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High self-esteem buffers negative feedback: Once more with feeling

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In this article, I report three studies showing that global self-esteem influences people's emotional reactions to negative outcomes. Using social outcomes as well as personal ones (Study 1), naturally occurring outcomes as well as experimentally induced ones (Study 2), and implicit self-feelings as well as self-reported ones (Study 3), I show that high-self-esteem people suffer less emotional distress when they encounter negative outcomes than do low-self-esteem people. I conclude that global self-esteem plays an important role when people confront negative feedback and rejection.

Keywords: Self-esteem; Emotion; Failure.

Self-esteem is one of psychology's most polarising constructs. Whereas some researchers maintain that high self-esteem is essential to human functioning and predicts important life outcomes (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Schimel, Landau, & Hayes, 2008), others believe it is of limited value and may even be a liability (Baumeister, Campbell, Krueger, & Vohs, 2003; Baumeister, Smart, & Boden, 1996; Heatherton & Vohs, 2000). In between these two extremes lie a variety of intermediary positions that seek to specify when high self-esteem and its pursuit are beneficial or burdensome (e.g., Crocker & Park, 2004; Swann, Chang-Schneider, & McClarty, 2007).

In this paper, I examine the links between global self-esteem (i.e., people's overall feeling of affection toward themselves) and emotional reactions to positive and negative events. In previous research, my colleagues and I have shown that high-self-esteem people report less emotional distress when they encounter negative feedback than do low-self-esteem people (see Brown, 1993, 1998; Brown & Marshall, 2001, 2006, for reviews). This effect (a) has been replicated in the People's Republic of China (Brown, Cai, Oakes, & Deng, 2009); (b) occurs independently of the variance self-esteem shares with neuroticism (Brown & Marshall, 2001); (c) does not depend on whether people evaluate themselves positively in specific areas of their lives (Dutton & Brown, 1997); and (d) pertains only to self-evaluative emotions—such as feelings of pride or shame—and not emotions that are not self-relevant—such as happiness or sadness (Brown & Dutton, 1995; Brown & Marshall, 2001). In consideration of these findings, we have argued that high self-esteem functions primarily to enable people to *fail* without feeling bad about themselves (Brown, 1998; Brown & Marshall, 2001, 2006).

We are not the only investigators to find that high self-esteem buffers emotional distress. In one study, Holland, Meertens, and Van Vugt (2002, Experiment 2) gave some participants ego-threatening feedback and then measured their psychological discomfort. As expected, ego-threatening feedback led low-self-esteem participants to feel uncomfortable and uneasy, but did not affect the emotions of high-self-esteem participants. In a similar vein, Park, Crocker, and Kiefer (2007) found that, among participants who base their feelings of self-worth on academic performance, only those with low self-esteem felt worse about themselves after being led to fail an achievement-related test.

In sum, previous research shows that high self-esteem buffers negative self-relevant feedback. Nonetheless, several issues remain to be addressed. First, most of the evidence supporting an emotion-buffering role for high self-esteem comes from studies in which participants experience success or failure at an achievement task. Leary and colleagues have argued that interpersonal outcomes are even more likely to alter people's feelings of self-worth, and have speculated that self-esteem monitors one's inclusion in social relationships (e.g., Leary, 2006; Leary & Downs, 1995; Leary, Tambor, Terdal, & Downs, 1995). Guided by these arguments, Study 1 examined whether high self-esteem can also buffer interpersonal negative feedback.

A second limitation of previous research is a reliance on laboratory studies that use random assignment to conditions. This procedure has obvious benefits when it comes to making causal conclusions, but it does lack ecological validity insofar as experimental settings do not mirror real-world outcomes. I conducted a second study to examine whether self-esteem buffers emotional reactions to naturally occurring social outcomes.

Finally, previous research regarding the stress-buffering role of high self-esteem has tended to use self-reports of emotional states (but see DeHart & Pelham, 2007; Park & Crocker, 2008). This bias

leaves open the possibility that self-presentational biases may lead high-self-esteem people to "say" they don't feel bad about themselves after they fail, even though they really do (Baumeister, Tice, & Hutton, 1989). I conducted a third study to investigate this issue, assessing implicit attitudes toward the self that are less subject to self-presentational biases.

STUDY 1

In Study 1, participants were randomly assigned to receive either positive or negative feedback following either an interpersonal encounter (social acceptance or rejection) or an intellectual task (achievement success or failure). Afterward, they rated their feelings of self-worth. I predicted that self-esteem would buffer the negative emotional consequences of negative feedback, regardless of whether the feedback was social in nature or achievement related.

Method

Participants
The participants were 78 female undergraduates attending the University of Washington (UW).[1] All participants had completed the Rosenberg (1965) self-esteem scale during an earlier, mass-testing session. This widely used measure of self-esteem focuses on general feelings toward the self without reference to any specific quality or attribute. Participants complete the scale by indicating their agreement with each of 10 items (e.g., "I take a positive view of myself"; "All in all, I am inclined to feel that I am a failure") on 4-point scales ($0 =$ strongly disagree, $3 =$ strongly agree). After reversing the scoring for 5 negatively worded items, a total self-esteem score is found by summing the 10 responses. The theoretical range of scores with this procedure is 0–30. The mean in the present sample was 22.95, with a standard deviation of 4.82.

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[1] All of the participants were females because I wanted the conversation partners to be of the same sex, and there were too few males enrolled in introductory psychology courses to fill all experimental conditions.

Materials and procedure

Social feedback. Participants ($N = 42$) in the social-feedback conditions were greeted by a female experimenter who explained that they would be having a brief conversation with another participant, and that afterward they would complete some questionnaires regarding their perception of the other person and receive information about the other person's perception of them. To protect their privacy, all participants were assigned a number to be used on all forms and questionnaires.

After ensuring that the two participants did not know one another, the experimenter handed one of the participants a set of note cards with some suggested conversation topics (e.g., "What is your favourite thing to do in your spare time?"; "If you could make one change in the world, what would it be and how would you do it?"). She then left the room for 15 minutes while the participants engaged in conversation. When the conversation ended, the participants were taken to separate rooms and instructed to write a paragraph or two conveying their impression of their partner's social competence.

The experimenter collected these impressions and returned a few minutes later to show each participant the paragraph (allegedly) written by the other participant. In fact, these hand-written paragraphs were prepared in advance. The evaluations were modelled after ones developed by Swann, Stein-Seroussi, and Giesler (1992) and used by Bernichon, Cook, and Brown (2003). The positive evaluation read:

This person seems socially self-confident. She appears at ease with people she doesn't know very well. She seems to have little doubt about her social competence. That's pretty much all I can tell about her from her conversation.

The negative evaluation read:

From talking with this person she appears to be ill at ease in social situations. There are probably times when she is around other people and just doesn't know what to do or say. There are times when she likes being around people, but in some social situations she is uncomfortable and anxious.

Random assignment to conditions was used to determine whether the participants received the positive or negative evaluation.

After receiving this feedback, all participants evaluated the feedback (1 = *very negative*, 7 = *very positive*) and then indicated how proud, pleased with themselves, ashamed, or humiliated they presently felt (1 = *not at all*, 7 = *extremely*). After reversing the scoring for the two negative emotions, I averaged the four items to derive a single emotion score ($\alpha = .81$).

When both participants had completed the questionnaire, they were reunited. They were then debriefed, thanked, and excused.

Achievement feedback. Following procedures used by Brown and Dutton (1995; see also Brown & Marshall, 2001), participants in the achievement feedback conditions ($N = 36$) were greeted by an experimenter and then led into a small room equipped with a computer. The experimenter then left the participant alone, instructing her to indicate when she was through. Thereafter, all instructions and materials were presented on the computer, assuring participants of privacy during the remainder of the experiment.

At this point the participants learned they would be taking a test that measured an intellectual ability called integrative orientation. Integrative orientation was described as an ability to find creative and unusual solutions to problems. The ability was (allegedly) measured using the Remote Associates Test (Mednick, 1962). With this task, participants are shown three words (e.g., car – swimming – cue) and asked to find a fourth word that related to the other three (pool). Working interactively with the computer, participants completed three sample problems to ensure that they understood how the problems were solved. The experimental task was then administered. Using random assignment to conditions, half the participants received a set of easy problems (hereafter referred to as the success condition) and half received a set of difficult problems (hereafter referred to as the failure condition).

When the allotted time for working on the test had expired, the computer paused for several

seconds and delivered false feedback regarding the participant's performance. Participants who received easy problems learned that they had scored in the upper 87% of all UW students; those who received difficult problems learned that they had scored in the bottom 23% of all UW students. After receiving this feedback, participants evaluated their performance ($1 = $ *very poor*, $7 = $ *very good*) and rated their momentary feelings of self-worth using the same scale used by participants in the social-feedback conditions ($\alpha = .82$). Finally, they notified the experimenter when they were finished, and were debriefed, thanked, and excused.

Results and discussion

Manipulation check
All participants evaluated the feedback they received prior to rating their feelings of self-worth. I analysed these evaluations using multiple regression, with two categorical predictors, (Experimental Task: $-1 = $ Achievement, $1 = $ Social) and Feedback ($-1 = $ Positive, $1 = $ Negative), and one continuous predictor (self-esteem, centred around its mean). Interaction terms were included by calculating cross-product terms between the relevant variables. The only effect to reach significance was the main effect of feedback. Unsurprisingly, participants who received positive feedback judged the feedback to be more positive ($M = 6.00$, $SD = 1.32$) than participants who

received negative feedback ($M = 3.19$, $SD = 1.54$), $F(1,70) = 65.43$, $p < .001$, $\eta_p^2 = .48$.

Momentary feelings of self-worth
I hypothesised that negative feedback would create less emotional distress when self-esteem was high than when it was low, and that this effect would occur for social outcomes as well as achievement ones. To test these predictions, I repeated my regression analysis using feelings of self-worth as a criterion. The analysis revealed main effects of Feedback and Self-esteem (both ps $< .025$), as well as the predicted Feedback $\times$ Self-esteem interaction, $F(1, 70) = 8.20$, $p < .01$, $\eta_p^2 = .11$.

Figure 1 shows the predicted values for participants scoring one standard deviation above and below the mean on self-esteem. The left panel shows the results for the achievement task and the right panel shows the results for the social task. It is apparent that the form of the interaction is highly similar across the two tasks. Confirming this visual impression, the overall three-way interaction was not significant ($F < 1$), and simple effects tests showed a significant Feedback $\times$ Self-esteem interaction for the achievement task, $F(1, 70) = 4.28$, $p < .05$, $\eta_p^2 = .06$, and the social task, $F(1, 70) = 4.17$, $p < .05$, $\eta_p^2 = .06$. Finally the simple effect of Feedback was significant when self-esteem was low, $F(1, 70) = 13.54$, $p < .001$, $\eta_p^2 = .16$, but not when self-esteem was high $F < 1$, and the simple effect of Self-esteem was significant following
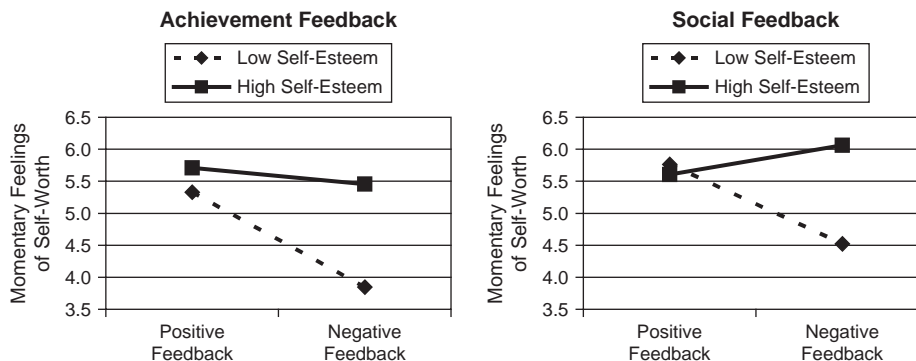

Figure 1. *Momentary feelings of self-worth as a function of self-esteem and outcome for achievement feedback (left panel) and social feedback (right panel): Study 1.*

negative feedback, $F(1, 70) = 20.44$, $p < .001$, $\eta_p^2 = .23$, but not following positive feedback, $F < 1$.

Summary

Previous research has shown that self-esteem buffers emotional reactions to negative feedback. Whether this effect occurs for social rejection has been left largely unexplored. In Study 1, participants experienced two types of feedback: Social feedback following an interpersonal encounter and achievement feedback following test performance. Regardless of whether feedback was social or personal, high-self-esteem participants were less distressed by negative feedback than were low-self-esteem participants.

STUDY 2

As noted earlier, the stress buffering effects of high self-esteem have heretofore been demonstrated largely in laboratory studies with random assignment to feedback conditions. Study 2 examined whether similar effects occur when naturally occurring outcomes are experienced. Study 2 addressed another issue of concern. Crocker and colleagues have shown that many people possess contingent self-esteem (Crocker, Karpinski, Quinn, & Chase, 2003; Crocker & Luhtanen, 2003; Crocker & Park, 2004; Crocker & Wolfe, 2001): They feel good about themselves when they "succeed" but bad about themselves when they "fail". These contingent feelings are more characteristic of people who care a lot about their performance in some domain than those who care little about whether they do well or poorly in some domain (James, 1890; Steele, 1997). If high-self-esteem people care less about their performance outcomes than do low-self-esteem people, this pattern of contingent self-esteem could explain why they are bothered less by negative feedback. Study 2 examined this possibility by having participants rate the importance they placed on

being socially accepted and popular. Although importance and contingent self-worth are not identical constructs, people who place a lot of importance on doing well in a domain generally have stronger emotional reactions to domain outcomes than do those for whom outcomes are of lesser import.

Study 2 addressed an additional issue. Previous research has shown that self-esteem predicts self-relevant emotional reactions to negative outcomes (e.g., feelings of pride and humiliation), rather than emotions that are not necessarily self-relevant (e.g., general feelings of happiness or sadness; Brown & Dutton, 1995; Brown & Marshall, 2001, 2006). Because prior demonstrations of this effect have only involved emotional reactions to achievement outcomes in a laboratory setting, the generality of this effect is not well established. Study 2 was conducted to address this gap by testing whether these effects occur when natural outcomes of an interpersonal nature are examined. I expected that, in comparison with low-self-esteem people, high-self-esteem people would feel less bad about themselves when they experienced negative outcomes, but would not feel less sad or disappointed.

Method

Participants

Thirty-six UW students enrolled in various upper-division psychology courses participated in exchange for course credit.[2] The students were blind to all experimental hypotheses prior to completing the study.

Measures and procedure

On the first day of class, the students completed the Rosenberg (1965) Self-Esteem Scale, and answered two questions regarding the importance they placed on being well liked and popular ("How important is it for you to have lots of friends and be well-liked?"; "How important is it for you to be popular?"). Both questions were answered on 5-point scales (1 = *not at all*, 5 = *a real lot*), and

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[2] Only eight of the participants were males, a number too low to allow for the testing of gender differences.

were averaged to create a measure of social importance.

One week later, they began completing nightly surveys by visiting a website. The surveys first asked participants to evaluate their day in terms of their social relationships ("How would you rate your day in terms of your social life and interactions with friends?") on a 7-point scale (1 = *extremely bad*, 7 = *extremely good*). Subsequently, participants indicated to what extent they were currently feeling each of 22 emotions using a 5-point scale (1 = *not at all*, 5 = *a lot*). Four of the emotions were the same used in Study 1 (ashamed, humiliated, pleased with myself, proud); the remaining 18 items were taken from the Positive and Negative Affect Scale (PANAS) developed by Watson, Clark, and Tellegen (1988).[3] These items measure general positive and negative emotional states (e.g., determined, enthusiastic, irritable, upset). The scale has been used to assess momentary reactions to positive and negative events, as well as more chronic emotional tendencies (Watson, 2000). As in Study 1, I reversed the scoring for the negative items and computed two overall scales: One representing feelings of self-worth ($\alpha = .67$), the other measuring general positive and negative feelings ($\alpha = .86$). The two emotion clusters were highly correlated, $r = .72$, $p < .001$.

Results and discussion

Preliminary analyses
Scores on the Social Importance Scale were marginally correlated with scores on the Rosenberg Self-Esteem Scale ($r = .29$, $p = .09$). The direction of the effect indicates that high self-esteem was associated with (marginally) more importance placed on social outcomes. Self-esteem was uncorrelated with daily assessments of social outcomes ($r = .22$, *ns*), and social importance and social outcomes were similarly uncorrelated ($r = .13$, *ns*).

Table 1. *Daily evaluation of social outcomes*

Scale value	Frequency	Percent
1	22	2.9
2	24	3.2
3	38	5.0
4	202	26.7
5	219	29.0
6	177	23.4
7	74	9.8
Total	756	100

Note: 1 = extremely bad; 7 = extremely good.

Table 1 shows responses to the "How was your day?" question. Most of the days were rated above the scale midpoint of four (signifying that the day was rated relatively positively), but a sizable number of days were also rated negatively. In fact, 28 of the 36 participants rated at least 1 day below the scale midpoint, and 18 of the 36 rated at least 2 days at 3 or less. Overall, the mean was 4.85, with a standard deviation of 1.35.

Main analyses
Because each participant contributed scores on 21 days, I used multilevel modelling to analyse the data, with self-esteem, social importance, and daily assessments of social outcomes as predictors. The first two predictors were centred around their respective grand mean, and the last predictor was centred around each participant's own mean across the 21 daily observations. Interactions were included by calculating relevant cross-product terms.

Daily feelings of self-worth. The first analysis, using daily feelings of self-worth as the criterion, revealed main effects of Self-esteem ($\beta = .56$, $p < .001$) and Social Outcomes ($\beta = .28$, $p < .001$), as well as the predicted Self-esteem × Social Outcome interaction ($\beta = -.11$, $p < .01$). The left-hand side of Figure 2 shows predicted values for participants scoring one standard deviation above or below the mean on both variables. As predicted, social outcomes had a stronger effect

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[3] The PANAS is comprised of 20 items, but two of the items, ashamed and proud, are self-relevant and represent what I have called feelings of self-worth. Accordingly, I used only the 18 remaining items for the general emotion measure (see also Brown & Marshall, 2001).
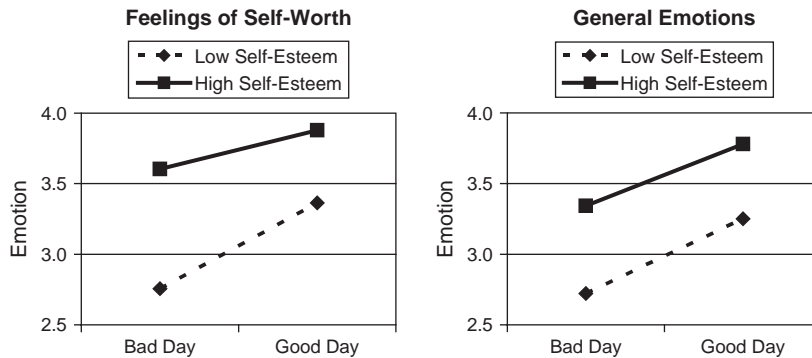
Feelings of Self-Worth

- ◆ - Low Self-Esteem
—■— High Self-Esteem

General Emotions

- ◆ - Low Self-Esteem
—■— High Self-Esteem

Figure 2. *Daily feelings of self-worth (left panel) and general emotions (right panel) as a function of self-esteem and daily social outcomes: Study 2.*

on low-self-esteem participants ($\beta = .38$, $p < .001$) than on high-self-esteem participants ($\beta = .17$, $p < .001$). Additional analyses revealed that the simple effect of self-esteem was stronger when participants experienced a bad day ($\beta = .66$, $p < .001$) than a good day ($\beta = .45$, $p < .001$). Considered together, these findings provide evidence that high self-esteem buffers the negative effects of negative social outcomes in daily life.

The Social Outcomes × Social Importance interaction approached significance ($\beta = .06$, $p = .079$). Figure 3 shows the predicted values for participants scoring one standard deviation above and below the mean on each variable. Independent of their level of self-esteem, participants who placed a lot of importance on being popular and well liked experienced more extreme reactions to their social outcomes ($\beta = .44$, $p < .001$) than those who placed less importance on being popular and well liked ($\beta = .28$, $p < .001$). These findings are consistent with evidence that contingent feelings of self-worth covary with domain importance: The more importance people attach to some domain, the more extreme their emotional reactions to outcomes in that domain tend to be.

Note, however, that the three-way (Self-esteem × Social Outcomes × Social Importance) interaction did not even approach significance ($t < 1$). Substantively, this finding indicates that high self-esteem buffered the negative effects of daily social outcomes independent of how much importance participants placed on social outcomes.

General positive and negative emotions. I repeated the mixed modelling analyses using scores on the 18-item PANAS as the criterion variable. Although significant main effects emerged for Self-esteem ($\beta = .57$, $p < .001$) and Social Outcomes ($\beta = .37$, $p < .001$), the two-way Self-esteem × Social Outcome interaction was not significant ($p > .25$). Inspection of the right-hand side of Figure 2 shows why: To a comparable degree, negative social outcomes were associated with less positive emotions in high-self-esteem participants and low-self-esteem participants. In short, self-esteem did not buffer the negative effects of social outcomes when general positive and negative emotions were measured.

Comparing the two emotions. Thus far, we have seen that self-esteem interacts with social outcomes to predict self-relevant emotions but not emotions that are not directly self-relevant. Presumably, this pattern arises because negative outcomes have a broad effect on low-self-esteem participants (leading them to feel bad in general and bad about themselves), but a narrower effect on high-self-esteem participants (leading them to feel bad in general, but not bad about themselves). To the extent that this is so, we should find a Self-esteem × Outcome interaction in the prediction of the emotion difference score. The interaction term was, in fact, significant ($\beta = .11$, $p = .01$), and follow-up analyses confirmed that social outcomes predicted the difference score for high-self-esteem
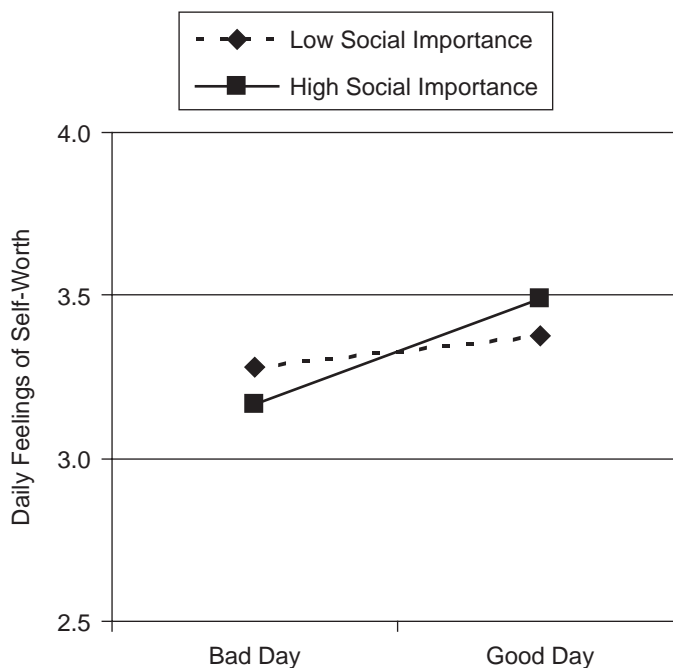
Figure 3. *Momentary feelings of self-worth as a function of social outcome importance and daily social outcomes: Study 2.*

participants ($\beta = .14$, $p < .01$) but not for low-self-esteem participants ($\beta = -.07$, *ns*). These findings show that self-esteem differences in response to negative outcomes are focused around self-relevant emotions. Self-esteem doesn't predict how bad people feel when they fail, only how bad they feel about themselves.

STUDY 3

So far, I have shown that high self-esteem buffers emotional distress from social interactions in a laboratory setting and from daily social outcomes in the real world. All the evidence to this point has been based on self-report, however. These reports could be biased by self-presentational concerns or an inability on the part of high-self-esteem participants to access their emotional distress. As one means of addressing this issue, I conducted a final study using the Implicit

Association Test (IAT) developed by Greenwald, McGhee, and Schwartz (1998).

Study 3 addressed another issue of concern. In all previous studies, comparisons have been made between positive and negative outcomes, without including a control condition. Although the evidence shows that self-esteem differences are more pronounced for negative outcomes than for positive ones, it is unclear whether this is due to the effects of failure (rejection) rather than the effects of success (acceptance). To remedy this problem, I included a control condition in Study 3, allowing for a more precise examination of the stress-buffering properties of high self-esteem.

Method

Participants
Forty-one UW undergraduates (28 females) participated in exchange for course credit in lower division psychology courses. Three additional

participants failed to follow directions and their data were discarded.[4]

Measures and procedures

After signing an informed consent form, participants were ushered into a small room containing a desktop computer and a colour monitor. The experimenter then left, and all additional instructions, materials, and procedures were presented via the computer.

First, participants completed the Rosenberg Self-Esteem Scale. Next, they learned they would be working on a classification task. All participants then received practice with the IAT. Using the "d" and "k" keys on the computer keyboard, participants first categorised target stimuli (*self, me, mine, my*) and other-related words (*others, they, them, theirs*) according to their self-descriptiveness (SELF vs. OTHERS). Next they categorised attribute stimuli according to their valence (PO-SITIVE vs. NEGATIVE). Based on evidence that self-esteem best predicts implicit associations to self-evaluative stimuli (Oakes, Brown, & Cai, 2008), the attribute stimuli were of two types: One-half pertained to self-relevant attributes and traits (*attractive, competent, intelligent, kind* and *incompetent, unattractive, unfriendly, unintelligent*) and the other half were valenced but not self-relevant (*balloon, laughter, smile, sunshine* and *cancer, disease, famine, vomit*). (Hereafter, I refer to the former stimuli as representing a self-evaluative IAT and the latter stimuli as representing an affective IAT.) The 16 attribute stimuli were presented randomly within 4 blocks of 16 trials.

After working on the single classification tasks, participants randomly assigned to the control (i.e., no feedback) condition proceeded to the dual classification task, consisting of either a congruent alignment (using a single key for SELF or POSITIVE words and another key for OTHERS or NEGATIVE word) or an incongruent alignment (OTHERS + POSITIVE and SELF +

NEGATIVE). (The order of the two tasks was counterbalanced across participants.) Participants then received some practice with the reverse classification task before completing it.

Participants randomly assigned to the two experimental conditions (success or failure) completed the integrative orientation test used in Study 1 after completing the practice trials but before proceeding to the dual classification task.[5]

When they completed the IAT, the participants let the experimenter know they were finished. Afterward, they were debriefed, thanked, and excused.

Results and discussion

Preliminary analyses revealed no effects of gender, and this variable was excluded from all additional analyses.

Performance evaluations

Prior to completing the test blocks of the IAT, participants in the two experimental conditions evaluated the feedback they received regarding their test performance. I used multiple regression analyses to analyse these scores, with one categorical predictor ($-1 = $ Positive Feedback, $1 = $ Negative Feedback) and one continuous predictor (self-esteem, centred around its mean). An interaction term was included by calculating the cross-product of the two predictors. The only effect to reach significance was the main effect of Feedback. As expected, participants who received positive feedback evaluated their performance more favourably ($M = 6.07$) than did participants who received negative feedback ($M = 3.00$), $F(1, 22) = 31.80$, $p < .001$, $\eta_p^2 = .59$.

Data reduction

I calculated the IAT effect using a modified version of the "D" algorithm recommended by Greenwald, Nosek, and Banaji (2003). First, because the IAT lacked practice blocks for the

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[4] The sample size is low because the psychology subject pool was more limited than usual during the quarter the experiment was conducted.

[5] All procedures were identical to those used in the achievement task condition of Study 1, and details will not be repeated here.

Affective Stimuli

Self-Evaluative Stimuli
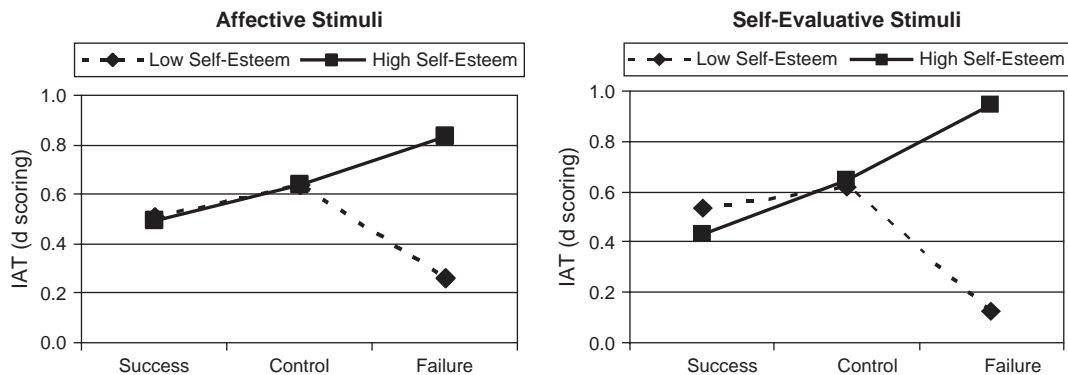
Figure 4. *Implicit self-evaluations as a function of self-esteem and outcome for affective stimuli (top panel) and self-evaluative stimuli (bottom panel): Study 3.*

combined task, only data from the test blocks were used. Second, because I used two types of attribute stimuli (i.e., affective and self-evaluative), I calculated separate "D" scores for each of them. As with the original algorithm, this was accomplished by first subtracting the mean latency for one test block from the other, and then dividing this difference score by its corresponding standard deviation. Scores on the two tasks were highly correlated, $r = .94$, $p < .001$, which is not surprising given that the target questions for both tasks (i.e., Self and Others) were identical.

Main analyses

I predicted that failure would be less likely to lower implicit self-evaluations when self-esteem was high rather than low, particularly when implicit self-evaluations were measured with self-evaluative stimuli. To test these predictions, I used a repeated-measures multiple regression analysis, with experimental outcome as a categorical predictor, mean-centred self-esteem as a continuous predictor, and IAT type (affective vs. self-evaluative) as a repeated measure. The analysis revealed two significant effects. An Outcome × Self-esteem interaction, $F(2, 35) = 3.61$, $p < .05$, $\eta_p^2 = .17$, and an Outcome × Self-

esteem × IAT Type interaction, $F(2, 35) = 6.13$, $p < .01$, $\eta_p^2 = .26$. Figure 4 shows the predicted values for participants scoring one standard deviation above or below the mean on the self-esteem scale for both IAT tasks. Visual inspection of the figure shows that the form of the interaction was similar for both tasks, but was stronger for the self-evaluative IAT than for the affective IAT. Simple effects tests confirmed that, for both tasks, self-esteem differences were negligible following success and in the control condition (all ts < 1), but significant following failure for the self-evaluative IAT, $F(1, 35) = 13.25$, $p = .001$, $\eta_p^2 = .28$, and the affective IAT, $F(1, 35) = 5.20$, $p < .05$, $\eta_p^2 = .13$.[6]

Additional analyses comparing the control and failure conditions showed a significant Outcome × Self-esteem interaction for the self-evaluative IAT, $F(1, 35) = 6.81$, $p = .01$, $\eta_p^2 = .16$, and a marginally significant interaction for the affective IAT, $F(1, 35) = 2.88$, $p < .10$, $\eta_p^2 = .08$. Simple effects tests using only the self-evaluative IAT confirmed that low-self-esteem participants evaluated themselves more negatively after failure than after no feedback, $F(1, 35) = 5.47$, $p = .025$, $\eta_p^2 = .14$, whereas high-self-esteem participants showed a non-significant tendency in

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[6] The simple effects of self-esteem mirror the raw correlations within each experimental condition. These values were as follows (first for the affective IAT followed by the self-evaluative IAT): Success ($r = −.01$, *ns*; $r = −.18$, *ns*); Control ($r = −.00$, *ns*; $r = .04$, *ns*), Failure ($r = .62$, $p < .001$; $r = .79$, $p < .001$). Additional analyses within the failure condition showed that self-esteem was more strongly correlated with the self-evaluative IAT than the affective IAT, $Z = 2.37$, $p < .025$.

the opposite direction, $F(1, 35) = 2.30$, $p = .14$. In short, when implicit self-feelings were measured using self-evaluative stimuli, low-self-esteem participants experienced diminished feelings of self-worth following failure, but high-self-esteem participants did not.

GENERAL DISCUSSION

Anyone who has ever been spurned by a lover, defeated on the tennis court, or received a rejection letter from a journal editor knows that negative feedback hurts (Eisenberger, Lieberman, & Williams, 2003). At the same time, individuals differ in the degree to which they take such feedback personally, with negative feedback leading some people to feel much worse about themselves than others. The present findings suggest that global self-esteem can illuminate these differences. All three investigations showed that low-self-esteem people feel worse about themselves when they fail than do high-self-esteem people.

Although the emotion buffering effect of high self-esteem has previously been reported (see Brown, 1998; Brown & Marshall, 2006, for reviews), the present findings go beyond previous demonstrations in several important ways. First, Study 1 found that the stress-buffering role of high self-esteem was just as apparent following negative social feedback as following achievement failure. This finding is important because social feedback has been presumed to be particularly impactful when it comes to affecting momentary feelings of self-worth (Leary, 2006). A recent study by Park and Crocker (2008) also tested this hypothesis, but Study 1 is the first investigation to directly compare social feedback and achievement feedback in the same experiment. Evidence that high self-esteem blunts each type of feedback to a comparable degree attests to its power and generality.

Study 2 showed that the moderating effect of high self-esteem occurs for naturally occurring outcomes. With few exceptions, previous research has examined how self-esteem shapes emotional reactions to laboratory-based feedback in a relatively artificial (and perhaps unimportant) setting

(see Crocker, Sommers, & Luhtanen, 2002; DeHart & Pelham, 2007, for exceptions). Establishing the ecological validity of the self-esteem buffering effect supports its importance in daily life. Study 2 also explored the specificity of the self-esteem buffering effect by comparing two types of emotions: Feelings of self-worth (e.g., pride, humiliation) and more general positive and negative emotions that are unrelated to how people feel about themselves (e.g., excited, upset). Consistent with research conducted in laboratory settings (Brown & Dutton, 1995; Brown & Marshall, 2001), high self-esteem only interacted with daily outcomes to predict feelings of self-worth.

Study 3 addressed the authenticity of participants' self-reports of self-worth. Baumeister et al. (1989) speculated that self-presentational concerns underlie self-esteem differences in behaviour. Study 3 examined this issue. Using an implicit measure of self-feelings that is less subject to self-presentational biases than are self-reports, the data pattern once again supported the emotion-buffering role of high self-esteem. In research published after the present investigation had been completed, Park et al. (2007) found a comparable pattern: Among participants who base their self-worth on academic performance, those with low self-esteem were faster to associate themselves with negative phrases (such as worthless and incompetent) following failure than were those with high self-esteem. The present findings replicate these results and extend them by showing that self-esteem differences following failure are stronger when self-evaluative stimuli (rather than affective stimuli) are used to assess implicit self-feelings (see also Oakes et al., 2008).

Limitations and alternative interpretations

I believe the consistency of the evidence offered in this paper provides the firmest evidence to date that high self-esteem buffers the adverse effects of negative outcomes across a range of domains. Nevertheless, several possible limitations and alternative interpretations need to be acknowledged and addressed. First, in all three investigations,

participants made feedback ratings (either on the feedback they received in an experiment or on the quality of their social outcomes) before rating their feelings. In retrospect, it would have been better to counterbalance these two tasks to avoid potential order effects. It might also be argued that having participants evaluate the feedback they received before rating their emotional states introduced demand characteristics in the experimental situation, thereby tainting the findings. Although this possibility cannot be ruled out, this interpretation would need to assume that demand characteristics (a) affect low-self-esteem participants more than high-self-esteem participants; (b) taint self-relevant emotions (i.e., feelings of self-worth), but not more general feelings of emotional distress; and (c) operate even when implicit self-feelings are assessed (especially with self-evaluative stimuli). Each of these effects is plausible, but their conjunction is less likely.

One might also question whether the IAT assesses self-feelings at all. Several researchers have considered this issue and concluded that implicit attitude measures more reliably assess affective associations than cognitive ones (Gawronski & Bodenhausen, 2006; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Hofmann, Gschwendner, Nosek, & Schmitt, 2005). Consistent with this evidence, Oakes et al. (2008) found that the self-evaluative IAT used in Study 3 is correlated with feelings of self-love and self-acceptance. These empirical associations justify the use of the IAT as a valid measure of self-feelings.

Finally, one might question whether self-esteem, rather than some other, third variable drives the present effects. Although this possibility applies to all research that uses individual difference variables, it is particularly relevant to self-esteem, which is linked to many other psychological variables (Judge, Erez, Bono, & Thoresen, 2002). In the absence of random assignment to conditions, the role of third variables cannot be dismissed. It is worth noting, however, that an earlier investigation by Brown and Marshall (2001, Study 3) ruled out the most likely third variable: neuroticism. Future research should continue to examine whether other

correlates of self-esteem, such as anxiety, self-efficacy, and depression, underlie the stress-buffering effects of high self-esteem.

Implications

Having acknowledged some possible limitations of the present research, it is also appropriate to consider its implications. First, some researchers have concluded that global self-esteem is too broad a construct to effectively predict specific psychological outcomes (Baumeister et al., 2003; Crocker & Wolfe, 2001; Marsh, Craven, & Martin, 2006; Swann et al., 2007). The present findings offer an alternative to this perspective, showing that global self-esteem is important when it comes to understanding how people feel about themselves when they encounter negative feedback.

The present findings do not simply demonstrate that low-self-esteem people feel worse about themselves in general than do high-self-esteem people. Instead, they reveal a more dynamic aspect of self-esteem, showing that self-esteem predicts momentary feelings of self-worth in response to negative outcomes. Low-self-esteem people have very conditional feelings of self-worth: They feel (momentarily) good about themselves when they succeed but (momentarily) bad about themselves when they fail. High-self-esteem people's momentary feelings of self-worth are not so closely tied to their recent outcomes; how they feel about themselves at any moment does not depend as much on whether they have recently won or lost.

The manner in which global self-esteem shapes emotional responses to negative outcomes underscores the need to clearly distinguish these two psychological constructs. Many psychologists conflate them, using the term "state self-esteem" to refer to momentary feelings of self-worth, and "trait self-esteem" to refer to global self-esteem (e.g., Crocker et al., 2002; DeHart & Pelham, 2007; Heatherton & Polivy, 1991; Leary, 2006). This conflation connotes an equivalency between the two constructs, implying that the essential difference is that global self-esteem persists while feelings of self-worth are temporary. I disagree

with this approach, in part because it leads to the tautological conclusion that one form of self-esteem influences another form of self-esteem.

Melding the two constructs creates another problem. If we assume that the only difference between them is their temporal course, we must also assume that temporarily feeling proud of oneself (i.e., high state self-esteem) is analogous to having high self-esteem and that temporarily feeling ashamed of oneself (i.e., low state self-esteem) is analogous to having low self-esteem. Consistent with this assumption, many investigators claim to experimentally induce high (or low) self-esteem by giving participants positive (or negative) feedback (e.g., Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). This approach ignores a key fact: Global self-esteem is not a static quality but a capacity to respond to evaluative feedback in ways that maintain high feelings of self-worth. Providing positive feedback to people does not give them this capacity, so it does not mirror the experience of having high self-esteem.

The question arises, then, as to what does give high-self-esteem people the capacity to respond to negative feedback without feeling bad about themselves. Study 2 examined one possible factor: domain investment. If high-self-esteem people place little importance on their performance in some domain, I reasoned that they might reasonably escape feeling bad about themselves when they encountered negative feedback. I found no evidence that this process occurs. First, high-self-esteem participants tended to place more (not less) importance on their social outcomes than low-self-esteem participants. Moreover, independent of how much they cared about being well liked and popular, high-self-esteem participants were less adversely affected by negative social outcomes than were low-self-esteem participants.

The positive (though not significant) correlation between high self-esteem and domain investment parallels results found with other cognitive variables. Consider expectancies. In most situations, high-self-esteem people hold higher expectancies of success than do low-self-esteem people. Logically, then, they should feel worse about themselves when they fail, because their performance falls farther below their expectancies (see Marshall & Brown, 2006). But they don't. These and other findings suggest that cognitive variables (e.g., importance, expectancies, attributions) do not explain the emotion-buffering properties of high self-esteem (see Brown, 1998, for an expanded treatment of this issue).

Instead of focusing on why high-self-esteem people escape emotional distress when they fail, it may be more fruitful to ask, "Why do low-self-esteem people feel ashamed and humiliated of themselves when they fail?" The first thing to note is that there is nothing logical about these feelings. It isn't logical to feel ashamed of yourself when you fail an experimental test of an ability you have never heard of, or feel humiliated when you are told by a complete stranger you lack social poise. The fact that these experiences invoke negative feelings in low-self-esteem people suggests that the critical perceptions producing the effect lie outside the realm of logic or rationality.

Elsewhere, I have argued that the key factor is that failure means something different to a low-self-esteem person than to a high-self-esteem person (Brown, 1998). To a high-self-esteem person, failure is an isolated event that indicates "I lack some ability or quality;" to a low-self-esteem person, failure means "I am a bad person". Not in any logical way, but in an automatic, classically conditioned, illogical way (Ellis, 1962). And it doesn't take much to evoke these feelings, which is why we commonly say "low-self-esteem people have thin skin". Even the smallest of slights (a person forgets your name; you lose at shuffleboard) can threaten low-self-esteem people's feelings of self-worth.

In sum, I believe high-self-esteem people escape emotional distress when they fail simply because they do not take failure *personally* (i.e., they do not assume it bears on their overall worth as a person). This doesn't mean high self-esteem is always advantageous, however. For example, Baumeister, Heatherton, and Tice (1993) showed that high self-esteem can lead to unproductive self-regulation, and Heatherton and Vohs (2000) identified conditions under which high-self-esteem people elicit negative evaluations from interaction

partners (see also, Vohs & Heatherton, 2001). Clearly, the ability to fail without feeling bad about oneself can cause problems, much as an inability to feel physical pain can be dangerous and even life threatening.

Despite these potential costs, the ability to fail without feeling bad about oneself is probably more often a benefit than a liability. It allows people to set higher goals for themselves, try different things, and persist longer at the things they do try. Moreover, it satisfies a basic human need: The need to feel good about ourselves rather than ashamed of ourselves. Ultimately, the ability to fail without suffering diminished feelings of self-worth may explain why high-self-esteem people consistently report greater life satisfaction than do low-self-esteem people (Diener & Diener, 1995; Myers & Diener, 1995). After all, life is a lot easier when one can handle its ups and downs with equanimity.

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