

EGO THREAT ELICITS DIFFERENT SOCIAL COMPARISON PROCESSES AMONG HIGH AND LOW SELF-ESTEEM PEOPLE: IMPLICATIONS FOR INTERPERSONAL PERCEPTIONS

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Two studies examined the effect of self-image threat on the use of social comparisons by those who have high and low trait self-esteem. In the absence of threat, trait high and low self-esteem people engaged in similar social comparison processes. When threatened, however, trait high self-esteem people made more downward social comparisons and trait low self-esteem people made more upward social comparisons. In Study 1, these effects were found for comparisons against an interaction partner and against generalized others. Study 1 also showed that state self-esteem rose among high self-esteem participants because they made downward social comparisons. Study 2 linked social comparisons to interpersonal likability and found that people with high trait self-esteem were liked less by perceivers when they made downward comparisons, whereas those with low trait self-esteem were liked more when they made upward comparisons. Discussion focuses on the interrelations among trait self-esteem, self-concept, and interpersonal perceptions in the context of self-defense.

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Getting along and getting ahead are fundamental life tasks and, as a result, myriad social responses are aimed at achieving one or the other. Satisfying both goals may be difficult, however, as optimal behavioral solutions for the two may be incompatible. This paper details how people with high and low trait self-esteem grapple with the often-opposing goals of getting along versus getting ahead, particularly in the context of threats to the self and resultant defenses brought forth to deal with those threats. Using the concept of social comparisons (i.e., thinking of the self as better than, worse than, or equal to others), we investigated self-defense patterns among trait high and low self-esteem people, as well as the ensuing interpersonal consequences of self-defense. Viewed as the combination of intrapsychic thoughts about the self and evaluations of other people, social comparisons are likely to be a crucial component toward understanding how and why trait high and low self-esteem people defend the self after threat.

THE SOCIAL CONSEQUENCES OF SELF-ESTEEM AND THREAT

When asked to describe themselves, people with high and low trait self-esteem seem to vary widely in likability, with trait high self-esteem people claiming to be especially likable whereas trait low self-esteem people doubt their ability to attract new relationships or maintain existing ties. In actuality, however, trait high and low self-esteem people are viewed similarly by a new acquaintance (Heatherton & Vohs, 2000; Vohs & Heatherton, 2001), a finding that fits with an extensive literature review that concluded trait self-esteem has a rather muted effect on most personal outcomes (Baumeister, Campbell, Krueger, & Vohs, 2003).

Nonetheless, there are conditions under which trait self-esteem does have identifiable consequences and those conditions often involve threats to self. Trait high self-esteem people respond to threat by thinking about their own traits, states, and behaviors (i.e., they become more independent), whereas trait low self-esteem people defend the self by attending to relational concerns (i.e., they become more interdependent) (Vohs & Heatherton, 2001). Furthermore, these styles of self-defense produce different patterns of likability, such that threatened high self-esteem people become less likable than their nonthreatened peers, whereas after threat low self-esteem people become more likable (Heatherton & Vohs, 2000; Vohs & Heatherton, 2001). Our research has further linked changes in self-views to changes in likability, showing that more independence led to lower ratings of likability and more interdependence led to higher ratings of likability (Vohs & Heatherton, 2001). Given these findings, we sought to test the idea that self-image threats produce differences in self-other comparisons among trait high

and low self-esteem, and further that social comparisons determine how likeably they are viewed by others.

SOCIAL COMPARISONS, SELF-ESTEEM, AND THREAT

The social comparison literature is replete with evidence that high and low self-esteem people use different social comparisons, especially after experiencing a self-image threat. High self-esteem people are most likely to report unfavorable views of others and concomitant downward social comparisons after threat. For instance, Fein and Spencer (1997) showed that trait high self-esteem people after threat showed heightened prejudice regarding a member of a negatively stereotyped group, a process that served to improve their temporarily depressed self-esteem. Wood, Giordano-Beech, Taylor, Michela, and Gaus (1994) found that trait high self-esteem people preferred to engage in social comparisons after failure, presumably because they intended to engage in downward social comparisons to derive a self-esteem boost. Baumeister et al. (2003) similarly concluded based on their review of the literature that when people with high trait self-esteem feel threatened, they boost evaluations of the self while devaluing others. Thus, we predicted that trait high self-esteem people would engage in downward social comparisons after an ego threat.

Predicting social comparisons patterns among those with trait low self-esteem is a bit more complex, but research suggests that after threat upward social comparisons would be the modal response. Research by Baldwin and Sinclair (1996) showed that when trait low self-esteem people are primed with failure words, they are more attuned to social rejection words, which is consistent with the notion that they become vigilant about social perceptions and interpersonal inclusion (Vohs & Heatherton, 2001). Research by Gardner and colleagues (Gardner, Gabriel, & Hochschild, 2002) showed that being in a state of interdependence leads people to react positively to others' successes, as if they were their own successes. Moreover, aligning oneself with someone successful can have positive effects on the self, as shown by work on 'basking in reflected glory' by Cialdini et al (1976). On one hand, these findings hint that the move toward an interdependent self after threat for trait low self-esteem people may produce upward social comparisons as a way to re-affirm the self. On the other hand, low self-esteem people may engage in upward social comparisons simply because they feel badly about themselves after threat and seek to improve their standing (Sedikides & Strube, 1997; see also Sedikides & Gregg, 2003). In either case, we predict that trait low self-esteem people will respond to threat by evaluating others more highly than the self.

THE SOCIAL CONSEQUENCES OF SOCIAL COMPARISONS

There has been little if any empirical research that examines how the use of social comparisons affects interpersonal judgments. A theoretical model by Exline and Lobel (1999) concluded that there can be serious, negative interpersonal consequences to outperforming others. Although seeing the self as better than others would likely boost one's self-evaluations, it may also have the simultaneous effect of decreasing likability. People generally resent being made to feel inferior, and hence public downward social comparisons may bring about social repercussions (Godfrey, Jones, & Lord, 1986). Paulhus's (1998) work on trait self-enhancers also supports the notion that people do not like those who give off an air of superiority, and that these negative interpersonal perceptions only become stronger with multiple interactions. Basking in one's own glory (cf. Cialdini et al., 1976), especially when it means devaluing others, is not likely to win or keep friends.

Conversely, we posit that upward social comparisons have positive interpersonal consequences. People enjoy being admired and liked, so much so that ingratiation is one of the strongest and most consistent predictors of positive interpersonal perceptions (Godfrey et al., 1986). Not coincidentally, one of the four main ingratiation strategies (Jones, 1964; Jones & Wortman, 1973) involves making others feel as if they are superior: Other-enhancement occurs when an ingratiator communicate highly favorable evaluations of a target, including such behaviors as asking for advice and appearing personally interested in the target. In practice, other-enhancement often involves acting as if the target is better than the ingratiator. Findings from White, Sanbonmatsu, and Croyle (2002) confirmed that people can and do publicly underperform to be seen as more likeable. A meta-analysis of the effectiveness of various ingratiation tactics found other-enhancement to be the most successful upward ingratiation tactic (Gordon, 1996). Thus, regardless of their motives (e.g., securing social bonds or self-improvement goals) for low self-esteem people, seeing others as better than the self is likely to have positive interpersonal consequences.

THE CURRENT RESEARCH

In two studies, we assessed high and low self-esteem people in threatening and nonthreatening situations to examine social comparisons and attendant interpersonal consequences. In Study 1, participants compared themselves with a confederate and generalized others ("people in general") either after threat or in a neutral context. We predicted differences in social comparisons primarily in the context of a self-image threat. In Study 2, we asked naïve raters to judge videotapes of threat-

ened and nonthreatened participants who were shown questions about how they compared to others. Raters judged participants' likability, thereby providing the crucial link between social comparisons and interpersonal appraisals as a function of targets' threat condition and self-esteem.

STUDY 1

The goal of Study 1 was to see if high and low self-esteem people exhibit different social comparisons after threat. Using a paradigm similar to that we have used in past research on threat and likability (Heatherton & Vohs, 2000; Vohs & Heatherton, 2001), we predicted that the conditions of self-image threat and self-esteem would lead to differences in comparisons of the self against a specific target (i.e., a confederate). In this study, we also examined an intrapersonal moderator of the expected effects involving traits that varied in ambiguity to assess whether ambiguous traits, as opposed to unambiguous traits, would portray greater differences in comparisons. Hayes and Dunning (1997; also Suls, Lemos, & Stewart, 2002) considered a trait ambiguous to the extent that it could refer to different types of behaviors, whereas unambiguous traits were those that referred to only a limited number of traits. The more ambiguous a trait, the easier is it to use the trait in social comparisons because it allows people to derive their own meanings and therefore create their own reality in terms of evaluating the self versus others. Past research supports this idea by showing that ambiguous information allows for personal stereotypes and other cognitive associations to influence perceptions of others (Kunda & Sherman-Williams, 1993).

In Study 1, we also examined an interpersonal moderator variable: generalized versus specific others as the target of social comparison. It may be that the amorphous idea of generalized others leaves more room for one's biases to show through, thereby allowing people to position themselves as they like, vis-à-vis generic others. Conversely, actively defending the self may prompt people to prefer a real, live target as a social comparison target. If social comparisons serve a self-defense motive and if they serve to repair the self after threat, then comparisons made against an interaction partner may have more potent consequences than comparisons against generalized others. We predicted that the desire to repair the self after threat would lend participants to have stronger social comparison responses to the interaction partner than to the thought of amorphous, generalized others.

An additional goal of Study 1 was to test the idea that social comparisons provide a chance for reaffirming the self after threat. Self-reparation, in the form of regaining positive self-feelings after threat, is most likely to occur with the use of downward social comparisons because

seeing oneself as better than others leads to pride, happiness, and satisfaction (e.g., Wills, 1981). Thus, we predicted that trait high self-esteem participants would show restored state self-esteem after engaging in social comparisons, mainly because they use downward social comparisons. Trait low self-esteem participants were not predicted to experience the rebounding of self-esteem after social comparisons, again because of their lack of downward social comparisons. Whether they were attempting to increase social inclusion via the use of upward social comparisons or engaging in a form of self-improvement, any positive consequences of their efforts would be not be realized until later. Thus, self-esteem benefits would likely not materialize in the immediate context for trait low self-esteem participants.

METHOD

Participants

In exchange for partial course credit, 43 male undergraduates participated in this study.

Procedure

Participants came to the laboratory individually, where they were met by an experimenter and a male confederate posing as another participant. Participants were told that they were participating in an experiment in which different types of intelligences and their relationship to personality variables and interpersonal interactions were being measured. They were told that they would be completing a variety of assessments tapping into different psychological domains and that their answers on various measures would be examined in the context of their answers on all the other measures. They were told that they would later be asked to think about different aspects of their performance (as a way to include the social comparison measures).

Participants first completed a self-esteem scale (Fleming & Courtney, 1984, based on Janis & Field, 1959; $M = 124.67$, $SD = 17.87$). After completing the self-esteem scale, they were given one of two versions of the Remote Associates Test (RAT; Mednick, 1968), depending on whether they had been randomly assigned to ego threat or control conditions. The RAT consists of lists of three words that have one word in common (e.g., "elephant," "lapse," and "vivid" are all related to the word "memory") and the items and answers can vary in difficulty (in the current study, $Mode = 1$ correct out of 12 on the difficult version of the RAT). In

the control condition, participants were given an easy version of the RAT and were told that this task was being pilot tested for use in future experiments. They were given no stated time limit but were instead just asked to “try it out for a little bit.” After approximately four minutes, participants were stopped, their RAT was removed, and they were given manipulation check questionnaires. In the ego threat condition, participants were given a difficult version of the RAT. Before beginning, they were told that the RAT is a valid and reliable intelligence test used worldwide by schools and businesses to predict future success. Past research, they were told, has demonstrated that scores on the RAT predict school achievement (such as grade point average) as well as future earning potential. Participants were given a four minute time limit, after which the experimenter returned and scored their test with a red marker. He left the answer key with the participants for approximately one minute so that they “could see what the *correct* answers are.” This method allowed us to give veridical failure feedback (mode correct on the difficult version was 0 out of 12) and also allowed us to provide falsified average scores of college students across the U.S. (which were listed as 7.2 correct out of 12). This procedure reliably induces threat to the self (Heatherton & Vohs, 2000; Vohs & Heatherton, 2001). Subsequent to the RAT, participants completed the SSES (Heatherton & Polivy, 1991) and the Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988) as ego threat manipulation checks.

Next participants joined the confederate for a 10 minute interaction, which was guided by questions taken from Sedikides, Campbell, Reader, and Elliot (1999). For the first minute of the interaction, participants asked and answered low-intimacy questions, such as “What is your hometown?” For the next three minutes, participants asked and answered moderately intimate questions such as “What is something embarrassing that has happened to you recently?” For the last six minutes, participants asked and answered high-intimacy questions, such as “What is something about you that no one else knows?” The structure of the interaction, then, leads participants to gradually feel closer to their interaction partner, in a manner similar to the growth in intimacy that occurs in naturally-formed relationships (Sedikides et al., 1999). The confederate’s answers were uniform, in that he answered similarly throughout all the interactions, but his answers were also veridical in that they represented his true responses.

After the interaction, participants were separated from the confederate and asked to complete a social comparison questionnaire, in which they compared themselves to the confederate on 16 items. These items were taken from a list of most and least ambiguous traits (Hayes & Dunning, 1997). We chose traits that were thought to map onto processes underlying different perceptions of trait high and low self-esteem people

after threat; these traits included sophisticated and dominant (ambiguous traits), along with talkative and quick-tempered (unambiguous traits). Participants read instructions that asked them to compare themselves to their interaction partner (the confederate) on each trait and indicate whether they thought they possessed *much more*, *somewhat more*, *equal to*, *somewhat less*, or *much less* of the trait than did their partner. These choices were scored from -2 to +2, moving from *much more* to *much less*. Participants completed one questionnaire in which they compared themselves to their interaction partner and a second form in which they compared themselves (using the same traits) to “people in general.” After the social comparison forms, participants completed a second SSES (Heatherton & Polivy, 1991). Last, participants were debriefed and thanked.

RESULTS

Manipulation Checks

Participants' trait self-esteem and mood scores after the ego threat or control conditions were assessed to check for the influence of the manipulations. A regression model in which trait self-esteem scores (centered), ego threat condition (coded -1 for control condition and 1 for ego threat condition and then centered), and their two-way interaction used to predict scores on the PANAS (Watson et al., 1988) and overall SSES scores. As expected, we found a significant main effect of ego threat condition, $t(39) = 1.98, p = .05, \beta = -.25$, such that state self-esteem scores were lower after threat. We also found a main effect of trait self-esteem scores, $t(39) = 2.16, p < .04, \beta = .81$, but no trait self-esteem \times condition interaction, $t(39) < 1$. PANAS scores also showed the expected pattern, such that negative affect scores increased as a function of receiving ego threat treatments, $t(39) = 2.05, p < .05, \beta = .22$, while positive affect scores decreased somewhat, $t(39) = 1.89, p = .066, \beta = -.18$. There were no main effects of trait self-esteem or significant interactions of trait self-esteem \times ego threat condition on positive or negative affect scores, $ts < 1$.

Social Comparisons

We next tested whether social comparisons against specific and generic targets differed as a function of ego threat condition, self-esteem, and their interaction. We computed an overall social comparison index by aggregating comparisons on positive traits and adding them to the negative trait scores, which were first reverse-scored. Higher numbers indi-

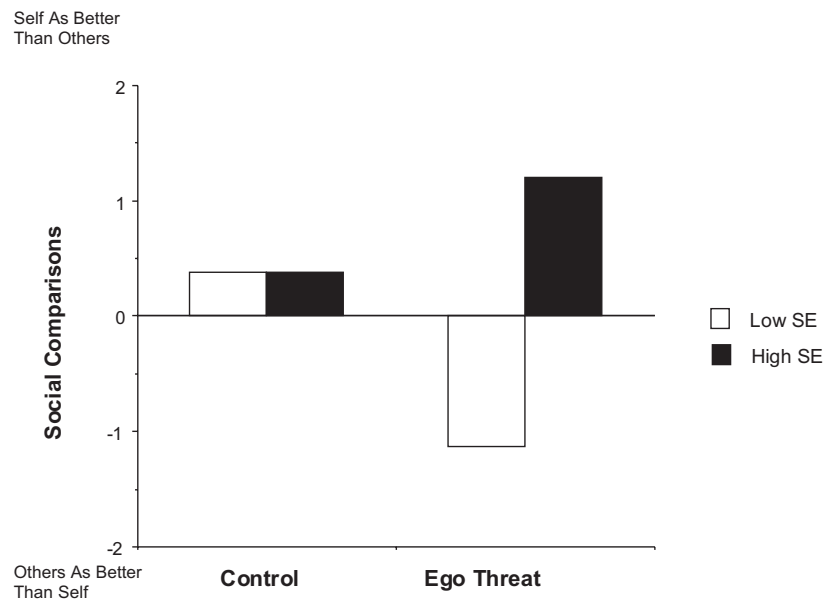


FIGURE 1. Average Social Comparisons Against the Confederate as a Function of Self-Esteem and Ego Threat Condition, Study 1.

Note. Participants' trait self-esteem scores were subjected to a median split to create High and Low Self-Esteem categories.

cate seeing the self as better than the comparison target, whereas lower numbers indicate seeing the self as worse than the comparison target. We used a multivariate multiple regression model (Davison & Sharma, 1990) with trait self-esteem, ego threat condition, and their interaction to predict comparisons against the confederate as well as comparisons against generic targets. We found that the trait self-esteem \times ego threat interaction was again a significant predictor across both measures, $F(2, 38) = 7.03, p < .01$. Univariate tests confirmed that the trait self-esteem \times ego threat interaction predicted comparisons against the confederate, $F(1, 39) = 11.36, p < .04$, as well as comparisons against others, $F(1, 39) = 4.62, p < .04$, although the former effect appeared to be stronger (see Figures 1 and 2). There was also a marginal effect of trait self-esteem scores for comparisons against the confederate, $F(1, 39) = 3.61, p < .07$, whereas the main effect of trait self-esteem for generalized comparisons and the main effect of threat condition for both types of comparisons were nonsignificant, $F_s < 2.83, p_s > .10$. Subsidiary analyses showed that there

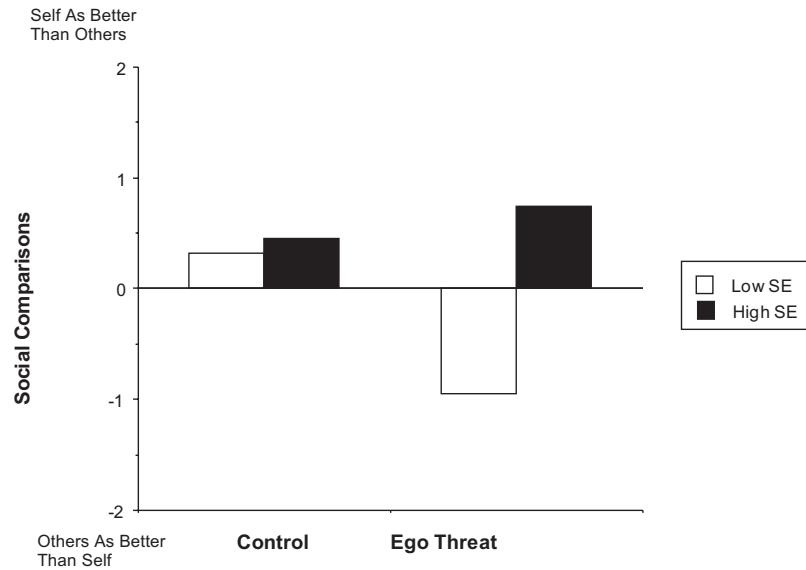


FIGURE 2. Average Social Comparison Against Generalized Others as a Function of Self-Esteem and Ego Threat Condition, Study 1.

Note. Participants' trait self-esteem scores were subjected to a median split to create High and Low Self-Esteem categories.

were no differences in social comparisons against either the confederate or generalized others in the control condition, $t_s(39) < 1$, $\beta_s < .12$, whereas the relationship between trait self-esteem scores and social comparisons was significant for both comparisons against the confederate, $t(20) = 5.61$, $p < .01$, $\beta = .78$, and against generalized others, $t(20) = 3.55$, $p < .01$, $\beta = .62$, such that higher trait self-esteem was related to more downward comparisons and lower trait self-esteem was related to more upward social comparisons.

Self-Esteem Change

We next tested whether state self-esteem changed from after the manipulation to after completing the social comparison form. To do so, we entered trait self-esteem scores, ego threat condition, their interaction, as

well as (centered) state self-esteem scores (post-manipulation) to predict state self-esteem scores as assessed after participants completed their social comparisons. In this model, all four predictors were significant predictors of post-comparison state self-esteem scores: trait self-esteem main effect, $t(38) = 2.54, p < .01$, ego threat condition main effect, $t(38) = 2.12, p < .05$, state self-esteem scores (post-manipulation), $t(38) = 5.58, p < .01$, and ego threat \times trait self-esteem interaction, $t(38) = 3.82, p < .01$. Analyses within experimental condition showed that there was no effect of trait self-esteem in predicting post-comparison state self-esteem scores among nonthreatened participants, $t < 1$, but it was a significant and positive predictor among threatened participants, $t(19) = 3.60, p < .01, \beta = .47$. As seen in Table 1, threatened participants with high trait self-esteem showed a rebound in state self-esteem after making social comparisons, whereas their low trait self-esteem counterparts showed no such recovery.

We also related social comparisons to state self-esteem reports and found them to be reliably correlated in terms of social comparisons with their interaction partner, $r(43) = .30, p < .05$, but not in terms of comparisons to generic others, $r(43) = .12, ns$. As expected, the significant correlation was driven by threatened participants, $r(22) = .43, p < .05$, but was nonsignificant for control participants, $r(21) = .04$. Thus, threatened participants with high trait self-esteem seemed to use the presence of the other person for their own good, such that their evaluations that they were superior than the confederate aided them in feeling better about themselves.

DISCUSSION

In Study 1, we found evidence supporting the hypothesis that people with high and low trait self-esteem engage in different social comparisons after threat. In the absence of threat, there was no difference in social comparisons as a function of trait self-esteem. In contrast, when defending the self against threat, trait high self-esteem people thought of themselves as better than of others, whereas trait low self-esteem people thought better of others than of themselves. Moreover, these effects appeared to be stronger for comparisons against an interaction partner than comparisons against others in general.

We also found evidence for a self-reparative effect of social comparisons against the interaction partner, but only for threatened trait high self-esteem participants. Trait high self-esteem participants who defended the self by making downward social comparisons against their interaction partner showed levels of state self-esteem similar to nonthreatened high self-esteem participants. Threatened trait low self-esteem participants, conversely, did not show reparative effects af-

TABLE 1. State Self-Esteem Scores (Post-Manipulation and Post-Social Comparisons); Study 1

	Low Self-Esteem		High Self-Esteem	
	Control	Ego Threat	Control	Ego Threat
State Self-Esteem				
Post-Manipulation				
Mean	69.9	64.9	76.3	68.8
SD	7.4	11.3	6.2	14.6
State Self-Esteem				
Post-Social Comparisons				
Mean	67.0	65.0	73.5	76.8
SD	6.3	12.7	6.8	10.0

Note. Participants' trait self-esteem scores were subjected to a median split to create High and Low Self-Esteem categories.

ter making their social comparisons, most likely because their response was to place themselves below others. These results are congruent with the notion that the effects of threat in terms of social comparisons go beyond the immediate situation and comparisons to the interaction partner to affect evaluations of generalized others as well.

STUDY 2

With supportive evidence from Study 1 that different social comparisons are exhibited in response to threat among people with trait high and low self-esteem, we sought to connect social comparisons to interpersonal perceptions. Our past research (Vohs & Heatherton, 2001) indicated that temporary changes in the self-concept that follow a self-image threat have strong interpersonal consequences. Specifically, we found that becoming more interdependent (i.e., seeing the self as related to others) predicted more positive interpersonal perceptions, whereas becoming more independent (i.e., seeing the self as unique and different from others) predicted more negative interpersonal perceptions. These changes in self-concept were furthermore predicted from the combination of self-esteem and ego threat, such that trait low self-esteem threatened people became more interdependent after threat whereas trait high self-esteem threatened people became more independent after threat. In a similar fashion, we predicted in the current study that changes in the way that people with trait high and low self-esteem compare themselves

to others would lead to differences in interpersonal perceptions (e.g., likability).

Using a two-part design, participants in Study 2A were either exposed to threatening or nonthreatening manipulations, as in Study 1. Then these participants were videotaped answering questions that prompted them to make social comparisons. For part two of the design, we showed these videotapes to a second set of participants (Study 2B) and asked them to rate the likability of Study 2A participants. We predicted that participants with trait high self-esteem who had been threatened would make more downward social comparisons during the videotaped interview and would be seen as unlikable by raters in Study 2B. Conversely, we predicted that trait low self-esteem participants who had been threatened would make upward social comparisons and be judged as quite likable by raters.

We should note that although the effects in Study 2 appeared to be somewhat stronger for comparisons against an interaction partner than for comparisons against generalized others, we nevertheless asked participants in Study 2A to compare themselves against generic others. We did this because we wanted to videotape participants' answers to the social comparison questions and it would have been disadvantageous to the validity of our study to ask participants to compare themselves aloud on videotape to a specific peer (due to social desirability concerns, social norms for politeness, etc). Given that Study 2 demonstrated that comparisons against generalized others showed the same pattern as comparisons against an interaction partner, we decided to follow the conservative but more ecologically-valid strategy of asking participants to compare themselves against generalized others.

METHOD: STUDY 2A

Participants

Forty-nine male undergraduates participated in exchange for partial course credit.

Procedure

Participants came to the lab individually, where they were met by the experimenter. Participants were asked to complete a trait self-esteem scale (Fleming & Courtney, 1984, based on Janis & Field, 1959; $M = 129.92$, $SD = 19.11$), after which they were given either ego threat or control condition manipulations in the same fashion as used in Study 1 ($Mode = 1$ correct out

of 12 on the difficult version of the RAT). After the manipulation, participants complete the SSES (Heatherton & Polivy, 1991) and the 24-item mood questionnaire that was used in Study 1 (Vohs & Heatherton, 2001). After completing the ego threat manipulation checks, participants were asked to verbally answer questions while seated in front of a video camera. The camera was in full view, standing about 4 feet away from the participants.

During the interview, participants were asked to compare themselves to "other people [they] know" with regard to eight traits. These traits were: sophisticated, idealistic, thoughtful, demanding, impractical, dominant, sensitive, and ambitious. Participants stated whether they considered themselves to possess the trait *much more*, *somewhat more*, *equal to*, *somewhat less*, or *much less* than others. In a second part of the videotaped interview, participants also indicated whether they agreed or disagreed (and to give an explanation for their response) with four statements from Singelis's (1994) Self-Construal Scale (SCS), which mapped onto independent or interdependent self-construals. For instance, participants asked to choose whether the statement, "I often have the feeling that my relationships with others are more important than my own accomplishments" describes them and why it does or does not fit them. Last, participants were debriefed and thanked.

METHOD: STUDY 2B

Participants

Forty-nine male undergraduates participated in exchange for partial course credit.

Procedure

Participants came to the lab individually and were led into a small, windowless room with a television and VCR. After completing an initial questionnaire unrelated to the current analyses, they were told that they would be rating a videotape of a person being interviewed. Videotapes were selected randomly and each participant in Study 2B viewed and rated only one tape. Before beginning, however, a short clip of the videotape the participant was shown to the participant; after five seconds of viewing the tape, the tape was stopped and the participant was asked whether he was previously acquainted with the interviewee. This step was used because we wanted to approximate the settings of our previous studies, in which interpersonal perceptions are made between unac-

quainted participants who had only been exposed to one another as a result of the experiment. In no cases were participants in Study 2B already acquainted with the participant from Study 2A whose videotape they were asked to rate.

At this point, the experimenter exited the room and left the participant to watch the section of the videotape in which participants from Study 2A provided social comparison statements. At the end of that section of the videotape, the experimenter re-entered, stopped the VCR, and gave the participant a questionnaire form on which to rate the interviewee. Participants were asked to evaluate the interviewee's likability (on a scale from 0-100, where higher numbers meant more likability). Last, participants were debriefed and thanked.

RESULTS: STUDY 2A

Manipulation Checks

We used scores on the SSES and the mood scale to assess whether the manipulations had their intended effects. Using a regression model in which centered trait self-esteem scores, centered ego threat condition scores (coded as $-1 = \text{control condition}$ and $1 = \text{ego threat condition}$), and their two-way interaction served as predictors, we found that scores on the SSES varied as a function of ego threat condition, $t(45) = 2.48, p < .02, \beta = -.24$, such that scores were lower after threat. SSES also varied with trait self-esteem scores, $t(45) = 6.87, p < .001, \beta = .70$, but did not vary as a function of the trait self-esteem \times threat interaction, $t < 1$.

Past research using the 24-item mood measure (Heatherton & Vohs, 2000; Vohs & Heatherton, 2001) has revealed four mood factors: Positive Affect (cheerful, excited, lighthearted, euphoric, happy, peppy, enthusiastic, lively, elated, and content), Anxiety (fearful, apprehensive, jittery, anxious, uncertain, nervous, and confused), Dysphoria (distressed, hopeless, sad, and depressed), and Hostility (annoyed, irritated, and bored). We computed scores for each of these factors and analyzed them using the same regression model that was used to predict SSES scores. Positive affect scores were lower after ego threat as well, $t(45) = 1.85, p = .07, \beta = .25$, and they too varied with trait self-esteem scores, $t(45) = 2.62, p < .02, \beta = .37$, but not with the interaction, $t < 1$. Hostility scores were somewhat higher after threat, $t(45) = 1.64, p < .10, \beta = .21$, and were higher among trait low self-esteem participants, $t(45) = 3.56, p < .01, \beta = -.47$, but they did not vary as a function of the trait self-esteem \times ego threat condition interaction, $t < 1$. Anxiety showed similar patterns of being higher after threat, $t(45) = 2.01, p = .05, \beta = .25$, and higher for those lower in trait self-esteem, $t(45) = 4.19, p < .01, \beta = -.53$. Dysphoria scores

were not predicted by the ego threat manipulations, $t(45) = 1.26, p > .20$, but they were predicted by trait self-esteem scores, $t(45) = 4.37, p < .01, \beta = -.55$. Neither anxiety nor dysphoria scores were predicted by the trait self-esteem \times threat interaction, $t_s < 1$. In sum, our manipulations succeeded in lowering participants' state self-esteem and increasing their negative mood state overall.

Social Comparisons

Next we tested whether social comparisons made during the interview were predicted from the combination of self-esteem and ego threat condition. We accomplished this by first assigning a numeric value to the verbal evaluations participants gave, using the same numerical structure as was used in Study 1. Rating the self as possessing the trait *much more than others* was assigned a +2, *somewhat more than others* was assigned a +1, *equal to others* was assigned a 0, and so on. Then we recoded the negatively-valanced traits so that they represented positive traits, added all the social comparison values together, and averaged them.

Using a regression model that included trait self-esteem scores, ego threat condition (both centered), and their interaction to predict social comparisons, we found again that social comparisons varied as a function of the trait self-esteem \times ego threat condition interaction, $t(45) = 2.05, p < .05, \beta = .27$, which replicates the findings from Study 1. In this model, the main effect of trait self-esteem scores was also a factor, $t(45) = 2.58, p < .04, \beta = .34$, but ego threat condition was not, $t < 1$. A breakdown of this effect revealed no significant relationship between trait self-esteem scores and social comparisons in the control condition, $t(21) < 1$, but a significant relationship in the threat condition, $t(24) = 2.12, p < .04, \beta = .40$. The direction of the beta weight indicates that higher trait self-esteem scores were related to more downward (self as better than others) comparisons.

Self-Construals

In an ancillary set of analyses in Study 2A, we computed self-construal scores to see if they also varied as a function of trait self-esteem and threat. A judge who was blind to the hypotheses and condition was trained by the first author (following the answer key to the SCS; Singelis, 1994) to code Study 2A participants' answers as to whether they indicated an independent or interdependent self-construal. Answers affirming descriptions of an independent self-construal were given a numerical value of +1 whereas answers affirming descriptions of an in-

terdependent self-construal were assigned a value of -1. Then the four items were added together and averaged to create a self-construal index.

Using a regression analysis with trait self-esteem scores, ego threat condition (both centered), and their interaction to predict self-construals, we found a significant interaction term, $t(45) = 1.95, p < .05, \beta < .27$. There was a significant main effect of trait self-esteem $t(45) < 2.16, p < .04, \beta = .30$, but ego threat condition was not a significant factor, $t < 1$. Analyses within condition showed that there was no effect of trait self-esteem scores among control condition participants ($M_s = -.05$ and $.06$ for trait low and high self-esteem participants, respectively), $t < 1$, but there was a significant effect among threatened participants, $t(24) = 3.96, p < .01, \beta = .63$. Trait high self-esteem threatened participants had a more independent self-concept ($M = .31; SD = .11$) than threatened trait low self-esteem participants, who exhibited a more interdependent self-concept ($M = -.35; SD = .09$). These results replicate our past work (Vohs & Heatherton, 2001) and provide a counterpart to the social comparisons exhibited by these same participants.

RESULTS: STUDY 2B

Another goal of Study 2 was to see whether social comparison differences would account for differences in likability and personality ratings as a function of trait self-esteem and ego threat conditions. First, we assessed whether trait self-esteem, ego threat condition, and their interaction predicted likability ratings. Using a regression model with these three predictors, we found that likability ratings were predicted by the two-way interaction of trait self-esteem and threat condition, $t(44) = 1.96, p < .056, \beta = -.26$, as well as the main effect of trait self-esteem scores, $t(44) = 3.12, p < .01, \beta = -.41$. The main effect of ego threat condition was not significant, $t(44) = 1.11, p > .27$. Likability scores were higher for trait low self-esteem participants in the threat condition ($M = 82.78; SD = 7.96$) than for trait high self-esteem participants in the threat condition ($M = 55.83, SD = 17.56$), $t(23) = 3.31, p < .01, \beta = -.57$. As expected, there was no difference in the likability of nonthreatened participants, $t(21) = 1.02, p > .32$ (M low self-esteem participants = 75.00, $SD = 7.50$; M high self-esteem participants = 72.62, $SD = 7.73$).

The significant effects of trait self-esteem scores \times ego threat condition on social comparisons and of trait self-esteem scores \times ego threat condition on likability allowed us to next test whether social comparison scores mediated the link between self-esteem \times ego threat and likability ratings. Hence, we next turned to the question of whether differences in social comparisons after threat could account for differences in participants' likability.

First, we calculated whether likability scores and social comparison scores were correlated, which they were, such that more downward social comparisons were related to lower likability, $r(48) = -.41, p < .01$. Next, using social comparisons, trait self-esteem scores, ego threat condition (all three variables centered), and the two-way interaction of trait self-esteem \times ego threat as predictors in a model in which likability scores were the predicted variable, we found some evidence for mediation on the part of social comparisons. Specifically, when social comparisons were entered into the model, the effect of the trait self-esteem and ego threat combination diminished to nonsignificance, $t(43) = 1.13, p > .26$, whereas the effect of social comparisons remained mostly significant, $t(43) = 1.88, p < .07, \beta = -.26$. The effect of trait self-esteem in this model was also still significant, $t(43) = 2.82, p < .01, \beta = -.36$, and the effect of threat condition was again not a factor, $t(43) = 1.35, p > .18$ (see Table 2). However supportive these results were, further tests using Sobel's (1982) equation for mediation did not yield significant results, which means that statements about the mediating role of social comparisons in likability are more provisional than conclusive in nature.

GENERAL DISCUSSION

When high and low self-esteem people are threatened, they engage in different forms of social comparison, show shifts in their self-concepts, and are viewed as differentially likable by others. Across two studies, trait high and low self-esteem people who were not engaging in self-defense made similar types of social comparisons; after threat, however, trait high and low self-esteem people demonstrated vastly different reactions to threat. Study 1 showed that after threat, trait high self-esteem people think of themselves as better than a newly-acquainted interaction partner, whereas trait low self-esteem people saw their partner in a more favorable light than they saw themselves. Study 1 also showed that these patterns of social comparisons emerge among threatened high and low self-esteem people when comparing themselves to people in general. Furthermore, downward and upward social comparisons after threat were especially pronounced on ambiguous traits, which have unclear or fuzzy definitions and thus allow for different interpretations or biases to show through (e.g., Hayes & Dunning, 1997; Kunda & Sherman-Williams, 1993). Just as in the current research, the use of ambiguous traits allowed immediate reactions to threat to emerge, much in the same way that people allot greater importance to behaviors at which they are successful while reducing the importance of behaviors on which they perform poorly (Wentura & Greve, this volume).

Study 1 also related trait self-esteem and ego threat to reparative changes in state self-esteem. We found that after making downward so-

TABLE 2. Zero-Order Correlations Between Self-Esteem, Social Comparisons, and Likability Ratings; Study 2

Measure	Control Condition Participants			Ego Threat Participants		
Self-Esteem Scores	—			—		
Social Comparisons	-.23	—		.56*	—	
Likability	-.22	-.03	—	-.57*	-.59*	—

Note. "Social Comparisons" represents Study 2A participants' social comparisons given via statements during the videotaped interview. Higher numbers indicate that the participant made downward comparisons (self as better than others), whereas lower numbers indicate that the participant made upward comparisons (others as better than self). "Likability" represents Study 2A participants' likability ratings as judged by participants in Study 2B. "Self-Esteem Scores" represents the full range of scores on the trait self-esteem scale (Fleming & Courtney, 1984, based on Janis & Field, 1959). For control condition correlations, degrees of freedom = 23, for ego threat condition correlations, degrees of freedom = 25. * $p < .01$.

cial comparisons, trait high self-esteem threatened participants reported increased state self-esteem, whereas trait low self-esteem threatened participants showed no change in self-esteem from after the ego threat manipulation. This effect appeared to be most closely tied to comparisons against their interaction partner, and did not extend to comparisons against generalized others. Hence, trait high self-esteem people helped themselves feel better by disparaging others, a finding that echoes work by Fein and Spencer (1997) who similarly found that high self-esteem people who responded to negative feedback with interpersonal discrimination showed self-esteem reparative effects.

Study 2 investigated differences in social comparisons after threat among trait high and low self-esteem people and differences in likability. Participants who were higher in trait self-esteem and who felt threatened made downward social comparisons and were also seen as less likable. In contrast, participants who were lower in trait self-esteem and who felt threatened made upward social comparisons and were viewed as more likable. High and low self-esteem people also endorsed different self-construals after threat (see also Vohs & Heatherton, 2001). Threatened participants who were higher in trait self-esteem agreed more with statements signifying an independent self-construal, whereas threatened participants who were lower in trait self-esteem agreed more with interdependent self-construal statements. Perhaps not surprisingly, self-construals and social comparisons were significantly correlated, $r(49) = .43, p < .01$, such that participants who made more downward social comparisons (and fewer upward social comparisons) also tended to endorse an independent self-concept (and less of an interdependent self-concept). Changes in seeing the self as more or less

independent/interdependent after threat may be pertinent to other research on changes in self-perceptions, some of which indicates that people who have problems with volitional control (who are perhaps not unlike trait low self-esteem people after threat, who cannot seem to engage in appropriate emotion regulation) exhibit weaker self-as-autonomous associations under threat (Koole, this volume). In sum, participants with high trait self-esteem who felt threatened appeared to defend the self by thinking of themselves as better than others and were viewed as less likable. Participants with low trait self-esteem, in contrast, compared themselves less favorably to others and were viewed as more likable.

SELF-DEFENSE MOTIVES AND RELATIONSHIP CLOSENESS

Current and past data on trait self-esteem, ego threat, and social comparisons have found robust relations to likability among new acquaintances, but how would likability be affected among friendship dyads? Would friends view ego-threatened participants differently after threat, as we find using newly-acquainted partners of our high and low self-esteem participants? From one perspective, it may be that trait high self-esteem people may be forgiven by their friends for acting unlikable after threat, as friendships allow and sometimes encourage forgiveness after self-presentational mistakes (Hodgins, Liebeskind, & Schwartz, 1996). Moreover, tendencies toward seeing the self as better off than others (e.g., the self-serving bias) are less pronounced among close relationship partners than among distant interaction dyads (Sedikides et al., 1998), thus suggesting that the effects obtained among nonfriendship dyads may not extend to friendship dyads. From another perspective, however, decades of self-presentational research (e.g., Schlenker, 1975) reveal that self-presentations in the context of intimate others have the greatest reality constraints and strictest modesty norms (Tice, Butler, Muraven, & Stillwell, 1995) suggesting that, similar to findings among new acquaintances, an arrogant, unlikable self may not win the support of friends. With regard to social comparison effects, a recent theory on the role of the closeness of the comparison target (Stapel & Schwinghammer, this volume) predicts that downward comparisons against a close other would yield the greatest boost to self-evaluations, whereas upward comparisons would only intensify negative self-evaluations. This theory thus suggests that social comparisons against a friend would yield self-evaluation consequences similar to that found in the current research using nonfriendship dyads.

Trait low self-esteem threatened people are viewed quite favorably by strangers, a finding that would seem to suggest that their response to threat would go over well with friends. However, repeatedly thinking of

the self as worse than others could lead to perceptions that one is as clingy, insecure, or constantly needing reassurance, which lead to devaluation and dislike (Joiner, Alfano, & Metalsky, 1992; Joiner & Metalsky, 1995). Nonetheless, it would seem to be a fairly prudent short-term strategy to boost one's perceptions of friends vis-à-vis oneself if one was mainly concerned with positive interpersonal perceptions. Given the beneficial effects of "basking in reflected glory" (Cialdini et al., 1976), which can be obtained without incurring the social penalties that can accompany directly aggrandizing the self (e.g., Schlenker, 1975), as well as the positive effects of ingratiation via other-enhancement (Jones & Wortman, 1973; Gordon, 1996), thinking highly of one's friends may be the safest way to boost self-appraisals. Its costs to the self, however, make it a difficult route to take, one that is not likely to be chosen among people for whom feeling good about the self is of utmost importance.

Relationship closeness may also interact with gender to influence the types of effects that self-esteem and ego threat have on social comparisons and likability. Joiner's work (Joiner et al., 1992) is relevant to this notion, in that low self-esteem men—but not women—are viewed in a negative manner when they frequently seek reassurance. Gardner et al. (2002) also found gender moderated the effects of self-construals on self-evaluative responses to social comparisons, noting that women were more likely than men to show the others-as-self pattern of feeling positively about others' successes. Women and men also differ in the scope of their relational worlds, such that men's interdependence involves the larger social context whereas women's interdependence revolves more around dyadic relationships (Gabriel & Gardner, 1999). Our past work also reveals differences in how men and women are viewed in a naturalistic setting (Vohs & Heatherton, in press). Although the same pattern of interpersonal perceptions are found for men in the laboratory as in a field setting, different patterns emerge for women, suggesting that the social context matters more for perceptions of women than for men.

CONCLUDING REMARKS

The current work adds to a growing literature that demonstrates that the intrapsychic and interpersonal consequences of self-esteem can be at odds. Trait high self-esteem, especially when threatened, can lead to deleterious and unsavory outcomes, such as increased ingroup favoritism, bullying, unlikability, and negative personality perceptions (e.g., Baumeister et al., 2003; Heatherton & Vohs, 2000; Vohs & Heatherton, in press). On the converse, trait low self-esteem can be advantageous, relating to more realistic goal-setting behaviors, more likability, and more flexibility in being able to respond to social demands (Baumeister,

Heatherton, & Tice, 1993; Heatherton & Vohs, 2000; Koole, Kuhl, Jostmann, & Vohs, in press; Vohs & Heatherton, in press). In other words, there is a tension between looking out for the self and looking out for our relationship partners, and after threat people with high self-esteem are especially motivated to defend the self, perhaps at the cost of straining interpersonal relations. By contrast, those with low self-esteem respond to threat with anemic attempts to defend the self, although doing so seems to confer benefits to their relationships. Our research depicts the asymmetry between getting ahead and getting along, and highlights the importance of considering how strategies to defend the self influence the social worlds in which people live.

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