

Development and Validation of a Scale for Measuring State Self-Esteem

Todd F. Heatherton
Harvard University

Janet Polivy
University of Toronto
Toronto, Ontario, Canada

This article examines the measurement of short-lived (i.e., state) changes in self-esteem. A new scale is introduced that is sensitive to manipulations designed to temporarily alter self-esteem, and 5 studies are presented that support the scale's validity. The State Self-Esteem Scale (SSES) consists of 20 items modified from the widely used Janis-Field Feelings of Inadequacy Scale (Janis & Field, 1959). Psychometric analyses revealed that the SSES has 3 correlated factors: performance, social, and appearance self-esteem. Effects of naturally occurring and laboratory failure and of clinical treatment on SSES scores were examined; it was concluded that the SSES is sensitive to these sorts of manipulations. The scale has many potential uses, which include serving as a valid manipulation check index, measuring clinical change in self-esteem, and untangling the confounded relation between mood and self-esteem.

There has been a resurgence of interest in examining whether aspects of the self-concept are stable or malleable (Markus & Kunda, 1986). On the one hand, there is considerable evidence that the self-concept is persistent and stable and that people will actively seek information that confirms their self-concept and reject information that threatens their general view of self (Greenwald, 1980; Swann, 1985, 1987; Wylie, 1979). Markus (1977) argued that relatively enduring self-schemata serve to make important aspects of the self more salient, easier to remember, and easier to organize. On the other hand, it is well known that situational factors can lead to momentary changes in self-evaluation (Baumgardner, Kaufman, & Levy, 1989; Jones, Rhodewalt, Berglas, & Skelton, 1981; Kernis, Granemann, & Barclay, 1989; Markus & Kunda, 1986; Rosenberg, 1986; Tesser, 1988). For example, basking in the glow of reflected glory can be understood as a process involving temporary self-enhancement as a function of a close relationship with a successful other (Cialdini et al., 1976). Conversely, comparing one's self with a successful other may cause one's own comparison to pale in contrast, thereby lowering self-esteem (Tesser, 1988). In any case, it is clear that such events can momentarily alter the self-esteem. The purpose of this article was to examine the measurement of such temporary fluctuations in self-esteem.

State Self-Esteem

The notion that self-esteem is open to momentary changes is not new. James (1890) described self-esteem as similar to a ba-

rometer that rises and falls as a function of one's aspirations and success experiences. He also noted that there is a certain average tone to the self-feelings people maintain that is largely independent of objective feedback that might contradict the self-concept. Thus, although momentary self-evaluations may be context dependent, people derive their overall sense of self-esteem by averaging feelings about themselves across a number of different social situations.

The extent to which self-esteem fluctuates has been the subject of recent empirical investigation. Savin-Williams and Demo (1983) found that self-esteem fluctuated¹ only slightly around a stable self-concept. They argued that such factors as social class, maturation, birth order, gender, and number of siblings are crucial for establishing a baseline from which fluctuations occur. A. J. Wells (1988) similarly found a stable baseline of self-esteem from which there were modest fluctuations, depending on with whom the subjects were interacting (self-esteem was lower for mothers when they were with children and higher when they were with adults) and on the interpersonal context of such social contacts. Thus, it appears that self-esteem is a relatively enduring disposition (Rosenberg, 1986) from which there is some degree of deviation. Given this, considerable research has been conducted with the goal of manipulating self-esteem (L. E. Wells & Marwell, 1976), and there is agreement that self-evaluations do vary across situations (Crocker &

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Correspondence concerning this article should be addressed to Todd F. Heatherton, Department of Psychology, Harvard University, 33 Kirkland Street, Cambridge, Massachusetts 02138.

¹ This article focuses on the measurement of self-esteem in laboratory or clinical settings rather than on changes in self-esteem that occur in field settings. The use of the experience sampling method (Csikszentmihalyi & Larson, 1987)—whereby subjects are randomly paged during their normal daily activities and asked to rate how they are feeling about themselves—has been shown to be an effective means of measuring naturally occurring fluctuations in self-esteem (Savin-Williams & Demo, 1983; A. J. Wells, 1988). However, note that A. J. Wells (1988) found this measure to be relatively unrelated to a traditional self-esteem measure (the Rosenberg scale), suggesting that the two methods might measure different constructs.

Major, 1989; Gergen, 1971; Markus & Kunda, 1986; Rosenberg, 1986; A. J. Wells, 1988).

It seems, therefore, that there is considerable theoretical and conceptual support for the notion that self-esteem can be temporarily altered, although the magnitude of such fluctuations does not appear to be large. Of concern to the present article is how such changes are measured. We provide a brief review of studies that have attempted to measure changes in self-esteem, and then we present a measurement scale that is sensitive to these momentary fluctuations.

Traditional Measurements of State Self-Esteem

Self-esteem has been manipulated in a number of laboratory studies, most often by means of false personality feedback, bogus performance feedback, or experimentally biased social comparisons. Manipulated self-esteem can be either inferred from changes in behavior or measured through self-report. Those relying on self-reports have seldom used the same instruments (L. E. Wells & Marwell, 1976). Some researchers have simply asked single questions about global happiness (Stotland & Zander, 1958), whereas others based their self-esteem measure on the subjects' performance expectations (Campbell & Fairey, 1985; Fitch, 1970; Gelfand, 1962; Gerard, 1961) or on the subjects' knowledge that they performed poorly in the failure condition (Frankel & Snyder, 1978; Pyszczynski & Greenberg, 1985) or have simply asked subjects how confident they were (Sigall & Gould, 1977).

Many researchers have reported changes in subjects' moods following manipulations of self-esteem. For example, Shrauger and Sorman (1977) found more self-reported anxiety and less general satisfaction with performance following failure than following success. Brockner and Elkind (1985) used a success-failure paradigm and found that subjects reported being more frustrated following a large failure than following a small failure or no failure at all. Baumeister and Tice (1985) also used a success-failure manipulation and found changes only for specific mood items (such as humiliation). Kernis, Brockner, and Frankel (1989) found that people reported significantly worse moods along a number of dimensions following academic failure. Likewise, McFarland and Ross (1982) found that failure and success produced a number of affective outcomes, including moods highly associated with self-esteem (e.g., feelings of pride, confidence, shame, or stupidity). Conversely, Baumgardner et al. (1989) recently found that low-self-esteem subjects showed an increase in self-esteem-related moods (items taken from McFarland & Ross, 1982) when they publicly complimented the source of positive feedback or derogated the source of negative feedback. Thus, ego-threatening manipulations produce a variety of emotional responses.

Studies that have attempted to use actual self-esteem scales to measure experimentally induced changes in self-evaluation have obtained mixed results. For example, some studies have found significant self-esteem changes following ego-threatening manipulations. Morse and Gergen (1970) found a significant self-esteem change that depended on whether a competitor for a job was seen as superior "Mr. Clean" or an inferior "Mr. Dirty." Those subjects who were shown a superior competitor experienced a reduction in self-esteem, as measured by the

Coopersmith (1959) inventory. Jones et al. (1981) found that subjects who were instructed to be self-deprecating had lower self-esteem scores on the Self-Valuation Triads (SVT) test than those who were instructed to be self-enhancing.

Other studies have failed to find any significant self-esteem changes following ego-threatening manipulations. For example, McFarlin and Blascovich (1981) used a success-failure paradigm and then had subjects fill out the Texas Social Behavior Inventory (TSBI). They did not find any pre-post differences on the TSBI, although they did find large differences in verbal expectations for future performance. Stotland and Zander (1958) also used a success-failure manipulation and did not find any changes in global self-esteem or on ratings of abilities related to the failure task. Nisbett and Gordon (1967) gave false IQ scores and then used three measures of self-esteem (one of which was a modified version of the Janis-Field Feelings of Inadequacy Scale, or JFS; Janis & Field, 1959). Nisbett and Gordon were surprised to not find any noticeable changes in reported self-esteem; "This failure is . . . surprising because the relief or disappointment of the subjects upon learning the bogus nature of their IQ scores was both audible and visible to the experimenters" (p. 271). Nisbett and Gordon concluded that pencil-and-paper measures may be insensitive to manipulations in self-esteem.

In summary, although there are consistent mood effects following ego-threatening manipulations, few studies have found significant changes in self-esteem by using self-report measures that were designed to measure self-esteem. In some ways this is not surprising, given that most of these measures were designed to assess trait or baseline self-esteem rather than acute or state self-esteem. In fact, successful fluctuation of a trait measure could be taken as evidence against the scale's validity. The 72-item SVT used by Jones and his colleagues is one measure of acute self-esteem that has had some success (Jones et al., 1981; Rhodewalt & Agustsdottir, 1986). Nonetheless, the SVT method has failed to gain popularity, possibly because it is relatively complex to administer and may be too long to serve as a brief manipulation check.²

State Self-Esteem Versus Mood

Some of the best evidence for changes in self-esteem can be inferred from self-reports of mood. For example, the mood items related to self-esteem that were developed by McFarland and Ross (1982) have been shown to measure successfully changes attributable to self-esteem (Baumgardner et al., 1989). However, this measure was developed by using an unusual factoring method,³ and it is therefore difficult to speculate about

² Because it would take too long to administer all 72 self-valuation triads (SVT), researchers will sometimes use only 10-20 of the triads for the postmanipulation measure. There is no apparent consistency on which items are chosen, and therefore it is difficult to speculate on the overall reliability of the SVT.

³ McFarland and Ross (1982) compressed 77 mood adjectives into 11 new variables by averaging items that appeared similar (on the basis of conceptual relatedness and high correlations). Two of these variables were labeled *high self-esteem* and *low self-esteem*, respectively. One problem with this approach is that it is difficult to decide whether the new variables were averaged adequately or whether some combination of the other adjectives might have produced a better acute self-esteem measure (Ghiselli, Campbell, & Zedeck, 1981).

its general validity. From a conceptual standpoint, the appropriateness of using mood scales to measure changes in self-esteem is questionable. Although mood and self-esteem are undoubtedly related (the average reported correlation between self-esteem and mood is between .40 and .60; Brockner, 1983), the two are conceptually distinct. The analogous strategy of using chronic mood measures (such as the Trait Anxiety subscale of the State-Trait Anxiety Inventory, or STAI; Spielberger, Gorsuch, & Lushene, 1972) to indicate trait self-esteem level would no doubt seem unpalatable to most researchers; in fact, we did not find a single study that used this strategy.

Another problem with using mood scales as measures of state self-esteem is that it is then impossible to differentiate between the effects of mood and the true effects of self-esteem. For example, many of the manipulations intended to alter self-esteem are also used to induce dysphoric moods or anxiety (Polivy, 1979, 1981). Because self-esteem is related to anxiety and depression (Brockner, 1983; Pyszczynski & Greenberg, 1987; Rosenberg, 1979; Tennen & Herzberger, 1987), it is possible that these manipulations have their effects on behavior as a result of changes in mood or anxiety rather than changes in acute self-esteem. Accordingly, direct measurements of state self-esteem (and changes therein) would help support the validity of self-esteem manipulations as separate phenomena from mood states. Our goal was to design such a measure of state self-esteem.

The State Self-Esteem Scale (SSES)

The first step in the development of a state self-esteem measure was to obtain suitable questions. We decided to examine popular trait measures to see whether any of them might be suitable for conversion to state measures. We settled on two scales: the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965, 1979) and the JFS (Janis & Field, 1959). We originally chose to modify the Rosenberg scale because it contains only 10 items and would therefore be quick and easy to administer. Both psychometric and experimental attempts to validate this state measure failed; the scale was quite insensitive to experimental manipulations of self-esteem largely because of minimal variability in responses (Heatherton, 1988). Part of the problem with our attempted revision of the Rosenberg scale might have been that it is a global measure of self-esteem, whereas the majority of laboratory manipulations are aimed at one or another component of the self-concept. This led us to look for a multidimensional trait scale.

The JFS is widely regarded as one of the better multidimensional scales of self-esteem (Briggs & Cheek, 1986; Crandall, 1973; Robinson & Shaver, 1973). The JFS is a 23-item test developed for use in attitude change research (Janis & Field, 1959) and contains items about self-regard, academic abilities, and social confidence (Fleming & Watts, 1980). The split-half reliability was estimated by Janis and Field to be .83, and the reliability based on the Spearman-Brown formula was found to be .91. The items from the JFS have been modified a number of times (Eagly, 1967; Fleming & Courtney, 1984; Fleming & Watts, 1980; Pliner, Chaiken, & Flett, 1990), with attempts to change the scoring format (e.g., 5- or 7-point Likert scales) or add items regarding other dimensions of the self-concept, such

as academic ability (Fleming & Courtney, 1984) or body image (Pliner et al., 1990).

Although the JFS has not been widely tried as a state measure, those times that it has been tried have not been successful (Baumeister, 1974; Nisbett & Gordon, 1967). Thus, the JFS appears to be a stable trait measure of self-esteem that does not change readily as a result of laboratory manipulations.

We chose items from the Pliner et al. (1990) and Fleming and Courtney (1984) modified Janis-Field scales for inclusion in our state measure. We selected four items for each of these five areas: academic, performance, social, appearance, and general self-esteem. These twenty items also seemed particularly suitable for modification to refer to acute rather than typical levels of self-esteem. The questionnaire was titled *Current Thoughts* to highlight the importance of momentary feelings. The following instructions were also designed to highlight current feelings of self-esteem:

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

Each item is scored on a 5-point scale (1 = *not at all*, 2 = *a little bit*, 3 = *somewhat*, 4 = *very much*, and 5 = *extremely*).

General Method

We report five studies that examine the construct validity of the State Self-Esteem Scale (SSES). Studies 1 and 2 were conducted for psychometric reasons—to test the factor structure and content validity of the scale. Study 3 examines naturally occurring changes in self-esteem in a classroom setting. Study 4 demonstrates that the SSES is sensitive to self-esteem manipulations typical of those used in the laboratory, and Study 5 examines self-esteem changes during a clinical therapy program.

Study 1

Method

Subjects

Subjects were 428 undergraduates enrolled in Erindale College of the University of Toronto. Subjects ranged in age from 17 to 57 years ($M = 20.3$, $SD = 4.3$); 284 were women and 144 were men.

Procedure

Subjects completed the SSES as well as the JFS and the Restraint Scale (Herman & Polivy, 1980) in one mass testing session. Questionnaires related to a variety of other behaviors were interspersed by other researchers (such things as sleep behavior); these questionnaires were not considered in our study.

Results and Discussion

An initial examination of the correlation matrix revealed that all of the items were positively intercorrelated, ranging from .09 to .69 (mean interitem correlation = .36; Bartlett's Test of Sphericity, $\chi^2(209, N = 428) = 4,287.7$, $p < .0001$). We also

found considerable evidence that the items were quite homogeneous and therefore suitable for factor analysis. For example, the MSA (measure of sampling adequacy; Kaiser, 1974) values for each item were all over .80, indicating an acceptable ratio of interitem correlation to partial correlation coefficients (total scale mean MSA = 0.92). As might be expected, the scale also has a high degree of internal consistency (coefficient $\alpha = 0.92$). The items for the SSES can be seen in Table 1 (along with the corrected item/total correlations and factor loadings).

A principal-axes factor analysis revealed three factors with eigenvalues greater than 1.00 (confirmed by a scree examination). These factors accounted for 50.4% of the overall variability in scores. We chose an oblique rotation because it seemed likely that the factors would be correlated. An examination of the item loadings revealed the three factors to be performance, social, and appearance self-esteem (see Table 1). All items except for Items 6 ("I feel that others respect and admire me") and 10 ("I feel displeased with myself") loaded primarily on only one of the factors. Item 6 loaded on both the appearance (.34) and performance factors (.30), whereas Item 10 loaded on both the social (.37) and appearance (.36) factors. Table 1 shows the loading on the primary factor for each item. Table 2 contains the means for the total scale and for each subfactor for Studies 1, 2, and 3. Note that the appearance factor has an overall lower mean because it contains only six items, whereas the others contain seven.

The correlations between each of the factors can be seen in Table 3. Also indicated are the correlations between each of the factors and the JFS, and a measure of dietary restraint (Herman & Polivy, 1980). It is worth noting that the social factor is most

highly related to the JFS (as would be expected because the JFS was developed as a measure of social self-esteem), whereas the appearance factor is most highly related to dietary restraint (as would also be expected). The relation between the SSES factors and other potentially related constructs is examined in greater detail in Study 2.

Study 2

Method

Subjects

Subjects consisted of 102 undergraduate volunteers from the St. George campus of the University of Toronto. This sample consisted of 72 women and 30 men and ranged in age from 18 to 43 years ($M = 22.0$, $SD = 5.2$).

Procedure

Subjects attended a laboratory session individually. Each subject was seated in a quiet room and asked to complete a variety of measurement scales. The measurement scales included both trait and state measures related to self-esteem, anxiety, and depression and included the SSES, the JFS, the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965), the Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), the State Anxiety subscale of the State-Trait Anxiety Inventory (STAI; Spielberger et al., 1972), the Atkinson and Polivy multiple affect scale for hostility and depression (Atkinson & Polivy, 1976), the Restraint Scale (Herman & Polivy, 1980; Polivy, Herman, & Howard, 1988), and the Fallon and Rozin Figures

Table 1
The State Self-Esteem Scale and Factor Loadings

Item	Primary factor	Loading	<i>r</i>
1. I feel confident about my abilities.	Performance	.65	.64
2. I am worried about whether I am regarded as a success or failure. (R)	Social	.61	.51
3. I feel satisfied with the way my body looks right now.	Appearance	.83	.54
4. I feel frustrated or rattled about my performance (R).	Performance	.47	.54
5. I feel that I am having trouble understanding things that I read. (R)	Performance	.47	.41
6. I feel that others respect and admire me.	Appearance	.34	.43
7. I am dissatisfied with my weight. (R)	Appearance	.69	.44
8. I feel self-conscious. (R)	Social	.54	.60
9. I feel as smart as others.	Performance	.68	.55
10. I feel displeased with myself. (R)	Social	.37	.74
11. I feel good about myself.	Appearance	.52	.71
12. I am pleased with my appearance right now.	Appearance	.72	.59
13. I am worried about what other people think of me. (R)	Social	.75	.59
14. I feel confident that I understand things.	Performance	.62	.52
15. I feel inferior to others at this moment. (R)	Social	.45	.66
16. I feel unattractive. (R)	Appearance	.54	.69
17. I feel concerned about the impression I am making. (R)	Social	.81	.47
18. I feel that I have less scholastic ability right now than others. (R)	Performance	.55	.61
19. I feel like I'm not doing well. (R)	Performance	.51	.60
20. I am worried about looking foolish. (R)	Social	.62	.58

Note. Coefficient alpha for whole scale = .92. *r* refers to corrected item-total correlations. (R) indicates reverse scoring.

Table 2
Scale Means and Standard Deviations for Studies 1, 2, and 3

Study	N	Total		Performance		Social		Appearance	
		M	SD	M	SD	M	SD	M	SD
1									
Men	144	71.94	13.4	25.51	5.1	25.15	5.7	21.29	4.5
Women	284	69.57	13.1	24.96	4.8	25.67	5.7	18.93	4.9
2									
Men	30	72.93	10.7	26.33	5.1	25.13	4.4	21.48	3.9
Women	72	70.92	12.5	25.76	5.1	25.14	5.6	20.01	4.0
3									
Men	29	74.83	9.8	27.00	4.3	26.83	4.8	21.28	3.3
Women	99	77.51	10.2	28.81	3.0	27.46	5.1	21.11	4.1

task (Fallon & Rozin, 1985). The Fallon and Rozin task has subjects select among a number of different cutouts of body shapes the one that most closely approximates their own figure (current appearance). In addition, we asked subjects to rate how satisfied they were with their current figure and height.

Results

As may be seen in Table 4, many of the trait and state measures used in Study 2 were significantly correlated with the SSES and its subscales. Subjects who scored high on the SSES were also likely to score high in global self-esteem, social desirability, and satisfaction with their height and body shape. Subjects who scored lower on the SSES were more hostile, depressed (state and trait), anxious, and likely to be dieting (which may be taken as evidence of body dissatisfaction).

An examination of the subscales reveals that the performance factor of the SSES was most highly related to global self-esteem, trait anxiety, and depression and was less well related to social desirability, satisfaction with height, body size estimation, and hostility. The social factor of the SSES was most highly related to trait social self-esteem (the JFS) but was less related to hostility and body size estimation. As might be expected, the appearance factor was most highly related to satisfaction with current figure, dieting behavior, body size estimation, depression, and global self-esteem (the RSE) but was unrelated to social desirability.

Table 3
Factor Intercorrelations and Correlations
With JFS for Studies 1 and 2

Measure	1	2	3	4	5	6
1. SSES total	—	.85	.87	.82	.76	-.42
2. SSES performance	.87	—	.62	.57	.63	-.33
3. SSES social	.86	.61	—	.56	.70	-.29
4. SSES appearance	.78	.54	.51	—	.56	-.45
5. JFS	.80	.62	.77	.65	—	-.34
6. Restraint	-.30	-.16	-.23	-.37	-.36	—

Note. SSES = State Self-Esteem Scale; JFS = Janis-Field Feelings of Inadequacy Scale. For all correlations, $p < .05$. Correlations below the diagonal are from Study 1; correlations above the diagonal are from Study 2.

Discussion

The results of Studies 1 and 2 provide some evidence that the SSES is psychometrically sound. The scale has a high degree of internal consistency and a robust factor structure. The derived factors make conceptual sense, and the pattern of correlations between the SSES factors and other self-report indexes demonstrates that the factors are measuring slightly different constructs (i.e., they are not redundant).

Once we were satisfied with the basic psychometric properties of the SSES, we endeavored to demonstrate construct and discriminative validity in settings where state self-esteem is normally expected to change. We therefore conducted three studies: Study 1 looked at naturally occurring academic success and failure, Study 2 examined the effects of ego threats typical of those used in social psychology research, and Study 3 examined changes in self-esteem that occurred in a clinical treatment program designed to increase social and appearance self-esteem.

Study 3

It is well established that poor performance in the academic arena produces a variety of negative emotional consequences (Brockner, Derr, & Laing, 1987; Kernis, Brockner, & Frankel, 1989; Metalsky, Halberstadt, & Abramson, 1987). Kernis, Brockner, and Frankel (1989) found that students who did poorly on a midterm exam reported more intense negative affect than those students who had done well. Metalsky et al. (1987) found that those subjects with a global, internal attributional bias for failure (as is the case with low-self-esteem individuals) remained depressed for 10 days following a midterm failure, whereas those who attributed failure to specific external sources (as do high self-esteem persons) were depressed at the moment of failure but had completely recovered within the 10-day period. Thus, doing poorly on midterm exams makes students feel worse than usual. Of relevance to this article is whether this dysphoria is related to specific aspects of the self-concept or whether the dysphoria is more global and best thought of in terms of overall mood. More specifically, we predicted that academic failure would have the greatest impact on

Table 4
Correlations Between SSES Measures and Other Variables for Study 2

Measure	Total	Performance	Social	Appearance
JFS	.76	.63	.70	.56
BDI	-.71	-.61	-.62	-.54
RSE	.72	.57	.58	.68
Trait	-.59	-.56	-.52	-.40
Depression	-.59	-.54	-.51	-.42
Hostility	-.30	-.25	-.23	-.27
MCSDS	.27	.21	.29	.15 (<i>ns</i>)
Restraint	-.42	-.33	-.29	-.45
Height	.40	.25	.34	.42
Figure	.54	.38	.32	.72
Current appearance	-.21	-.09 (<i>ns</i>)	-.13 (<i>ns</i>)	-.34

Note. $N = 102$. All correlations are significant except as noted ($p < .05$). SSES = State Self-Esteem Scale; JFS = Janis-Field Feelings of Inadequacy Scale; BDI = Beck Depression Inventory; RSE = Rosenberg Self-Esteem Scale; Trait = Trait Anxiety subscale of State-Trait Anxiety Inventory; Depression = state depression; Hostility = state hostility; MCSDS = Marlowe-Crowne Social Desirability Scale; Restraint = Dietary Restraint Scale; Height = satisfied with height; Figure = satisfied with current figure; Current appearance = current body shape.

performance state self-esteem. Social and appearance state self-esteem were not expected to change because failing on a test conveys relatively little about one's social self or one's attractiveness. Such a pattern would provide considerable support for the discriminant validity of the SSES. Given the results of Kernis, Brockner, and Frankel (1989) and Metalsky et al. (1987), we also expected that subjects who failed the midterm would report more depression, anxiety, and hostility.

Our primary goal in Study 3, therefore, was to examine the effects of academic failure on state self-esteem and mood. At the beginning of term, students were asked to participate in a study of the development of Personality Measures. Willing students were asked to fill out the SSES and a number of measures related to mood and trait self-esteem. Students also completed the SSES and mood measures following the return of their midterm grades to examine changes in self-esteem and mood. We also administered the JFS to students following receipt of their second midterm grades to check for potential changes in trait self-esteem. Although we were expecting changes in state self-esteem, we predicted that trait self-esteem would be unaffected by academic performance on one occasion.

A second goal of Study 3 was to compare the temporal stability of mood and self-esteem. It is normally assumed that state measures taken on one occasion should be relatively independent of state measures taken on a different occasion. However, the conception of state self-esteem differs slightly from those of other constructs, such as anxiety (cf. Spielberger, 1966). Earlier we introduced the notion of baseline self-esteem; fluctuations were predicted to vary only slightly around a more stable trait level, and therefore we expected state self-esteem to be somewhat more stable than mood (although, of course, not perfectly stable). Moreover, because state self-esteem and mood are conceptually separable, we expected to find that there would be stronger correlations within self-esteem measures (performance, appearance, and social self-esteem) and within mood measures (hostility, anxiety, and depression) than between them.

Method

Subjects

Study 3 respondents were 128 undergraduate students enrolled in a second-year psychology course at the Erindale College of the University of Toronto (99 women, 29 men).

Procedure

During an initial session, students completed the JFS, SSES, the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965), the Self-Consciousness Scale (which measures public and private self-consciousness and social anxiety; Fenigstein, Scheier, & Buss, 1975), and the Trait Anxiety subscale of the STAI (Spielberger et al., 1972). One week before the first midterm test, students were informed that they faced a very difficult exam and were then asked to complete the SSES and the MAACL ($n = 122$). Students also completed the MAACL and the SSES immediately after receiving their grades for the first midterm exam ($n = 102$). Finally, we had students complete the JFS and the Trait Anxiety subscale of the STAI immediately after receiving the grades for their second midterm exam to contrast changes in state measures with changes in trait measures ($n = 76$).

Results

An analysis of changes in self-esteem between Day 1 and subsequent time periods provides support for the discriminant validity of the SSES. For example, students were told on Day 2 that they faced a very difficult exam. Such information would presumably affect their performance state self-esteem but would not be expected to affect social or appearance self-esteem. In fact, that exact pattern was observed. There was an overall significant drop in performance state self-esteem, M difference = 1.28, $t(121) = 4.17$, $p < .0001$, whereas there were no changes in social self-esteem, M difference = 0.42, $t(121) = 1.29$, $p > .10$, or appearance self-esteem, M difference = 0.0. Overall, this pattern produced a significant change in total state self-esteem, M difference = 2.14, $t(121) = 2.91$, $p < .005$. It is

not surprising that students also reported being more anxious, M difference = -1.24 , $t(121) = 3.50$, $p < .001$; more depressed, M difference = -2.03 , $t(121) = 4.87$, $t < .0001$; and more hostile, M difference = -0.98 , $t(121) = 3.12$, $p < .002$, when informed of the difficulty of the impending exam. Thus, whereas there were significant changes in mood and performance self-esteem, social and appearance self-esteem did not change.

Students completed the SSES and MAACL immediately after receiving their grades for the first midterm. A series of repeated measures analyses of variance (ANOVAs) were conducted to examine changes in self-esteem and mood as a function of exam score. Because there were relatively few students who obtained As or Fs on the exam, the upper and lower groups were collapsed so that there were three categories of exam performance (A-B, C, D-F). A 1 (exam grade) \times 1 (two levels of self-esteem or mood) mixed measures ANOVA, with exam grade as the between-subjects variable and self-esteem or mood as the within-subjects variable, revealed that there was an interaction between grade and time period on total self-esteem, $F(2, 99) = 5.88$, $p < .005$, so that it was mainly those who had obtained Ds and Fs who had worse total state self-esteem.

As predicted, the effect of exam grades on state self-esteem occurred primarily for the performance subfactor of the SSES. A repeated measures ANOVA revealed two significant main effects: exam effect, $F(2, 99) = 8.49$, $p < .0005$; time effect, $F(1, 99) = 67.27$, $p < .0001$; and a significant interaction between grade received and time period, $F(2, 99) = 5.34$, $p < .01$. Essentially, all students felt diminished performance self-esteem after receiving their grades, although the effect was stronger for the students who had done poorly, M difference = 5.03 , $F(1, 99) = 52.28$, $p < .0001$, than for the C students, M difference = 2.45 , $F(1, 99) = 17.65$, $p < .0001$, or for the students who had done fairly well, M difference = 2.11 , $F(1, 99) = 8.01$, $p < .0001$. Note that there were no significant effects of exam grade on social state self-esteem, $F(2, 99) = 1.04$, $p > .10$, appearance self-esteem ($F < 1$), MAACL anxiety ($F < 1$), or MAACL depression, $F(2, 99) = 1.25$, $p > .10$. However, those who received As or Bs were less hostile than those who received lower grades, $F(2, 99) = 3.27$, $p < .05$.

Although exam grade did not interact with time period on mood, overall subjects were more anxious, $F(1, 99) = 47.46$, $p < .0001$, depressed, $F(1, 99) = 52.46$, $p < .0001$, and hostile $F(1, 99) = 67.42$, $p < .0001$, following the return of their grades, as shown by the main effects of time period. Thus, the mood scales were sensitive to overall distress but did not differentiate between those who had done relatively well and those who had not done well.

State Changes Independent of Baseline Values

Often researchers must use between-groups analyses to examine the effectiveness of ego-threatening or ego-enhancing manipulations. For example, this occurs when there are concerns about priming subjects to the issue of self-evaluation. In such cases the various scales ought to be sensitive to between-groups differences in affect or self-esteem that occur as a result of the distress. Such analyses may be less powerful than within-subject designs because of the increased variability within each

distress condition. In our study we conducted a series of one-way ANOVAs by using grade category as the independent measure and the various state scales as the dependent measures.

As may be seen in Table 5, the differences in state experience as a function of exam grade were significant only for SSES total, SSES performance, and MAACL hostility, although there was a marginal effect for MAACL depression. There were no differences in SSES social, SSES appearance, or MAACL anxiety between the different exam grade groups. As expected, the SSES performance measure was the most sensitive to overall differences between groups, independent of baseline scores.

Stability of Trait Self-Esteem

Although we obtained substantial evidence that self-esteem can temporarily change and that the SSES is sensitive to such changes, the need for such a measure would be less clear if trait self-esteem measures were also sensitive to such change. Although the JFS has been found to be generally unsuccessful at uncovering changes in state self-esteem in the laboratory (Baumeister, 1974; Nisbett & Gordon, 1967), we thought it prudent to examine whether the JFS was sensitive to naturally occurring academic failure. We did not expect trait self-esteem to show change as a function of academic feedback.

A repeated measures ANOVA revealed that there was no effect of Exam 2 performance on trait self-esteem ($F < 1$), nor did Exam 2 grade interact with time periods. It is surprising that there was an overall increase in trait self-esteem between Time 1 ($M = 113.0$, $SD = 17.4$) and Time 2 ($M = 116.4$, $SD = 20.2$),

Table 5
Overall Differences in State Measures for Exam Grade Groups

Measure	Exam grade				<i>p</i>
	D-F	C	A-B	F	
Total SSES					
<i>M</i>	67.7	73.3 _a	76.0 _a	5.16	.008
<i>SD</i>	11.1	10.4	9.1		
Performance SSES					
<i>M</i>	22.5	26.0 _a	27.2 _a	11.52	.0001
<i>SD</i>	4.6	3.9	3.2		
Social SSES					
<i>M</i>	25.0 _a	27.0 _a	27.6 _a	2.29	>.10
<i>SD</i>	5.3	5.2	4.7		
Appearance SSES					
<i>M</i>	19.5 _a	20.5 _a	21.2 _a	1.55	>.10
<i>SD</i>	3.9	3.5	3.5		
MAACL anxiety					
<i>M</i>	10.2 _a	9.5 _a	8.7 _a	1.00	>.10
<i>SD</i>	3.7	4.0	3.6		
MAACL depression					
<i>M</i>	18.9 _a	17.5 _a	15.2 _a	2.92	<.10
<i>SD</i>	5.8	6.2	5.0		
MAACL hostility					
<i>M</i>	13.3 _a	12.8 _a	10.5	3.93	<.05
<i>SD</i>	4.3	4.0	4.0		

Note. $df = 2, 99$ for each analysis. Means with common subscripts are not significantly different from each other (Fisher's LSD). SSES = State Self-Esteem Scale; MAACL = Multiple Affect Adjective Check List.

$F(1, 73) = 5.39, p < .05$. Thus, students had higher self-evaluations at Time 2, although this increase was unrelated to exam performance. Overall, the correlation between JFS at Time 1 and JFS at Time 2 was .78 ($p < .0001$), which is reasonably close to the test-retest figure of .84 provided by Fleming and Courtney (1984).

Overall Stability of the SSES and the MAACL

An additional goal of Study 3 was to compare the temporal stability of the SSES with the MAACL. Table 6 shows the correlations between state measures taken at Time 1 and the state measures taken at Times 2 and 3. Note that all of the state measures showed a moderate degree of stability, ranging from a test-retest value of .43 for the MAACL depression scale at Time 3 to a test-retest value of .75 for the social factor of the SSES at Time 2. Overall, the average test-retest values for the SSES factors (Time 1, $M = 0.71$; Time 2, $M = .62$) were nonsignificantly higher than the average test-retest values for mood (Time 1, $M = .58$; Time 2, $M = .49$).

State Self-Esteem Versus Mood

One of our primary concerns was demonstrating that state self-esteem is psychometrically separable from mood. Note that although all of the state measures were highly correlated, the mood scales appeared to show stronger associations with each other than with self-esteem (see Table 7). To test whether the SSES factors were more highly correlated with each other than with the mood scales, we conducted three principal-component analyses (one for each time period). We retained factors with eigenvalues greater than 1.0 and decided on an oblique factor solution (because the various scales are correlated). As may be seen in Table 8, each analysis resulted in a two-factor

solution for each time period. In each analysis, the first factor was composed only of the mood scales, and the second factor was composed only of the SSES scales. Thus, the factors of the SSES were more highly correlated with each other than with the various mood measures. Note that the correlation between the self-esteem factor and the mood factor was highest on the day when students had their examinations returned. This makes sense because the performance feedback on the exams probably caused similar changes in mood and state self-esteem for each person (in other words, an individual who did poorly on the exam was likely to be depressed as well as having lowered state self-esteem).

More on Discriminant Validity

Although there was some psychometric evidence for discriminant validity in Studies 1 and 2, we decided that additional data would be useful. Such analyses were predicted to aid in our understanding of the meanings of the various factors. We therefore included measures in Study 3 that might show distinctive relations to the SSES factors. For example, we included the Self-Consciousness Scale (Fenigstein et al., 1975), which measures private and public self-consciousness as well as social anxiety. Such measures are theoretically independent of performance self-esteem.

An initial correlation matrix was produced to examine the correlations between the various state and trait measures (see Table 9). Note that the SSES was related to trait self-esteem, trait anxiety, public self-consciousness, and dieting behavior but not to private self-consciousness. An examination of the subfactor correlations provides considerable support for the discriminant validity of the various subfactors. For example, the social self-esteem factor of the SSES was highly related to public

Table 6
Correlation Between State Measures at Time 1 and Corresponding Measures at Times 2 and 3

Measure	1	2	3	4	5	6	7
Time 2							
1. SSES total	<u>.70*</u>	.54*	.60*	.52*	-.35*	-.35*	-.22*
2. SSES performance	.48*	<u>.63*</u>	.36*	.23*	-.28*	-.18*	-.24*
3. SSES social	.68*	.40*	<u>.75*</u>	.39*	-.38*	-.40*	-.16
4. SSES appearance	.64*	.34*	.46*	<u>.74*</u>	-.27*	-.34*	-.22*
5. MAACL anxiety	-.48*	-.49*	-.37*	-.30*	<u>.58*</u>	.53*	.45*
6. MAACL depression	-.45*	-.46*	-.32*	-.32*	<u>.56*</u>	<u>.66*</u>	.47*
7. MAACL hostility	-.27*	-.35*	-.14	-.19*	.49*	.43*	<u>.48*</u>
Time 3							
1. SSES total	<u>.72*</u>	.55*	.63*	.56*	-.39*	-.38*	-.25*
2. SSES performance	.42*	<u>.48*</u>	.32*	.24*	-.22*	-.14	-.14
3. SSES social	.73*	.51*	<u>.72*</u>	.50*	-.43*	-.45*	-.22*
4. SSES appearance	.60*	.32*	.49*	<u>.65*</u>	-.29*	-.34*	-.25*
5. MAACL anxiety	-.31*	-.32*	-.26*	-.17	<u>.48*</u>	.35*	.46*
6. MAACL depression	-.28*	-.39*	-.18	-.16	<u>.44*</u>	<u>.43*</u>	.55*
7. MAACL hostility	-.13	-.26*	-.10	.03	.41*	.25*	<u>.56*</u>

Note. $n = 122$ for Time 2 comparisons; $n = 102$ for Time 3 comparisons. Underlined measures indicate test-retest values. SSES = State Self-Esteem Scale; MAACL = Multiple Affect Adjective Check List.

* $p < .05$.

Table 7
Correlations Between State Measures on the Same Occasion

Measure	1	2	3	4	5	6	7
Time 1							
1. SSES total	—						
2. SSES performance	.74	—					
3. SSES social	.89	.50	—				
4. SSES appearance	.79	.39	.57	—			
5. MAACL anxiety	-.51	-.46	-.45	-.36	—		
6. MAACL depression	-.54	-.42	-.47	-.43	.71	—	
7. MAACL hostility	-.26	-.30	-.17	-.22	.66	.58	—
Time 2							
1. SSES total	—						
2. SSES performance	.74	—					
3. SSES social	.74	.46	—				
4. SSES appearance	.68	.46	.42	—			
5. MAACL anxiety	-.44	-.46	-.35	-.34	—		
6. MAACL depression	-.40	-.33	-.32	-.34	.74	—	
7. MAACL hostility	-.32	-.37	-.16	-.23	.66	.73	—
Time 3							
1. SSES total	—						
2. SSES performance	.82	—					
3. SSES social	.88	.58	—				
4. SSES appearance	.74	.48	.49	—			
5. MAACL anxiety	-.59	-.52	-.50	-.34	—		
6. MAACL depression	-.55	-.48	-.46	-.35	.78	—	
7. MAACL hostility	-.42	-.44	-.32	-.23	.72	.80	—

Note. SSES = State Self-Esteem Scale; MAACL = Multiple Affect Adjective Check List. All correlations are significant at .05 level.

self-consciousness and social anxiety, whereas the performance self-esteem factor was not. Likewise, dieting behavior was significantly related to appearance self-esteem but was unrelated to performance self-esteem.

An examination of the subscales of the MAACL reveals that depression and anxiety were significantly related to trait self-esteem and anxiety (to an extent equal to that of the SSES). Thus, it appears that all of the state measures showed considerable association with trait measures, suggesting that the SSES is not more closely related to trait measures than are other state measures.

Discussion

Taken as a whole, the results of Study 3 provide considerable support for the discriminant and construct validity of the SSES. As predicted, the performance factor of the SSES was particularly sensitive to differences in exam grades, whereas the social and appearance factors were not. Although the MAACL mood scales did not differentiate between exam grades, there was an overall tendency for students to experience more intense affect following the receipt of their grades for the first midterm. This raises the possibility that all of the students—including those

Table 8
Principal-Components Analysis of State Mood and State Self-Esteem

Measure	Time 1		Time 2		Time 3	
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
SSES performance	-.20	.60	-.14	.66	-.12	.59
SSES social	-.03	.83	.07	.78	-.01	.68
SSES appearance	.02	.77	-.01	.72	.19	.78
MAACL anxiety	.76	-.21	.75	-.16	.69	-.08
MAACL depression	.67	-.29	.82	-.06	.75	-.02
MAACL hostility	.89	.14	.87	.09	.83	.15
<i>r</i>	-.33		-.39		-.58	

Note. SSES = State Self-Esteem Scale; MAACL = Multiple Affect Adjective Check List.

Table 9
Correlations Between State and Trait Measures for Study 3

Variable	SSES total	SSES performance	SSES social	SSES appearance	MAACL anxiety	MAACL depression	MAACL hostility
JFS	.75*	.59*	.68*	.53*	-.47*	-.53*	-.22*
STAI	-.68*	-.55*	-.57*	-.55*	.48*	.47*	.22*
SCS	-.34*	-.14	-.43*	-.19*	.22*	.21*	-.05
Private SC	-.09	.04	-.15	-.05	.10	.02	-.09
Public SC	-.34*	-.04	-.51*	-.15	.13	.06	-.08
SA	-.46*	-.38*	-.42*	-.31*	.31*	.33*	.09
Restraint	-.26*	.00	-.26*	-.35*	.09	.05	.13

Note. SSES = State Self-Esteem Scale; MAACL = Multiple Affect Adjective Check List; JFS = Janis-Field Feelings of Inadequacy Scale; STAI = State-Trait Anxiety Inventory; SCS = Self-Consciousness Scale; SC = self-consciousness; SA = social anxiety; Restraint = Dietary Restraint Scale.

* $p < .05$.

who received As and Bs—did more poorly than they had expected. Nonetheless, the results for the performance factor of the SSES demonstrate that this was especially true for those whose objective performance was poor.

Although the notion of states implies instability in response, the SSES and its factors were shown to be relatively stable over the course of this study. This supports our contention that there is a baseline of self-esteem around which there are minor temporary fluctuations (which can be measured, however). It is surprising, though, that we found that the MAACL mood measures were also relatively stable. This raises the possibility that the distress experienced by the students was not great (at least not great enough to disengage state from trait mood). We consider this to be additional support for the sensitivity of the SSES performance factor, which appears to have measured successfully a relatively small source of ego distress.

We also found that the mood scales were more highly correlated with each other than with the various factors of the SSES (as shown by the principal-components analysis), suggesting that, to a certain extent, moods covary independently of state self-esteem. We conclude that the SSES is only slightly (and nonsignificantly) more stable than the MAACL, that it is psychometrically separable from mood, and that it is sensitive to naturally occurring changes in self-esteem.

Study 4

Although the psychometric properties of the SSES appear to be adequate and we found that it was sensitive to naturally occurring failure, we believed that it was important to demonstrate that the scale is sensitive to manipulations typical of those used in social psychology experiments. We therefore used the SSES as the manipulation check in a study that examined the effects of failure on dietary disinhibition.⁴ In this study there were three failure conditions that were compared with a control condition. Because we were interested in the effects of self-awareness on disinhibition, we had one condition that enforced high levels of self-awareness of failure and one condition that distracted subjects from self-awareness (there was also a failure control group that did not receive a self-awareness manipulation but did experience failure). The distracted group was expected to be less ego-distressed than the high-self-awareness

failure group or the failure group that did not receive a self-awareness manipulation because the distraction was predicted to negate the presumably temporary effects of the failure manipulation (Greenberg & Pyszczynski, 1986).

Method

Subjects

Seventy-nine female undergraduates from Erindale College at the University of Toronto took part in this study in exchange for course credit.

Procedure

Subjects arrived at the laboratory to participate in a perception pilot study that involved attempting to solve the "Spin Out" game. The Spin Out game is a commercially available puzzle that requires the player to use binary logic in order to extract a center slide from a long plastic frame. Along the center slide are six wheels, which all must be pointed in the same direction for the slide to be removed from the frame. These wheels can be turned only when adjacent wheels are in the correct positions. Although the puzzle can be solved within 1 min, beginners usually require over 30 min to complete the task. Subjects then were assigned randomly to one of three failure conditions or the control condition.

Failure Groups

Simple failure. The experimenter introduced the task as a valid measure of binary logic. Subjects were told that there were many ways to solve the puzzle and that the particular method they chose would reveal aspects of their logical abilities. The experimenter then demonstrated the basic technique required to solve the puzzle and, in doing so, actually solved the puzzle except for one or two final moves. This demonstration took under 20 s. To ensure that subjects did not believe that this solution was some sort of trick, they were told that the experimenter was particularly fast at the task and that the fastest that any subject had solved the puzzle was in just over 3 min. Subjects were further told that the slowest subject had taken just over 8 min but that

⁴ The actual experimental rationale is beyond the scope of our study. Detailed information about the disinhibition findings can be found in Heatherton, Baumeister, Polivy, and Herman (1991).

almost everyone finished in around 5 min. Subjects were told that they were being timed to find out how long each of the possible methods took, and because the length of time it took them to solve the puzzle might bias their preference ratings for the task.

The experimenter started a stop watch and left the subject alone to complete the task. After 10 min the experimenter returned to the room, apparently dumbfounded, and said, "Haven't you finished yet? Over 10 minutes have gone by!" The experimenter then seized the Spin Out game from the subject, exclaimed that they hadn't done very well at all, and proceeded to solve the puzzle in under 20 s. The experimenter then earnestly asked the subject how they did normally at these sorts of tasks, such as in high school math. The subject then was told about an upcoming taste task and was left in isolation for 10 min, supposedly waiting for the experimenter to finish setting up the task. Finally, subjects completed the State Self-Esteem Scale and rated a list of 10 mood states (chosen from the MAACL).

Video condition. Subjects were introduced to the task in the same manner as the simple failure subjects but were told that they would be videotaped while they solved the puzzle. They were told that this was done so that the experimenter could examine which method they had used to solve the puzzle, as well as to analyze the steps involved in the solution. The camera was adjusted so that the hands and upper body of the subject were visible to the camera. All task instructions were identical to those given to simple failure subjects.

The experimenter returned after 10 min and repeated the same comments as in the straight failure condition. The experimenter then added that a review of the videotape might be useful to see where the subject had gone wrong. The tape was then played for the subjects and they were asked to talk about what they were thinking at all moments during the task. If subjects seemed not to be paying attention, the experimenter prompted them with a comment such as "and what were you thinking about at this point?" After the videotape was finished, subjects were asked to fill out the SSES and mood scales.

Bighorn group. If self-esteem manipulations are truly short-term, then the effect of a failure manipulation on state self-esteem should disappear after either the passage of time or after an intervening manipulation designed to counteract feelings of failure (Greenberg & Pyszczynski, 1986). This group was treated identically to the simple failure group until the final 10 min, whereupon they were asked to view a 10-minute film about bighorn sheep (produced by the National Film Board of Canada and called *Bighorn*). Subjects were told that the experimenter was considering using the film in an upcoming study and wanted to make sure that it was somewhat enjoyable. Subjects were then left alone for 10 min to watch the film. After a brief discussion about the qualities of the film, subjects were asked to fill out the SSES and mood questionnaires.

Control condition. This group was asked to play with a number of puzzles (including the Spin Out game) for 10 min and then state their preference. Subjects were not left with the Spin Out game only, because 10 min might have been frustrating or boring for some subjects. Control subjects were asked to fill out the SSES and the mood checklist at the end of this period.

Results

Subjects completed the State Self-Esteem Scale and a mood checklist following each manipulation. The items on the mood checklist were added to create one mood score (possible range was 7–70). A one-way ANOVA revealed that subjects in the simple failure, *Bighorn*, and video conditions experienced significantly lower mood than subjects in the control condition, $F(3, 76) = 5.54, p < .01$ (see Table 10). An examination of state self-esteem scores revealed that subjects in the simple failure

and video conditions had significantly reduced state self-esteem compared with the control condition, $F(3, 75) = 3.17, p < .05$; see Table 10 for means and standard deviations). As expected, the *Bighorn* video appeared to be successful at alleviating decreases in self-esteem because the group who watched the *Bighorn* video did not differ from the control condition in overall state self-esteem. In contrast, the mood scale indicated that the *Bighorn* group was more upset than the control group.

An examination of the subscales of the SSES revealed significant treatment effects for performance, $F(3, 75) = 4.28, p < .008$, and social, $F(3, 75) = 3.96, p < .02$, self-esteem but not for physical appearance self-esteem ($p > .10$). Cell means and standard deviations are shown in Table 10. One point of interest was the finding that the simple failure group had significantly lower performance state self-esteem than the bighorn group (Fisher's least significant difference, $p < .05$). Thus, the performance factor revealed the predicted differences between simple and distracted failure.

As might be expected, there was a significant correlation, $r(78) = .65, p < .001$, between trait JFS and the SSES. Within condition, the correlation between state and trait self-esteem was marginally higher in the failure condition, $r(19) = .77, p < .001$, than in the control condition, $r(18) = .49, p < .05; z = 1.37, p < .10$. The state-trait correlation in the *Bighorn*, $r(19) = .51, p < .001$, and video $r(19) = .67, p < .001$, conditions did not differ from the control condition.

Discussion

This study shows that the SSES is sensitive to momentary changes in self-esteem that occur as a result of laboratory manipulations. Both the performance and social factors of the SSES revealed that failure led to decreased self-esteem. In addition, the performance factor was sensitive to differences between the simple failure and distracted failure group, which the mood scale was not. The distraction was expected to attenuate the impact of the failure experience (Greenberg & Pyszczynski, 1986), and the results on the performance factor of the SSES indicate that this happened.

An examination of the correlations between state and trait self-esteem revealed that they were more highly correlated in the control condition than in the simple failure condition. This finding supports a baseline view of self-esteem. Under normal circumstances, state self-esteem is closely related to trait or general self-esteem level. However, following an ego threat, state self-esteem fluctuates from trait measures and the correlation is attenuated. This pattern is completely opposite to the pattern observed for state and trait anxiety, in which individuals who are high in trait anxiety are most likely to become state anxious when subjected to ego distress (Spielberger, 1966). When there is no source of distress, state and trait anxiety are presumed to be relatively uncorrelated. Thus, the development of the SSES provides evidence that state-trait relations differ between mood and self-esteem.

Study 5

To this point we have demonstrated that the SSES is a valid measure of both naturally occurring and laboratory failure.

Table 10
Results of Laboratory Study

Measure	Condition			
	Control	Bighorn	Failure	Video
Total state self-esteem				
<i>M</i>	77.5 _a	73.7 _{a,b}	67.9 _b	70.3 _b
<i>SD</i>	9.4	8.3	14.7	7.7
Performance self-esteem				
<i>M</i>	28.3 _a	26.6 _{a,c}	23.8 _b	25.2 _{b,c}
<i>SD</i>	3.3	3.8	5.8	3.0
Social self-esteem				
<i>M</i>	28.9 _a	26.7 _{a,b}	24.1 _b	24.8 _b
<i>SD</i>	4.0	3.9	6.9	3.7
Appearance self-esteem				
<i>M</i>	20.2 _a	20.5 _a	20.0 _a	20.3 _a
<i>SD</i>	3.9	3.1	3.9	3.1
Mood composite scale				
<i>M</i>	56.0 _a	47.3 _b	45.8 _b	47.3 _b
<i>SD</i>	6.0	9.9	9.9	9.8

Note. Means with common subscripts are not significantly different from each other.

However, there are other aspects of self-esteem change that we have yet to address. Our examinations of state self-esteem have concentrated on reductions in self-esteem that occur following failure. Conversely, we have not yet demonstrated that the SSES is sensitive to temporary increases in self-esteem. Such evidence is important because of the considerable clinical efforts that are undertaken to increase self-esteem (cf. Ciliska, 1990). For example, low self-esteem has been implicated in the development of a variety of emotional problems (Taylor & Brown, 1988), including chronic depression (Pyszczynski & Greenberg, 1987) and severe anxiety (such as test anxiety experienced by those who are affected; Brockner, 1983). It would therefore seem desirable to attempt to treat anxious or depressed individuals by raising their level of self-esteem. Although the task of increasing self-esteem is not an easy one, doing so successfully apparently confers considerable benefits on mental health (Taylor, 1989; Taylor & Brown, 1988) and therefore constitutes an important treatment goal. We expected that the SSES would be sensitive to increases in self-esteem that were produced through such therapy.

Study 5 was therefore designed to measure expected positive changes in self-esteem that resulted from clinical treatment. We chose to use a therapy that was designed to increase the social and appearance self-esteem of severely obese women. Such women are known for their extremely low levels of self-esteem (Ciliska, 1990), and clinical intervention has been shown to increase their feelings of self-worth and social competence (Ciliska, 1990).

Method

Subjects

Subjects consisted of 18 obese women who were taking part in a therapeutic treatment designed to improve overall self-esteem. The women ranged in age from 23 to 57 years ($M = 41.3$, $SD = 11.2$) and weighed on average 228.7 pounds ($SD = 41.8$).

Procedure

Subjects attended 10 group sessions (there were three independent groups; subjects' scores are collapsed across groups) designed to increase general self-esteem and eliminate dieting behaviors (cf. Ciliska, 1990). Sessions consisted of lessons about weight and dieting fallacies and the general deleterious effects of rejecting one's body and its signals. Subjects completed the SSES at the end of each session. Many of the women missed at least one session, although none missed more than two, nor were more than three missing on any one day. We decided to adopt the conservative strategy of assuming no change in self-esteem and therefore used the previous week's SSES scores as replacements for any missing sessions. Subjects also completed the SSES and JFS before the group treatment began and then again 3 to 6 months after the completion of therapy.

Results

The women attending this treatment program held extremely low levels of self-esteem. For example, scores on the JFS averaged 74.7 ($SD = 23.1$), and scores on the SSES averaged 56.5 ($SD = 15.4$) before treatment. This values are significantly lower than comparable values found in Study 1, $t(17) = 3.01$, $p < .0001$, and $t(17) = 3.59$, $p < .003$, respectively.³

An examination of both state and trait self-esteem measures indicates that the program was a success. For example, trait self-esteem (JFS) changed from 74.7 ($SD = 23.1$) to 88.7 ($SD = 21.22$), $F(1, 17) = 15.21$, $p < .003$, and overall state self-esteem changed from 56.5 ($SD = 15.4$) to 74.0 ($SD = 17.9$), $F(1, 17) =$

³ The modified version of the Janis-Field Feelings of Inadequacy Scale used in Study 5 is not completely comparable with the original version because the modified version did not include the six items related to academic performance. These items were not included because the questions refer specifically to school performance, and none of these subjects were students. We used linear interpolation to adjust the mean for Study 1 so that it could be compared with the mean for Study 5.

34.50, $p < .0001$. The SSES appears to be more sensitive to change because these mean differences represent 24% and 35.5% changes from baseline, respectively. An analysis of the subscales of the SSES is also instructive. Remember that this program was designed primarily to change individuals' views of their appearance and interpersonal functioning. It would therefore be expected that social and appearance self-esteem would change to a greater extent than would performance self-esteem. In fact, percentage changes for social self-esteem (55.5%) and appearance self-esteem (56.0%) appeared larger than for performance self-esteem (21.5%).

Although the SSES (and each subscale) showed improvements over sessions, the difference between adjacent sessions was seldom significant. Nonetheless, state self-esteem did improve from one session to another; repeated-measures ANOVAs revealed significant treatment effects for total SSES, $F(11, 215) = 13.37$, $p < .0001$; appearance self-esteem, $F(11, 215) = 23.24$, $p < .0001$; social self-esteem, $F(11, 215) = 12.73$, $p < .0001$; and even performance self-esteem, $F(11, 215) = 3.52$, $p < .003$. Thus, there was considerable change in SSES scores across the clinical treatment.

Discussion

The SSES was effective in measuring the specific changes in self-esteem that were predicted from the treatment program. This therapy was designed to increase social and appearance self-esteem, and that outcome was reflected in changes on those factors of the SSES. Conversely, performance state self-esteem was not expected to be changed as a result of this specific clinical intervention because there was nothing in the program related to academic or task performance. Although a small change in performance self-esteem was found, this change likely reflects a generalization or a halo effect from increased social and appearance self-esteem. That is, feeling better about some aspects of one's self-worth probably improves one's feelings about other aspects of the self-concept. The negligible change in SSES performance scores compared with stronger changes in social and appearance SSES scores provides considerable evidence for the discriminant validity of the SSES.

General Discussion

We have presented five studies that address the validity of the SSES. Considering the results as a whole, there is substantial evidence that the SSES is psychometrically sound and has a high degree of construct validity. We have demonstrated that the scale has three independent factors that are sensitive to changes in different aspects of the self-concept. For example, performance state self-esteem was affected by naturally occurring and laboratory failure, whereas social state self-esteem was affected by public failure (in the laboratory) but not private failure (failing on a midterm exam). In contrast, the appearance factor was relatively stable in the face of laboratory or academic failure. Moreover, a clinical program designed to increase social effectiveness and pride in current appearance showed dramatic change on the social and appearance factors of the SSES but only minor change on performance self-esteem.

Although the total SSES scores were reliably sensitive to each

of our manipulations, the differential sensitivity of the component factors suggests that researchers may examine the specific subscales of the SSES to gauge the effectiveness of experimental treatments. The performance factor of the SSES measures the extent to which subjects feel their performance is worthy; it would probably be most sensitive to laboratory manipulations that use bogus performance feedback or unsolvable tasks. The social factor of the SSES was most highly related to public self-consciousness and social anxiety, which suggests that it measures the extent to which people feel self-conscious, foolish, or embarrassed about their public image. This factor should be most sensitive to situations in which self-presentational concerns are threatened (Baumeister, 1982). Finally, the appearance factor of the SSES would probably be most sensitive to manipulations that make physical appearance salient.

The need for a state measure of self-esteem became apparent in part because trait measures of self-esteem have been unsuccessful in detecting momentary self-esteem fluctuations. Although trait self-esteem was unchanged by academic failure in Study 3 (hence, supporting the need for a state scale), the clinical program in Study 5 improved both trait and state self-esteem. However, note that the clinical program involved 10 group sessions aimed at changing *permanent* self-evaluations. It appears that trait self-esteem can be changed (if conditions are particularly strong), although the manipulations typically used in psychological research are seldom strong enough to produce such changes (Baumeister, 1974; Nisbett & Gordon, 1967).

Is State Self-Esteem Different From Mood? Is the Distinction Useful?

From the beginning of this project, we have been faced with the conceptual and psychometric confounding of self-esteem and mood. For example, we observed that many of the same manipulations are used to change mood and self-esteem (Isen & Gorgoglione, 1983; Polivy, 1979, 1981). This raises the question of whether *mood* and *self-esteem* are simply different terms for the same construct (e.g., negative affectivity; Watson & Clark, 1984). We believe that they are not. Instead, we argue that failures to observe experimental differences between mood and state self-esteem are due to a lack of appropriate measurement indexes. There were many differences between the mood measures and state self-esteem measures in our series of studies. For example, the performance factor of the SSES differentiated between those who had done well on a midterm exam and those who had done poorly, although the MAACL scales were not sensitive to these differences. Likewise, the mood scale used in our laboratory study supported the general effectiveness of the failure manipulation but did not detect differences between distracted and nondistracted failures. In other words, we found differences in the pattern of results obtained between the SSES and the various mood measures, which suggests that they are empirically distinct constructs.

There is less conceptual blurring of mood and self-esteem at the trait level. Low self-esteem is generally accepted not to be the same thing as depression or anxiety (no one uses a self-esteem scale to measure depression or a depression scale to measure self-esteem). In fact, many theorists discuss low self-esteem as a symptom of depression (Abramson, Seligman, &

Teasdale, 1978; Beck, 1967), and it has recently been suggested that low self-esteem may be causal in certain types of depression (Pyszczynski & Greenberg, 1987). Thus, at the trait level, self-esteem and depression are conceptually and empirically distinct. We suggest that the lack of an appropriate state measure of self-esteem has prevented researchers from distinguishing between these divergent constructs at the state level.

We believe that the SSES will help to untangle the frequent confounding of mood and self-esteem change. For example, it is conceivable that mood could be altered without altering self-esteem. Non-self-referent mood-induction procedures (such as musical mood induction; Pignatiello, Camp, & Rasar, 1986) should have mood effects that are independent of self-esteem. We would expect that such procedures would have little effect on the SSES.⁶ Such a discrimination between the true effects of mood and true effects of self-esteem change would go a long way toward clarifying the observed overlap among different aspects of negative affect (Watson & Clark, 1984).

Summary

We have presented five studies that examine the construct validity of the state self-esteem scale. We found that the scale is psychometrically sound and that it displays considerable concurrent and discriminant validity in the laboratory, in the classroom, and in clinical settings. In many ways our goal in this study was quite modest; we simply wanted to develop a better manipulation check of temporary self-esteem effects. Along the way, we discovered that the distinction between mood and self-esteem is far from trivial and that the use of the SSES may aid in our understanding of the true effects of changes in self-evaluations on thoughts, feelings, and behavior.

⁶ In contrast to our predictions, some might argue that mood-congruency effects (Blaney, 1986; Kuiper & Derry, 1982; Pyszczynski, Hamilton, Herring, & Greenberg, 1989; Segal, 1988) would lead to decreased state self-esteem as a result of activation of negative schemata. However, we note with interest that these so-called mood-congruency effects may have more to do with state self-esteem than mood. For example, Blaney found evidence that mood-congruency effects occur only for self-referent material. Moreover, Clark and Teasdale (1985) demonstrated that experimentally induced mood enhances recall of mood congruent self-referent nouns but not mood-congruent abstract nouns. Thus, it is possible that effects attributed to mood are actually attributable to state level of self-esteem. We stand by our prediction that in the absence of self-referent information, mood changes will occur that will not affect state self-esteem and therefore not affect responses on the State Self-Esteem Scale.

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