self-activation conditions, both neutral self-activation conditions, and the negative self-activation condition (see Table 1 for the pattern of means). This indicates that in all self-activation conditions, the self was activated to a greater extent than in the control condition.

In addition, we also have data indicating that our manipulations of the different kinds of self-activation also influenced global self-esteem differently. In this additional study, 110 participants were randomly assigned to one of four conditions: control (describe three aspects of a chair), neutral self-activation (circle personal pronouns), positive self-activation (describe three positive self-aspects), and negative self-activation (describe three negative self-aspects). Subsequently, global self-esteem was measured by means of Robins, Hendin, and Trzesniewski's (2001) single-item self-esteem measure. Participants were asked to indicate the extent to which they agreed with the item *I have positive self-esteem*. Responses were made on 9-point Likert-type scales, ranging from 1 = *not at all* to 9 = *very much*. Contrast analyses were conducted to test our hypothesized pattern, which was for the control condition and the neutral self-activation condition not to differ and for the negative and positive self-activation to result in respectively lower and higher global self-esteem than control and neutral self-activation. The following weights were given to control, neutral self-activation, negative self-activation, and positive self-activation, respectively: 0, 0, -1, 1. The analyses revealed a significant effect of condition:  $t(1, 106) = 6.45, p < .001$ . More specifically, the neutral self-activation manipulation had no effect on self-esteem when compared to a no-activation control manipulation. In contrast, the positive and negative self-activation manipulations respectively raised and

diminished global self-esteem as compared to the control and neutral self-activation manipulation.

When combining these two additional sources of data, we feel it is safe to conclude that our different manipulations of self-activation were successful. More specifically, our manipulation of positive self-activation increased self-activation, while at the same time raising global self-esteem (as compared to control). Our manipulation of neutral self-activation also increased self-activation, while leaving global self-esteem unaffected (as compared to control). Finally, our manipulation of negative self-activation also increased self-activation, while at the same time diminishing global self-esteem (as compared to control).

#### *SEM Processes and the Self-System*

Our studies add in an important way to the existing literature on SEM processes and the SEM model (Tesser, 1988). Empirical tests of this model have focused mainly on behavioral outcomes (e.g., altering the performance of the comparison other) or on affect (see Tesser, 1988; Tesser et al., 2000; Tesser, Millar, & Moore, 1988). In the present studies, we have found similar results while focusing directly on self-evaluations. Our results show that participants who were exposed to a threatening comparison other maintained their positive self-evaluations by not incorporating this negative social comparison information into their self-image.

Previous work on the SEM model shows that a self-esteem-bolstering activity, such as self-affirmation, affects the subsequent operation of SEM processes under threat (Tesser & Cornell, 1991). An important other question is whether self-esteem-affecting activities that are independent from the comparison situation will also affect the propensity to engage in SEM activities. Research by Tesser and Moore (2001) suggests not. In their research, participants were given threats and enhancements to their self-esteem prior to receiving social comparison information. Results showed no effects of these independent threats or self-enhancements on the propensity to engage in SEM activities, leading the authors to conclude that SEM processes may be autonomously operating. Our findings, on the other hand, do suggest interdependency between SEM processes and the larger self-system. In the present study, independent self-enhancement (positive self-activation) diminished the propensity to engage in SEM behavior in a subsequent social comparison situation. In contrast, an independent self-threat (negative self-activation) increased SEM behavior in a subsequent social comparison situation. Thus, independent self-threats and self-enhancements influenced the operation of SEM processes in an unrelated social comparison situation. In

contrast to Tesser and Moore, we show that SEM processes are indeed affected by independent changes in the larger self-system, and we provide important evidence for the interdependency of SEM processes and the larger self-system.

In our studies, we repeatedly found that participants devaluated the (threatening) comparison other. Throughout this article, we have been arguing that this finding is motivational in nature: Devaluing a threatening comparison other diminishes the threat this person poses to one's self-evaluation. Our findings show that self-defensiveness can take drastic forms: Participants were so strongly motivated to protect their self-esteem that they rated a person consensually defined by others as highly attractive as being only moderately attractive. One might wonder, however, whether participants truly perceived the comparison other as being less attractive. Maybe they were deliberately devaluing the comparison other, realizing that harshly evaluating her would make them feel better about themselves. However, research demonstrating that most people genuinely think they have more satisfying interpersonal relationships (Buunk & van der Eijnden, 1997), have more adaptive personalities (Sande, Goethals, & Radloff, 1988), and even drive better than other people (Svenson, 1981) suggests that self-serving misrepresentations of reality are not that uncommon. In this light, our results can be considered as another illustration of the capacity unique to humans to mold reality to fit their needs.

#### NOTES

1. Although self-awareness effects on the use of norms and standards may be used as indirect evidence to support the present perspective, we want to emphasize that in the present studies, we define *self-activation* as a relatively general construct that should be distinguished from self-awareness and related constructs (e.g., self-consciousness and self-focus). Although self-activation refers merely to the cognitive activation of (any kind of) self-related knowledge, *self-awareness* refers to a heightened degree of reflective self-attentiveness. Thus, whereas self-awareness is about a relatively conscious and active attention to the self, self-activation is merely about the activation of self-related cognitions. In a sense, then, self-awareness effects may be viewed as a special subset of self-activation effects, namely those effects that refer to activation of reflective, self-conscious, self-related information. Thus, whereas it should be possible to induce self-activation effects below conscious awareness (which was the case with the "circle self-words task" used in Study 1), awareness seems to be a necessary prerequisite for self-awareness (see also Duval & Wicklund, 1972; Trapnell & Campbell, 1999).

2. Although a focus on positive self-cognitions is in essence a self-affirmation, it will be referred to as *positive self-activation* hereafter for the purpose of clarity and to maintain consistency throughout the article.

3. The decision to compare negative and positive self-activation has been made sensibly. In this third study, we wanted to make a comparison between the expected defensiveness resulting from negative self-activation on one hand and nondefensiveness on the other hand. As Study 2 showed that positive self-activation results in nondefensive processing, comparing negative and positive self-activation seemed to us the most appropriate way to achieve this.

4. Analyses of answers on these items clearly showed that participants actually seized this opportunity to bolster self-esteem. Mean ratings of intelligence and satisfaction with living situation were far above the midpoint of the 9-point scale: 7.12 and 7.21, respectively.

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