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Abstract

Two experiments investigated how self-esteem guides people’s emotional responses to changing evaluative feedback. In both experiments, participants received an initial evaluation (either positive or negative) followed by a second evaluation (either positive or negative). Emotional reactions to the second evaluation were then assessed. High self-esteem participants found feedback that was consistently negative to be most distressing, whereas low self-esteem participants were most disturbed by feedback that changed from positive to negative. The theoretical and practical implications of the findings are discussed.
Emotional Responses to Changing Feedback:
Is it Better to Have Won and Lost Than Never to Have Won at All?

Life often presents people with a mixture of good news and bad news. Journal reviews, for example, frequently contain both positive and negative feedback. The same can be said for report cards, tarot cards, and dance cards. In short, people rarely experience unqualified success or failure; instead, they win some and lose some, and learn to take the good with the bad.

In this paper, we examined people’s emotional responses to mixed feedback, with a particular emphasis on how self-esteem influences these reactions. Common sense suggests three possible emotional reactions to mixed feedback. One possibility is that people treat mixed feedback as a success. They view the glass as half full and see a mixed outcome as a triumph. If so, their emotional responses to mixed feedback ought to be as positive as their emotional responses to success. Alternatively, people might treat mixed feedback as a defeat. When surveying their performance, they might focus on their poor outcome and conclude that ‘one bad apple spoils the whole bunch.’ In this case, we should find that people’s emotional responses to mixed feedback are as negative as are their responses to failure. A third possibility is that people view mixed feedback as a partial victory. They are not as triumphant as when they have succeeded, but neither are they as despondent as when they have failed. Instead, they show intermediate emotional responses to mixed feedback.

Common sense, of course, is no substitute for data, so we wondered what prior research in this area had uncovered. Unfortunately, we were unable to find any research that directly addressed this issue. The most relevant investigation we could find was a now-classic study by Aronson and Linder (1965). These investigators had participants engage in a series of get-acquainted conversations with an interaction partner. Following the first few conversations, the participants learned that the other person liked or disliked them; later, after several additional conversations, they received further information about the other person’s liking for them. Aronson and Linder found that participants expressed greater liking for a consistently negative evaluator than for one that first evaluated them positively but later evaluated them negatively.

Aronson and Linder (1965) explained their results with reference to affective processes,
arguing that people feel especially bad when they receive feedback that changes from positive to negative. Although these investigators provided little evidence that this was the case, we concur with their analysis: Feedback that changes from good to bad generally produces more emotional distress than does constant negative feedback.

We also believe that individual differences in self-esteem will moderate this effect. This belief is based on evidence that low self-esteem (LSE) people are more sensitive to negatively-valenced outcomes than are high self-esteem (HSE) people (for reviews, see Brown, 1993, 1998). For example, after performing poorly at an intellectual task, LSE people are more apt to experience feelings of shame and humiliation and evaluate themselves in more negative terms than are HSE people (Brown & Dutton, 1995; Brown & Marshall, in press; Dutton & Brown, 1997). If, as Aronson and Linder’s (1965) findings suggest, feedback that shifts from positive to negative is especially aversive, the greater sensitivity LSE people show to negative outcomes should lead them to be particularly sensitive to this state of affairs. Accordingly, we predicted that negative emotional reactions to increasingly negative feedback would be especially evident among LSE people.

Study 1

We conducted two investigations to examine this issue. In Study 1, we adapted the procedures Aronson and Linder (1965) used to examine emotional reactions to interpersonal acceptance and rejection. In the Aronson and Linder investigation, participants received positive and negative feedback from the same interaction partner on multiple occasions. This seemed to us to be a rather artificial situation, as it is rare that people who initially like us later turn against us. More commonly, some of the people we interact with are fond of us and others are not. To capture this aspect of social life, we had participants interact with (and receive evaluative feedback) from two different interaction partners.

Method

Participants

Fifty-nine female University of Washington undergraduates participated in this study in exchange for extra credit in various psychology courses. They were drawn from the top or
bottom thirds of the Rosenberg (1965) self-esteem scale. This scale is a widely-used measure of self-esteem (Baumeister et al., 1989; Rosenberg, 1979). It focuses on how people feel about themselves in general, without referring 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. In the present sample, 29 of the participants were classified as having LSE (\(M = 17.76\)) and 30 of the participants were classified as having HSE (\(M = 29.07\)). The experimenters were unaware of participants’ self-esteem levels throughout the experimental procedure. The data from two participants were discarded: One had missing data and the other failed to follow directions.

**Design, Materials, and Procedure**

The participants signed up in groups of four for an experiment entitled “Getting Acquainted.” After arriving at the laboratory, they were arbitrarily divided into pairs. Each pair was taken to a smaller room where they were instructed to engage in a short (5 minute) discussion. In order to facilitate the discussion, a female experimenter provided a stack of index cards with ideas for various conversation topics (e.g., “What do you do in your spare time?” “What concerns you most about school?”).

When the time for the discussion had elapsed, each of the participants was taken to a separate room and was asked to evaluate her interaction partner by rating her partner on eight trait adjectives (sociable, attractive, shy, anxious, friendly, nice, fun interesting). The participants also indicated their overall liking for their partner by indicating how much they would enjoy spending time with her (1 = not at all, 9 = very much).

After both participants had completed these questionnaires, the experimenter gathered the forms and entered a separate room. A few minutes later, the experimenter returned and handed each participant a questionnaire (allegedly) filled out by the other participant. In fact, these sheets were prepared in advance by the experimenter. Participants randomly assigned to receive
positive feedback were given a rating form that contained positive ratings ($M = 7.5$ on the trait rating scales and a rating of 8 on the measure of how much time they would enjoy spending time with her) and those randomly assigned to receive negative feedback were given a rating form that contained negative ratings ($M = 2.5$ on the trait rating scale and a rating of 3 on the measure of how much they would enjoy spending time with her).

After receiving this feedback, the participants rated the favorability of the feedback by responding to the following question: How would you describe the person’s overall impression of you (1 = very negative, 9 = very positive).

When the scales had been completed, the participants engaged in a second conversation with another interaction partner. The procedure and delivery of (bogus) feedback were then repeated (with minor variations in numerical values to avoid suspicion). After characterizing the second evaluation they received, the participants indicated the extent to which they were presently experiencing a variety of emotions (1 = not at all, 7 = very much). Six of the items measured positive emotional states (e.g., calm, happy, proud) and six measured negative emotional states (e.g., anxious, ashamed, sad). The six items within each of the two types of emotions were averaged to create an index of current positive emotion ($\alpha = .90$) and negative emotion ($\alpha = .92$).

The experiment was terminated when all of the participants had completed these measures. They were then debriefed, thanked for their participation, and excused.

Results and Discussion

Preliminary Analyses

As indicated earlier, participants rated the favorability of the feedback they received from each interaction partner. These data were analyzed using a 2 X 2 X 2 [Self-Esteem X Feedback from Partner 1 (FEED1) X Feedback from Partner 2 (FEED2)] analysis of variance (ANOVA). As expected, participants who received positive feedback from their first interaction partner rated the feedback as being more positive ($M = 8.32$) than did those who received negative feedback ($M = 2.65$), $F(1, 51) = 257.06$, $p < .001$ ($g = 4.17$). Similarly, those who received positive feedback from their second interaction partner rated the feedback as being more positive
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(M = 8.30) than did those given negative feedback (M = 2.74), F(1, 51) = 232.01, p < .001 (g = 3.97).

It is particularly noteworthy that neither the FEED1 X FEED2 interaction, nor the Self-Esteem X FEED1 X FEED2 interaction achieved significance when we evaluated participants’ evaluations of the feedback they received from their second interaction partner. Substantively, this means that, for both self-esteem groups, feedback from the first interaction partner did not influence judgments about the positivity of the feedback from the second interaction partner.

Emotional Reactions

We anticipated that LSE people would feel especially bad when they received positive feedback from their first interaction partner and negative feedback from their second interaction partner. To test this hypothesis, we subjected each of the two types of emotion scales (positive and negative) to a Self-Esteem X FEED1 X FEED2 ANOVA.

Positive Emotion. The upper-half of Table 1 shows the data for the positive emotion scale. An ANOVA of these data revealed two main effects. A main effect of self-esteem indicated that HSE participants felt better (M = 5.45) than did LSE participants (M = 4.31), F(1, 51) = 12.16, p < .01 (g = .91), and a main effect of Time 2 Feedback indicated that participants who received positive feedback from their second interaction partner felt better (M = 5.58) than did those who received negative feedback (M = 4.19), F(1, 51) = 18.06, p < .001 (g = 1.11). The triple (Self-Esteem X FEED1 X FEED2) interaction did not achieve significance (p > .15).

Negative Emotion. The negative emotion scores (shown in the lower-half of Table 1) provided greater support for our hypotheses. Here, lower order effects for self-esteem, F(1, 51) = 5.40, p < .025 (g = .61), and FEED2, F(1, 51) = 11.11, p < .01 (g = .87), were qualified by the predicted Self-Esteem X FEED1 X FEED2 interaction, which fell just short of statistical significance, F(1, 51) = 3.84, p = .055 (g = .51). Inspection of the bottom row shows that the means are patterned as predicted. Among LSE participants, negative feedback preceded by positive feedback produced more intense negative emotions (M = 3.27) than did consistently
negative feedback (M = 2.41); among HSE participants, the situation was reversed: Consistently negative feedback produced greater distress (M = 2.52) than did negative feedback preceded by positive feedback (M = 1.79). A test of this pattern (representing the simple Self-Esteem X FEED1 interaction for negative feedback at Time 2), produced a significant effect, t(51) = 1.89, p < .05 (one-tailed). Also informative is a second contrast, conducted only among LSE participants, that compared the positive-to-negative condition versus the other three cells. This contrast was significant, t(25) = 2.17, p < .05, and accounted for virtually all of the variance in LSE participants’ negative emotion scores [F(2, 25) = 1.06, ns, for the residual variance]. In combination, these analyses indicate that LSE participants, but not HSE participants, were especially troubled by feedback that switched from positive to negative.

Study 2

The data from Study 1 provide initial evidence that negative feedback preceded by positive feedback is particularly upsetting to LSE people. In fact, among LSE participants, mixed feedback of this type produced more negative emotion than did feedback that was consistently negative. This finding replicates and extends previous work by Aronson and Linder (1965).

At the same time, the critical three-way interaction fell just short of statistical significance and many of the simple effects were only marginally significant as well. These facts highlight the need for replication. We also wondered whether these effects apply to achievement-related outcomes, rather than the interpersonal feedback we provided in Study 1. Would LSE people also respond with strong negative emotion to failure preceded by success? This state of affairs is familiar to any student who receives a high grade on a midterm only to ‘bomb’ the final. If the effects observed in Study 1 are general, they ought to also characterize affective responses to achievement-related outcomes. Study 2 was designed to investigate this issue.

Method

Participants

One hundred and one University of Washington undergraduates (42 males; 59 females)
participated in this experiment in exchange for extra course credit. As in the previous study, they were drawn from the top or bottom thirds of Rosenberg’s (1965) self-esteem scale. Forty-four of the participants were classified as having LSE (\(M = 18.80\)) and fifty-seven of the participants were classified as having HSE (\(M = 27.91\)). Four additional participants failed to follow directions and their data were discarded.

*Design, Materials, and Procedure*

The experiment used a 2 (Self-Esteem) X 2 (Test 1 Performance Feedback [TEST1]) X 2 (Test 2 Performance Feedback [TEST2]) experimental design. The participants were tested in small groups of 2-5, with each participant seated at a separate computer in such a way that they could not see each other’s computer screen. All instructions and experimental measures were presented on the computer.

At the start of the experimental sessions, the participants learned that the experiment involved the testing of two abilities. One ability, called integrative orientation, was described as an aspect of creativity that involved the ability to find creative and unusual solutions to problems. The other ability, called social sensitivity, was described as an interpersonal skill that involved the ability to adopt the perspective of other people.

The experimental tests were then administered. The Remote Associates Test (Mednick, 1962) was used to test integrative orientation ability. With this task, participants are shown 3 words (e.g., car—swimming—cue) and asked to find a fourth word that relates to the other 3 (pool). Using random assignment to conditions, half of the participants received a set of easy problems and half received a set of difficult problems. Difficulty level was determined on the basis of prior testing with an independent sample and on published norms (McFarlin & Blascovich, 1984).

Social sensitivity was measured with a test developed by Pyszczynski, Greenberg, and LaPrelle (1985). The participants were shown a target word and 4 alternatives (AFRAID: fear, scared, darkness, brave). For each item, the participants were asked to choose the alternative they thought most other people associate with the target word. The test is made up of 20 items.

Test order and performance feedback were counterbalanced. After taking the first test,
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(either integrative orientation or social sensitivity), the participants received bogus feedback regarding the quality of their performance. Participants in the success condition learned that they had done very well on the test (upper 85%), whereas those in the failure condition learned that they had done rather poorly on the test (bottom 35%). After receiving this information, the participants evaluated their performance (1 = very poor, 9 = very good).

The participants then proceeded to take the second test. After they received feedback regarding their performance on this test (comparable to, though not identical with the percentage feedback provided on Test 1), they evaluated their performance on the second test and rated their current emotional states using the same items used in Study 1 (although this time the items were rated on a 5-point scale).

When the participants had finished completing these items, they signaled to the experimenter that they were through. They were then debriefed, thanked for their participation, and excused.

Results and Discussion

Preliminary Analyses

Participants evaluated their performance on each test immediately after receiving their test scores. Each of these performance evaluations was analyzed by means of a 2 X 2 X 2 (Self-Esteem X TEST1 X TEST2) ANOVA. The analysis of evaluations for Test 1 produced a single effect of TEST1 performance: Participants who received success feedback on the first test evaluated their performance more favorably than did those who received failure feedback (Ms = 7.07 and 3.44, respectively), F(1, 93) = 166.55, p < .001 (g = 2.57).

A comparable effect was found when we analyzed evaluations for Test 2. Participants who succeeded on the second test evaluated their performance more favorably than did those who failed (Ms = 7.00 and 3.13, respectively), F(1, 93) = 145.73, p < .001 (g = 2.40). Moreover, as in Study 1, neither the TEST1 X TEST2 nor the Self-Esteem X TEST1 X TEST2 interaction achieved significance (p > .20).

Emotional Reactions

Positive Emotion. The upper-half of Table 2 shows the data for the positive emotion
scale. A 2 X 2 X 2 ANOVA of these data revealed two main effects. A main effect of self-esteem indicated that HSE participants felt better (M = 3.24) than did LSE participants (M = 2.87), F(1, 93) = 5.00, p < .05 (g = .44), and a main effect of Test2 Feedback indicated that participants who succeeded on the second test felt better (M = 3.40) than did those who failed (M = 2.72), F(1, 93) = 17.32, p < .001 (g = .83). As before, the triple (Self-Esteem X TEST1 X TEST2) interaction did not approach significance (F < 1).

Negative Emotion. The lower-half of Table 2 shows the data for the negative emotion scale. Several lower order effects achieved significance in the analysis of these data, but all were qualified by a significant three-way interaction, F(1, 93) = 8.15, p = .005 (g = .57). Inspection of the data reveals that the mean pattern closely resembles the one observed in our earlier study. Among LSE participants, negative feedback preceded by positive feedback produced more intense negative emotions (M = 2.30) than did consistently negative feedback (M = 1.86); among HSE participants, the situation was reversed (Ms = 1.33 and 1.50, respectively). A planned contrast (representing the simple Self-Esteem X TEST1 interaction for negative feedback on Test 2) produced a significant effect, t(93) = 2.02, p < .025 (one-tailed). Moreover, a contrast among LSE participants only, in which the positive-to-negative cell was compared against the other three cells, revealed a significant effect, t(40) = 3.77, p < .01. In short, replicating our earlier findings, LSE participants, but not HSE participants felt especially bad when feedback that was initially positive became negative.

General Discussion
Numerous investigations have studied people’s emotional responses to positive and negative feedback (e.g., Brown & Dutton, 1995; Brown & Marshall, in press; Leary, Tambor, Terdal, & Downs, 1995; Lyubomirsky & Ross, 1997), but few have examined people’s emotional reactions to mixed performance outcomes. This omission is unfortunate because people routinely encounter mixed feedback in life. In fact, it can be argued that this is the normal state of affairs. Most students, for example, perform well in some classes but not so well
In this research, we examined people’s emotional reactions to a particular kind of mixed feedback, one in which positive feedback becomes negative. Research by Aronson and Linder (1965) suggested that this state of affairs might be especially painful, but previous research has not provided clear evidence that this is the case. We reasoned that individual differences in self-esteem would moderate people’s emotional reactions to mixed feedback of this type. Because LSE people are more sensitive to negative outcomes than are HSE people (see Brown, 1998), we anticipated that they would be particularly distraught when positive feedback became negative.

This proved to be the case. Both of the studies we conducted found that self-esteem moderated people’s negative emotional reactions to increasingly negative feedback. Whereas HSE participants were generally more distressed when they experienced consistently negative feedback, LSE participants found consistent negative feedback to be less painful than negative feedback preceded by positive feedback. This occurred in two very different situations: One involving interpersonal feedback and one involving achievement-related feedback. This breadth is important because it suggests that a general phenomenon is at work here, rather than one relevant to a particular kind of situation only.

Alternative Explanations

We have argued that LSE people are most sensitive to feedback that becomes increasingly negative. Alternatively, LSE people might simply be acutely sensitive to the most recent outcome they have experienced, suggesting that a recency effect of sorts explains our findings. There is little evidence to support this possibility. If recency effects were operating, consistently negative feedback should produce the same affective reaction in LSE people as feedback that shifts from positive to negative. This was not the case, ruling out any explanation based on simple recency.

Another possibility is that LSE people respond more negatively to mixed feedback of any kind. If this were the case, we should find that a pattern of negative-to-positive feedback produces the same emotional distress as feedback that switches from positive-to-negative. This, too, was clearly not the case. Instead, feedback that shifted from positive to negative was
especially apt to engender emotional distress in LSE people.

*Potential Underlying Mechanisms*

Attributional processes may have contributed to our findings. People who accept responsibility for negative outcomes feel worse about their performance than do those who deny responsibility for negative outcomes (Weiner, 1986). If LSE people are particularly apt to take responsibility for a negative outcome when it follows a positive one, attributions could explain why they feel so bad when this occurs. Conceivably, this might occur because LSE people are less certain of their ability level than are HSE people (Campbell, 1990).

Alternatively, the effect may not be cognitively mediated at all. Brown and Dutton (1995; Dutton & Brown, 1997 examined whether higher order cognitions, such as attributions and performance evaluations, explain self-esteem differences following a negative outcome. They found little evidence that cognitive variables explain why LSE people are particularly distraught following the receipt of negative feedback.

Another possibility is that a contrast effect of sorts is operating in the situation we have studied (Helson, 1964). Having the “rug pulled out from under you” seems particularly upsetting, because it is unexpected and leaves one unprepared. One can brace for consistently negative feedback, but feedback that switches from positive to negative catches one off guard. It would not be surprising to find that LSE people feel particularly vulnerable when their hopes are dashed in this fashion.

*Theoretical and Practical Implications*

Our findings bear on theories that postulate a motive for self-consistency. Several prominent theorists (e.g., Aronson, 1991; Festinger, 1957; Lecky, 1945; Swann, 1996) have claimed that people prefer feedback that matches the way they feel about themselves. From this perspective, LSE people should feel better receiving consistently negative feedback than feedback that contains a mixture of positive and negative evaluative information.

At first glance, the research reported in this paper appears to provide support for this prediction. In both studies, LSE participants felt better after receiving consistently negative feedback than after receiving negative feedback preceded by positive feedback. We do not,
however, believe that self-consistency effects underlie this effect. If they did, we should find that consistently negative feedback produced more positive emotions than did consistently positive feedback (or positive feedback preceded by negative feedback). This was not the case. The data clearly show that LSE participants felt best receiving positive feedback at Time 2, be it interpersonal acceptance or achievement-related success. It does not appear, therefore, that self-consistency needs were driving the effects we observed. Instead, it was simply that LSE participants were particularly distressed when they first thought they had done well but later learned they had not.

Our findings also bear on issues in the measurement of emotion. The effects we observed in this paper were confined to people’s negative emotional reactions to performance outcomes. This finding fits with evidence that positive and negative emotions are not merely flip sides of the same coin, and that the negative side of psychological life is more complicated than is the positive side of psychological life (see Brown & Dutton, 1995; Taylor, 1991).

Finally, at a practical level, our findings are relevant to situations in which one person comments on the quality of another person’s work. To illustrate, coaches, graduate advisors, and businesses manager are often called upon to critique the work of those they supervise. A common strategy here is to begin with positive comments before proceeding to negative ones (Cohen, Steele, & Ross, 1999). However well-intentioned this strategy may be, our findings suggest it may backfire with LSE people. In fact, sugar-coated negative feedback seems particularly hard for LSE people to swallow.
References


Author Identification Notes

This research was supported by a Presidential Young Investigator Award from the National Science Foundation (SBR-8958211) and by a grant from the Horizons Foundation of Seattle.
Footnotes

1 The distribution of self-esteem scores is higher in this sample than is typical (Baumeister et al., 1989). This bias did not occur in Study 2.

2 Hedges’ $g$ is a measure of effect size (Hedges, 1981). Like Cohen’s $d$, a .2 effect is considered a small effect, a .5 effect is considered a medium effect, and a .8 effect is considered to be a large effect.

3 Using Cohen’s criteria, the effect size reported here is a medium effect.

4 We were unable to test for sex differences in this study because there were so few males in our sample.

5 A main effect of self-esteem did, however, emerge in the analysis of performance evaluations on the second test, $F(1, 93) = 5.07, p < .05$. Across all experimental conditions, HSE participants evaluated their performance more favorably ($M = 5.42$) than did LSE participants ($M = 4.70$). Because this effect was a general one and did not interact with any of the experimental conditions, it is of little theoretical importance and will not be considered further.

6 Unlike our earlier study, this contrast did not account for all of the explained variance in LSE participants’ negative emotion scores, $F(2, 40) = 4.14, p < .01$, for the residual variance. This was because the positive-positive cell was especially low in this study, indicating that LSE participants experienced very little negative emotion when receiving consistently favorable feedback.
Table 1: Mean Ratings of Emotion as a Function of Self-Esteem and Interpersonal Feedback: Study 1

<table>
<thead>
<tr>
<th>Positive Emotion</th>
<th>Low Self-Esteem</th>
<th>High Self-Esteem</th>
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<td>Feedback From Partner 1</td>
<td>Feedback From Partner 1</td>
<td>Feedback From Partner 1</td>
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<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
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<tr>
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Table 2: Mean Ratings of Emotion as a Function of Self-Esteem and Test Feedback: Study 2

### Positive Emotion

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### Negative Emotion

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