
Two-Dimensional Self-Esteem and Reactions to Success and Failure

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Past research has shown that those low in self-esteem tend to persist less after initial failure than do those high in self-esteem. It is not clear, however, whether this motivational vulnerability is attributable to low self-competence, low self-liking, or both. To address this question, the persistence and performance of students with distinct self-esteem composites were examined using an anagram task. The persistence results revealed that low self-liking was independently associated with decreased effort following performance failure, suggesting that it is this dimension of low self-esteem that is of primary importance in accounting for the previously demonstrated phenomenon. Differences in performance, although less pronounced, corresponded roughly with differences in persistence.

Perceived success and failure are often taken to reflect not only the efficacy of a given action but also the power and worth of the person behind the action. A chronically inept person will tend to be seen as less worthy than one who is consistently competent, *ceteris paribus*. Furthermore, what is true in social perception often holds for self-understanding: Our successes bolster us and our defeats diminish us in our own eyes. Bound up in this relation are motivational factors that have an impact on self-evaluation through a tangle of processes that are only beginning to be understood (Connell & Wellborn, 1991; Markus & Wurf, 1987; Raynor & McFarlin, 1986). One's thoughts and feelings about oneself influence how one actively engages with the social and physical environment (Combs & Snygg, 1949) and also guide one's perception and interpretation of the consequences of one's actions. In turn, one's understanding of one's actions affects one's understanding of oneself (Bem, 1972).

One significance of doing well or poorly at a task is the prognostic meaning of the outcome, or its implications for future performance. Outcome-based expectan-

cies in part determine the motivation to persist rather than desist at an ongoing activity or to seek out rather than avoid tasks of a similar nature in the future. For example, Feather (1966; Feather & Saville, 1967) found that when students were made to initially fail on a number of (insoluble) anagrams, they performed worse on immediately subsequent soluble anagrams than did students who were led to experience initial success. Failure led to lower probability estimates for subsequent success, thereby diminishing the motivation to persevere and causing participants to give up prematurely on soluble anagrams.

Expectancies have also been used to explain differential reactions to performance feedback as a function of self-esteem. Generalizing across studies, it appears that those with low self-esteem respond more negatively to initial failure—in the form of persisting less and performing worse—than do those with high self-esteem, despite being equivalent on initial performance (e.g., Brockner, 1979; Brockner, Derr, & Laing, 1987; Shrauger & Sorman, 1977). The effect is evident even when failure is merely imagined prior to engaging in the task (Campbell & Fairey, 1985). Explanations of the motivational vulnerability in those low in self-esteem have most often

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centered on the generalized expectancy for success that is one reflection of self-esteem. It is often claimed that those with low self-esteem interpret failure as an indication that sustained effort is futile, a tendency stemming from general lack of confidence in their own abilities. If so, their decreased persistence in the wake of failure can be seen as reflecting a negative expectancy. In contrast, the unabated or even enhanced persistence of those high in self-esteem can be attributed to their confidence that they are able to adapt to challenging tasks and ultimately succeed despite initial failure.

The intuitive account of motivational vulnerability thus casts the phenomenon as an essentially rational process with generalized expectancies influencing task-specific expectancies in light of failure. According to this view, experienced failure is more readily taken as diagnostic of stable personal limitations by those low in self-esteem than by those high in self-esteem. The failure of the former is reflexively accommodated to a negative chronic self-evaluation of overall competence. This implies that it is mainly the perceived competence aspect of global self-esteem that is critical in accounting for motivational vulnerability. But what of the rest of global self-esteem?

Tafarodi and Swann (1995) argue that global self-esteem consists of two attitudinal dimensions, *self-competence* and *self-liking*. The former refers to a generalized sense of one's own efficacy or power, and the latter refers to a generalized sense of one's own social worth. The two aspects are taken to define the semantic space of global self-valuation, just as length and width define a rectangle (cf. Osgood, 1962). Similar dichotomous conceptualizations of self-esteem have been offered by Brissett (1972), Franks and Marolla (1976), and Gecas (1971). Although highly interdependent, self-competence and self-liking have been shown to relate asymmetrically to theoretically linked variables, in line with their conceptualization as substantively distinct dimensions (Tafarodi & Swann, 1995, 1996).

Self-competence, as the valuative experience of one's own agency, is closely linked to motivational concepts such as effectance (White, 1959, 1963), personal causation (de Charms, 1968), and striving for superiority (Adler, 1931/1992). It is the self-valuative result of acting out one's will on the world—of being effective. Self-liking, in contrast, is the valuation of one's personhood—one's worth as a social object as judged against internalized social standards of good and bad. This social worth dimension of self-esteem figures prominently in accounts of the genesis of the ethical self, as offered by Baldwin (1899/1973) and Cooley (1902/1992), among others.

The prevailing interpretation of self-esteem-related motivational vulnerability implicitly holds self-competence

(rather than self-liking) to be the operative construct. It sees in self-esteem a generalized expectancy for success that moderates the interpretation of failure (see Rotter, 1966), with consequences for persistence and performance. As conceptualized, self-competence is as much a generalized expectancy as an evaluative orientation toward self; it is at once cognitive and affective. One sees this duality clearly expressed in cases of mania in which exaggerated feelings of potency and invulnerability are accompanied by exaggerated personal valuation, and in depression in which the opposite symmetry holds. It is tempting, then, to assume that task motivation is primarily a function of self-competence, the more autonomously determined dimension of self-esteem, rather than self-liking, the more socially determined dimension. After all, autonomous task performance is what is at issue. It should be recognized, however, that success and failure have many social connotations as well, even for a lone research participant working on a novel task in a laboratory cubicle. That a success or failure holds valuative implications for both self-liking and self-competence can be explained as follows.

Successful goal-directed activity is experienced positively for two basic reasons. First, it is gratifying in the same primitive way any realization of intention is gratifying—as an expression of self-determination and control (Deci & Ryan, 1985). Most important, this positivity is not predicated on secondary values; rather, it is intrinsically good. Similarly, failure, or thwarted will, is intrinsically bad. At a second level, success reflects the social worth of the person who succeeds. This layer of meaning necessarily makes reference to internalized social values and ideals. If one succeeds, then one is a worthy and respectable person and acceptable to oneself. Conversely, in the event of perceived failure, one sees oneself as unworthy and deserving of reproach. The fact that people tend to refer to themselves in the second person following failure (e.g., "You dummy! How could you do that?") dramatizes this second valuative significance.

Recognizing the duality in valuative meaning that inheres to performance outcomes, the assumption that it is only self-competence that drives self-esteem-moderated changes in task persistence becomes questionable. It is plausible that perceived failure causes those low in self-esteem to engage in a form of self-reflection that is as much punitive as it is defeatist. That is, their motivational vulnerability might be characterized by a tendency to persist less because of negative self-objectification ("I am a bad person because I failed") rather than, or in addition to, negative expectancies ("I will not do well on this task because I failed on it before"). Thus, a relatively minor failure might become subjectively magnified into a revelation of personal worthlessness.

Relevant here is Carver and Ganellen's (1983) discussion of overgeneralization as a dimension of self-punitiveness. The authors suggest that one correlate of chronic low self-worth is the tendency to draw inappropriately global inferences about the self from specific inadequacies or isolated failings. Applying this idea to the theoretical link between self-esteem and motivational vulnerability, Kernis, Brockner, and Frankel (1989) found the tendency to overgeneralize following failure to be a mediating factor. Relating these findings to the present context, an important question can be raised: What exactly is being overgeneralized in such instances? It is that persons with low self-esteem tend to experience a sense of general incompetence, a sense of general (social) worthlessness, or both, in reaction to a specific bad performance? Inspection of the items used by Kernis et al. to measure overgeneralization (taken from Carver and Ganellen's [1983] Attitudes Toward Self Scale) reveals some to be tapping overgeneralization to inefficacy ("When even one thing goes wrong I begin to feel bad and wonder if I can do well at anything at all"), whereas others might equally be taken as tapping overgeneralization to social worth ("If something goes wrong—no matter what is it—I see myself negatively"). Therefore, although the finding that overgeneralization mediates self-esteem differences in reactions to failure invites the suggestion that the self-liking dimension of self-esteem may be involved in determining motivational withdrawal, it does not provide any direct evidence that it is. It is entirely possible, for example, that subjects in that study were overgeneralizing exclusively to global inefficacy, as a function of their level of self-competence, and that self-liking played no independent role.

Perhaps the most direct investigation of the differential contribution of self-liking and self-competence to motivational vulnerability would be to expose a random sample of people to failure feedback, measuring motivation before and after the feedback. Postfeedback motivation could be simultaneously regressed on prefeedback motivation, pretested self-liking and self-competence scores, as well as higher order terms composed of these variables (see Cronbach & Furby, 1970). The independent contributions of the two self-esteem dimensions to predicting postfeedback motivation would be made apparent. The drawback of this approach lies in its low power. Because self-competence and self-liking have been shown to be highly correlated (Tafarodi & Swann, 1995), high collinearity among the predictors involving these variables would be expected, leading to inflated standard errors of the partial regression coefficients (see Cohen & Cohen, 1983; Darlington, 1990). A generously large sample would be needed to offset this threat to power—an unattractive logistical prospect for any laboratory experimenter.

Alternatively, groups that represent distinct composites of self-liking and self-competence could be compared on their motivational reactions to task failure. Any group differences observed could be interpreted in reference to the differential significance of the two dimensions for explaining past findings of vulnerability as a function of self-esteem. If only self-competence is responsible for the motivational withdrawal of those low in self-esteem, then groups similarly low in self-competence should respond to failure in the same way, regardless of differences in their levels of self-liking. Conversely, if only self-liking is responsible, then groups similarly low in self-liking should respond in the same way, regardless of difference in their levels of self-competence. If the two dimensions are independently and equally responsible, then the greatest degree of motivational withdrawal should be exhibited by those low on both dimensions, the least by those high on both dimensions, and an intermediate degree by those high on one dimension but low on the other. This group-comparison strategy was adopted in the present study to test between these competing predictions, as well as interactive possibilities. Persistence on insoluble anagrams was used as the index of task motivation.

METHOD

Participants

A total of 160 participants (77 men and 83 women) were recruited over three successive semesters. During that time, all class sections of the introductory psychology course at the University of Texas at Austin ($N = 4,018$) were pretested on the Self-Liking/Self-Competence Scale (SLCS; Tafarodi & Swann, 1995). This self-report instrument consists of a 10-item subscale measuring self-liking and a 10-item subscale measuring self-competence. Items are assertions expressed in the first person that reflect low or high self-liking (e.g., "I do not have enough respect for myself," "I like myself") and self-competence (e.g., "I am not very competent," "I am a capable person"). Each subscale consists of an equal number of positively worded and negatively worded items. Respondents indicate their degree of agreement to the assertions using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Tafarodi and Swann (1995) found the internal consistency of the subscales to be .92 and .89 for self-liking and self-competence, respectively. The test-retest reliability of the subscales over a 3-week interval was found to be .80 and .78 for self-liking and self-competence, respectively. The authors provide evidence supporting the discriminant validity of the two highly correlated ($r = .69$) subscales. In line with the theoretical origins of the two constructs, self-liking but not self-competence was independently related to perceived parental approval

during childhood and adolescence, whereas self-competence but not self-liking was independently related to comparative evaluations of specific abilities. The two dimensions were shown to hold independent relations with depression. Cross-cultural research using the SLCS has also supported the conceptualization of self-liking and self-competence as having distinct origins (Tafarodi & Swann, 1996).

All classes were also pretested on the Marlowe-Crowne Social Desirability Scale (MCSD) (Crowne & Marlowe, 1960), a measure of socially desirable response bias stemming mainly from impression management concerns (Paulhus, 1984). In his review of studies examining the MCSD, Paulhus (1991) reports alpha coefficients ranging from .73 to .88, a 1-month test-retest correlation of .88, and evidence that low scorers and high scorers respond differentially and as expected to social evaluation and influence (see also Crowne, 1979). The scale consists of 33 statements describing both desirable but very uncommon behaviors and undesirable but very common behaviors. Statements are responded to as true or false. A perfect scorer would (unbelievably) deny all undesirable behaviors and endorse all desirable behaviors. The MCSD was used to screen out students whose positive response bias rendered their self-reporting on the SLCS suspect. Those whose MCSD scores fell within the top 15% of the class distribution were deemed ineligible for subsequent selection. This figure was chosen arbitrarily and a priori as providing the desired level of selection stringency. The closest possible retaining cut-off was used, corresponding to scores of 18 or less on the 0-to-33 scale.

During pretesting, all classes completed six to nine additional questionnaires, measuring various psychological dimensions not relevant here. In all cases, these questionnaires were completed after the SLCS and the MCSD.

SLCS scores were used to identify two types of students: those with incongruent low or high self-competence/self-liking composites and those with congruent low or high self-competence/self-liking composites. Those classified as incongruent were students who met the following selection criteria: (a) The absolute value of the standardized difference of their rank-normalized¹ self-liking and self-competence scores was greater than 1 and (b) their raw scores on the self-liking and self-competence subscales were above the distribution mean on one dimension but below the mean on the other. Beyond these criteria, an attempt was made to restrict incongruent recruitment to those whose normal scores were approximately as negative on one subscale as they were positive on the other. That is, only those with roughly symmetric disparities were used. Finally, an effort was made to recruit those students from the win-

nowed group of eligibles (a group comprising approximately 6% of the selection pool) with the largest subscale disparities.

Those classified as congruent were students who met the following selection criteria: (a) The absolute value of the standardized difference of their normalized self-liking and self-competence scores was less than .2 and (b) their raw scores on the self-liking and self-competence subscales were both above or both below the respective distribution means. Beyond these criteria, selection was managed such that the mean self-liking score of the low-self-liking/low-self-competence (low-SL/low-SC) (congruent) group was not significantly different from that of the low-self-liking/high-self-competence (low-SL/high-SC) (incongruent) group. Similarly, the mean self-liking score of the high-self-liking/high-self-competence (high-SL/high-SC) group was not significantly different from that of the high-self-liking/low-self-competence (high-SL/low-SC) group. The same equivalence was engineered for self-competence.

The selection strategy was used to yield 40 participants for each of the four groups. The mean self-liking and self-competence raw scores, respectively, for the groups were as follows: 30.2 and 37.6 (low-SL/low-SC), 29.4 and 47.3 (low-SL/high-SC), 43.0 and 37.6 (high-SL/low-SC), and 43.0 and 46.3 (high-SL/high-SC). Both subscales have a possible range of 10 to 50. It is worth emphasizing that the groups were defined on the basis of relative standing rather than absolute scoring criteria. Thus, the classification terms *low* and *high* should be understood in relation to the standing of the average student (approximately 38 for self-liking and 42 for self-competence) and not absolutely in reference to the theoretical midpoint of the subscales. The modal age of those selected was 18.

Procedure

Students meeting the described selection criteria were recruited by telephone to participate in two successive experiments in exchange for course credit. Participants were run through the procedure individually. Upon arriving at the laboratory, they were greeted by a female experimenter blind to the participants' group classification and then seated in a laboratory cubicle containing a desk, a computer, and two chairs. The first experiment involved making judgments about conversational phrases and is not relevant here with the exception that participants filled out the SLCS measure a second time, allowing the stability of self-esteem classification to be checked.

In the second experiment, the experimenter waited outside while the participant worked alone on a computer-administered anagram task. On-screen instructions appeared as follows:

We would like you to attempt to solve a series of anagram puzzles. Anagrams are simply words that have had their letters scrambled. The task is to de-scramble the letters in your head in order to figure out what the word is. You may play with the letters in your head only. Using pen and paper to write down and work with the letters is not permitted. The anagrams vary in level of difficulty—some are easy, some moderate, and some quite hard. Try your best to find the solution to each anagram, but if you get stuck on one and feel that you are not going to get anywhere with it, you should go on to the next. . . . Though some of the anagrams are quite difficult, *all* have solutions. In every case, the solution is a common word that is familiar to you. The first anagram will appear immediately once you press any key to continue.

Participants worked on two sets of 20 anagrams. Each set contained a randomized mix of 15 soluble and 5 insoluble six-letter anagrams. Two thirds of the anagrams were those previously used by Feather (1966) and Feather and Saville (1967). The remaining one third were created by the authors. The soluble anagrams were pilot tested, and the two sets were arranged to be equivalently moderate in difficulty. The participant's answers and the length of time the participant persisted at each insoluble anagram were recorded by the computer. After completing the first set, the total number of anagrams the participant had successfully solved was displayed on the screen along with a bogus percentile ranking of either 21 (negative feedback) or 91 (positive feedback). Because participants had previously entered their identification number, the computer was able to assign them to the low or high percentile ranking conditions alternately within each self-esteem group.

After receiving a good or bad percentile ranking for performance on the first set, participants worked through the second set of anagrams. The second set was described on-screen as being matched with the first set in difficulty. The ordinal positions of the insoluble anagrams were the same across sets. Again, participants' answers and time spent on the insoluble anagrams were recorded.

Once participants had completed the second set, a message appeared asking them to summon the experimenter who was waiting outside. Finally, they were probed for their reactions to the feedback and for suspicion, were fully debriefed, and were dismissed from the lab.

RESULTS

A total of 13 participants were eliminated from the analysis because their self-liking and self-competence scores (SLCS) at the time of the experiment did not meet the selection criteria that had previously qualified them.² An additional 6 participants were eliminated because

they confessed during debriefing that they had suspected that their percentile ranking was contrived. (All others reported that they had perceived the feedback as representing good or bad performance as intended.) Finally, 2 participants were eliminated as boxplot outliers (greater than three interquartile ranges from the 25th or 75th percentile score) on one or more of the variables analyzed below. The elimination appeared to be roughly even across the four groups, allaying concerns about systematic attrition. A total of 139 participants were used in the analysis. Sex of participant did not produce any significant main or interactive effects in the analyses that follow and will not be discussed further.

Persistence

Because the time (number of seconds) participants persisted at each insoluble anagram was distributed with highly positive skew, a natural log transformation was used to normalize the data. For each of the two anagram sets, the five log-transformed times were taken to represent level of persistence (motivation) and were analyzed as five levels (trials) of a repeated measure nested within anagram set. To look at change in persistence following feedback, the two anagram sets were analyzed as a repeated measure. Specifically, a 2 (self-competence: low, high) \times 2 (self-liking: low, high) \times 2 (feedback: negative, positive) \times 2 (set: first, second) \times 5 (trial: 1 to 5) ANOVA was conducted, with the last two factors being repeated or within-subjects. As the covariance matrix for trial intervals revealed significant departure from assumed sphericity (see Huynh & Feldt, 1970), the Greenhouse and Geisser (1959) adjustment was used in significance tests of all effects involving this factor.

Significant ($\alpha = .05$) effects emerged for trial, $F(4, 524) = 10.36, p < .0001$; set, $F(1, 131) = 129.40, p < .0001$; Trial \times Set, $F(4, 524) = 2.99, p = .02$; Set \times Self-Liking, $F(1, 131) = 9.60, p = .002$; Set \times Feedback, $F(1, 131) = 8.90, p = .003$; Set \times Self-Competence \times Feedback, $F(1, 131) = 5.92, p = .02$; and Set \times Self-Liking \times Feedback, $F(1, 131) = 9.33, p = .003$.

Polynomial trend analysis revealed that the effect for trial was due mainly to a simple linear tendency for subjects to persevere less on later than on earlier insoluble anagrams within the sets, $F(1, 131) = 21.16, p < .0001$, as can be seen in Figure 1. This linear trend was qualified by a quartic component in the pattern, $F(1, 131) = 4.93, p = .03$. The Trial \times Set interaction was due to the quartic component being greater for the second than for the first set of insoluble anagrams, $F(1, 131) = 13.89, p = .0003$. The quartic component and its disparity across sets have no direct bearing on the question being investigated here and will not be interpreted further.

All other significant effects are qualified by the two three-way interactions. As such, these interactions were

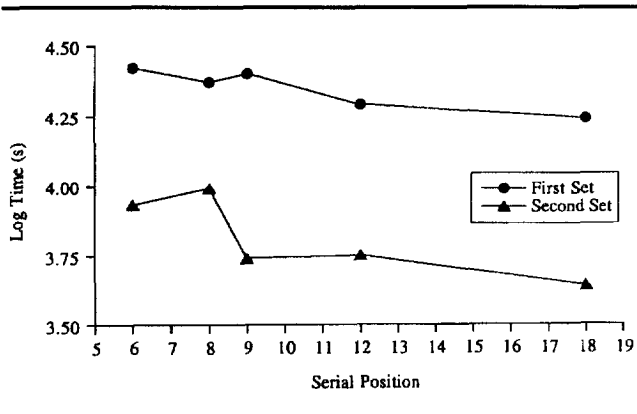


Figure 1 Persistence on insoluble anagrams as a function of serial position and set.

decomposed for interpretation in light of the competing hypotheses. Because the repeated factor of trial was not involved in the interactions, it was appropriate to represent persistence as the average of the five insoluble anagram times within each set for all analyses in the decomposition (see Table 1 for means and standard deviations). First, to break down the Set \times Self-Liking \times Feedback interaction, 2 (set) \times 2 (self-liking) ANOVAs were conducted separately for the negative and positive feedback conditions. Past studies have shown the motivational vulnerability of those low in self-esteem to be expressed in response to negative but not positive feedback. In line with this finding, the ANOVA for subjects in the positive-feedback condition produced no significant effects involving self-liking. Rather, there was only an effect for set $F(1, 67) = 35.96, p < .0001$, with subjects spending less time on insoluble anagrams in the second than in the first set, presumably as a result of fatigue.

In contrast, the ANOVA for subjects in the negative-feedback condition produced significant effects for both set, $F(1, 68) = 83.93, p < .0001$, and the Set \times Self-Liking interaction, $F(1, 68) = 14.04, p = .0004$. The two-way interaction was due to both low- and high-self-liking subjects showing significantly lower persistence on the second than the first set, but with low-self-liking subjects showing clearly greater decrement. This pattern fits with past findings of greater motivational vulnerability in those with low self-esteem and suggests that the self-liking dimension of low self-esteem drives the phenomenon independent of self-competence.³ What, then, of self-competence? Was there evidence suggesting that it, too, contributes?

Separate 2 (set) \times 2 (self-competence) ANOVAs were conducted for the negative- and positive-feedback conditions to break down the Set \times Self-Competence \times Feedback interaction. Again, only a main effect for set emerged in the positive-feedback condition, $F(1, 67) =$

TABLE 1: Persistence on Insoluble Anagrams as a Function of Self-Esteem Group, Feedback, and Set

Self-Esteem Group	Feedback	n	Anagram Set		Δ (Second - First)
			First	Second	
Low SL / low SC	Negative	19	4.44 (.72)	3.79 (.83)	-0.65
	Positive	18	4.39 (.67)	4.00 (.84)	-0.39
Low SL / high SC	Negative	15	4.55 (.60)	3.22 (.54)	-1.33
	Positive	16	4.09 (.37)	3.67 (.52)	-0.42
High SL / low SC	Negative	17	4.50 (.88)	4.15 (.84)	-0.35
	Positive	16	4.29 (.35)	3.79 (.47)	-0.51
High SL / high SC	Negative	19	4.31 (.50)	3.87 (.57)	-0.44
	Positive	19	4.19 (.73)	3.89 (.49)	-0.30

NOTE: SL = self-liking; SC = self-competence. The values represent mean log-transformed persistence times (measured in seconds). Standard deviations are in parentheses.

36.29, $p < .0001$, representing generally lowered persistence in the second set. The parallel ANOVA for subjects in the negative-feedback condition yielded the consistent main effect for set, $F(1, 68) = 73.21, p < .0001$, as well as a slight Set \times Self-Competence interaction, $F(1, 68) = 4.25, p = .04$. The interaction was due to both low- and high-self-competence subjects showing significantly lower persistence on the second than the first set, but with high-self-competence subjects showing somewhat greater decrement. The pattern, although hardly pronounced, contrasts with past findings of greater vulnerability in those with low self-esteem. Given this lack of correspondence for self-competence, self-liking is left as the single operative dimension behind failure-induced motivational vulnerability in those with low self-esteem. The modest but surprising effect for self-competence will be addressed later.

Performance

The performance of participants across sets was also analyzed. The total number of soluble anagrams correctly solved by participants in each set was submitted to a 2 (self-competence: low, high) \times 2 (self-liking: low, high) \times 2 (feedback: negative, positive) \times 2 (set: first, second) ANOVA (see Table 2 for means and standard deviations). The only effects close to significance were the Set \times Feedback interaction, $F(1, 131) = 2.77, p = .09$, and the Set \times Self-Competence \times Self-Liking \times Feedback interaction, $F(1, 131) = 2.80, p = .09$. These marginal effects were further examined strictly for their degree of correspondence with the previous persistence results. The highest order interaction was decomposed by first conducting separate 2 (self-competence) \times 2 (self-liking) \times 2 (set) ANOVAs for the two feedback conditions. No significant effects emerged for the positive-feedback condition (all $ps > .20$).

TABLE 2: Anagram-Solving Performance as a Function of Self-Esteem Group, Feedback, and Anagram Set

Self-Esteem Group	Feedback	n	Anagram Set		Δ (Second - First)
			First	Second	
Low SL / low SC	Negative	19	11.00 (1.67)	10.53 (2.22)	-.47
	Positive	18	11.00 (1.81)	10.89 (2.22)	-.11
Low SL / high SC	Negative	15	10.73 (1.94)	9.87 (2.29)	-.87
	Positive	16	10.38 (2.16)	11.25 (1.95)	.88
High SL / low SC	Negative	17	10.65 (1.66)	10.35 (2.76)	-.29
	Positive	16	10.13 (2.39)	10.50 (2.00)	.38
High SL / high SC	Negative	19	10.16 (2.19)	10.74 (1.91)	.58
	Positive	19	10.74 (2.33)	10.95 (2.30)	.21

NOTE: SL = self-liking; SC = self-competence. The values represent the mean total number of anagrams (out of 15 possible) correctly solved. Standard deviations are in parentheses.

For the negative-feedback condition, only the Set \times Self-Liking interaction was even close to significance, $F(1, 66) = 2.77, p = .10$. The interaction represented the tendency of low-self-liking subjects to perform worse on the second than the first set after receiving negative feedback, $F(1, 33) = 3.10, p = .08$, whereas high-self-liking subjects receiving negative feedback performed comparably on the two sets, $F(1, 35) = .27, p = .61$. This pattern roughly parallels the persistence effects for self-liking reported earlier and suggests that previous research demonstrating vulnerability to performance impairment in those low in self-esteem is also driven by the self-liking rather than the self-competence dimension of self-esteem. Although self-competence did not appear to qualify this pattern (despite its presence in the original four-way interaction), further decomposition indicated that somewhat greater impairment in performance after negative feedback was exhibited by low-self-liking subjects who were high in self-competence, $F(1, 14) = 3.78, p = .07$, than by low-self-liking subjects who were low in self-competence, $F(1, 18) = .71, p = .41$. As this pattern converges with the persistence findings, it suggests correspondence between effort and performance in the present experiment. This conclusion is more directly supported by the fact that, across all participants, change in persistence across sets was related to change in score across sets, Pearson $r(139) = .32, p = .0001$. This is as would be expected if spending more time on the anagrams led to improved performance.

DISCUSSION

The behavior of students with distinct self-esteem composites was compared with the intent of revealing the differential significance of self-liking and self-competence for motivational vulnerability associated with low self-esteem. Because those low in self-liking tend to be similarly low in self-competence, stringent

selective recruitment was used to make self-liking and self-competence orthogonal in a contrived sample, allowing tests of their independent contributions to any group differences in behavior.

The results obtained using this strategy revealed that participants low in self-liking suffered a greater decrement in persistence following failure feedback than did participants high in self-liking. This difference fits with previous findings using gross self-esteem as the classification variable. At the same time, it was found that participants low in self-competence did not suffer a greater decrement in persistence relative to those high in self-competence. In fact, a modest but significant difference was evident in the opposite direction. Given the presumed link between self-competence and generalized expectancies, these findings draw into question a purely expectancy-based account of the previously demonstrated vulnerability associated with low self-esteem. Instead, they support the conclusion that it is a deficit in self-liking—the more social dimension of global self-esteem—that is independently responsible for the phenomenon.

Linking these findings with previous work on self-punitive tendencies allows the speculation that it may be low self-liking that accounts for the negative overgeneralization shown to mediate between perceived task failure and motivational withdrawal (Kernis et al., 1989). If so, then it could be argued that it is more the relevance of failure for the low self-esteem individual's sense of social worth, or goodness, than its relevance for the sense of efficacy, or power, that is being magnified to dispiriting proportions. In fact, in the present study, it was those low-self-liking participants who also saw themselves as competent who showed the greatest motivational withdrawal. It, therefore, seems plausible if not likely that failure led to a negative state colored more by the feeling of being unworthy than by the feeling of being incapable. After all, why would someone high in self-competence be more susceptible to feeling incapable than someone low in self-competence? It needs to be emphasized, however, that it remains unclear at this point how self-liking leads to motivational withdrawal following failure, with negative overgeneralization being only one possibility. Further research is required to gain insight into the mediation factors involved.

Although the performance results were less conclusive, the pattern of group differences corresponded in the main with differences found for persistence. Most important, there was a trend for participants low in self-liking to show greater impairment in performance following failure than those high in self-liking. The expected contingency between effort and outcome suggested by the parallel results is further supported by

the overall association found between persistence and performance.

Having confirmed one of the competing hypotheses described at the outset—that self-liking is the operative dimension of low self-esteem, as it predicts motivational vulnerability to failure—what can be said of the modest but surprising finding suggesting that the high self-competence dimension of high self-esteem independently relates to increased vulnerability? This implication follows from the fact that the two dimensions are highly correlated in the population so that being high in gross self-esteem usually means being high in self-competence.

The pattern of means is telling here, as is the fact that the effect of self-competence on persistence was much weaker for the high-self-liking groups than the effect of self-liking was for the low-self-competence groups. This implies that it is mainly the low-SL/high-SC group to which the effect for self-competence can be attributed. It is worth considering what might be distinctive about this group. In line with the above speculation concerning overgeneralization, one possibility is that these individuals are especially prone to harshly self-punitive reactions to failure. As these are individuals whose lack of self-liking is accompanied by a high sense of competence, they tend to be characterized by high expectations and abilities. Still, they suffer an enduring sense of unworthiness that they themselves find somewhat irrational in that it remains unmoved by their achievements (see Tafarodi, 1997). At the heart of their predicament appears to lie an uncharitable conception of their own social worth that gives rise, in seeming compensatory fashion, to very rigid personal standards. These standards, when not met, lead to heightened disappointment, deflation, and self-blame. Although not higher in depression or lower in self-concept certainty than their low-SL/low-SC counterparts (Tafarodi, 1997), they appear to possess a distinctive and somewhat paradoxical amalgam of confidence and self-doubt. Given this profile, they might be expected to be especially prone to self-punitive overgeneralization when things go wrong, perhaps explaining their behavior in the present study.

It has been assumed throughout that a marked decrement in persistence following failure reflects a maladaptive fragility. It could, however, be argued otherwise. Janoff-Bulman and Brickman (1982) suggested that maintaining or increasing persistence in the face of failure is sometimes counterproductive in that it can impair overall performance, especially in speeded tasks. Fixating on relatively unyielding tasks that are not likely to lead to positive outcomes can reduce one's capacity for engaging in more profitable ventures. McFarlin, Baumeister, and Blascovich (1984), for example, found that high-self-esteem subjects' persistence on difficult

items in an associative creativity task (remote associates test) was comparable following success and failure. The persistence of low-self-esteem subjects, on the other hand, was lower following failure, just as was found here. Most important, though, because persistence did not pay off for this particular task (performance was uncorrelated with the total amount of time spent on the set of items), the greater persistence of high-self-esteem subjects on difficult items was at the expense of applying themselves to easier ones. Persistence, therefore, hurt them, such that they performed worse than their low-self-esteem counterparts following failure.

Comparability of these results with the present study is limited by the fact that quite different tasks were used. In contrast to the associative creativity task, persistence on the anagram task was expected to benefit performance. The results fit with this expectation. Potential performance cues also differed. In the study by McFarlin et al. (1984), subjects were told, "If you are having trouble with an item, you can skip over it." In the present study, subjects were told to persevere on each anagram until they felt that they were "not going to get anywhere with it." In other words, they were instructed to give up only when they felt that were not going to find a solution even if they persisted. This is essentially an admission of inability to solve the anagram, irrespective of time spent, and represents a higher quitting threshold than merely "having trouble." Questioning during debriefing repeatedly confirmed that subjects were indeed quitting when they felt they would not be able to solve the anagram and not because of strategic performance concerns.

There are several other reasons for interpreting decreased persistence in the present study as impairment rather than positive adaptation. First, all participants were told, and believed, that every anagram was soluble and that all solutions were common words that they were familiar with. Second, participants were well aware that there was no time limit imposed on either set, so that persisting on a given anagram did not entail any cost for solving the other anagrams in the set. Third, the mean performance during both sets in both feedback conditions for all groups was greater than 9 correct, suggesting that there was good reason for participants to believe that they were able to solve a fair number (about half) of the anagrams. It is, therefore, unlikely that participants approached the second set of anagrams as a task that was beyond their capabilities and hence withdrew effort accordingly. Taken together, these features support the construal of decreased persistence in the present context as a weakness that is symptomatic of the more general emotional and motivational fragility associated with low self-esteem.

Finally, it should be recognized that the broader significance of the present findings lie in their prescriptive

implications. Namely, they suggest that the links between self-evaluation and motivation may be oversimplified when theory and research adopts a unidimensional conceptualization of self-esteem. Researchers should, therefore, explicitly distinguish self-liking from self-competence in their approach to understanding these links. If the two dimensions are built on distinct forms of experience, then once established as relatively stable aspects of the self-concept, they are likely to be differentially implicated in motivational processes. This conclusion reinforces the point made elsewhere. The results reported here highlight the importance of maintaining their conceptual separation.

NOTES

1. Normalization prior to subtraction was warranted by the unequal skew of the two subscale distributions.

2. Although this may seem a high degree of loss, it is not remarkable given the characteristics of the sample. Participants were selected to conform to tightly defined disparity criteria. Those participants whose qualifying disparities persisted over time were desired. As with all self-esteem instruments, the SLCS, on which initial selection was based, is influenced to some degree by episodic shifts in self-valuation. Vicissitudes such as physical illness, relationship breakup, and failing grades can bring on such temporal shifts. Repeated measurement was used to guard against the inclusion of participants mistakenly identified as possessing a particular composite of trait self-liking and self-competence due to short-term fluctuation. Only 8% of the original sample were thus eliminated, supporting the general stability of classification. In fact, when the analyses were redone with these participants included, the pattern of results remained much the same.

3. It should be recognized that a significant simple interaction of Set \times Self-Liking or Set \times Self-Competence within one or the other feedback condition is, in the present context, essentially a significant difference between two quarters of a highly unusual, "constructed" sample. As such, it is not tantamount to a linear or nonlinear association between the dependent variable and the self-esteem dimension considered continuously. This is, of course, the limitation of forcing orthogonality of factors through targeted recruitment of subjects. Some caution should therefore be taken in drawing conclusions about the independent parametric significance of self-liking and self-competence. Even so, the results do speak to the differential importance of the two dimensions for motivational vulnerability in those with low self-esteem, as demonstrated in past research. Any theoretical position addressing how the dimensions are jointly responsible for the effect should, if correct, apply as much to accounting for the behavior of the present highly selected sample as to the behavior of a random sample, assuming qualitative equivalence in psychological processes.

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