SELF-ESTEEM AND PERSISTENCE IN THE FACE OF FAILURE

by

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Abstract

Two studies tested a theory of how trait self-esteem moderates behavioral and cognitive persistence in the face of failure. Three primary hypotheses were examined. First, that high self-esteem (HSE) individuals persist more than low self-esteem (LSE) individuals when their initial attempts to reach a goal fail, but subsequent or repeated failures lead HSE individuals to reduce behavioral persistence and pursue goal alternatives more quickly than LSE individuals. Second, that when no goal alternatives are available, HSE individuals behaviorally persist more than LSE individuals. Third, despite reductions in behavioral persistence, LSE individuals do not "give up" on the failed goal but continue to persist cognitively, in the form of aversive ruminations about the failed goal. In a factorial experiment, persistence was examined as a function of self-esteem, degree of failure, and the availability of goal alternatives. As hypothesized, HSE participants behaviorally persisted more than LSE participants after a single failure, but less after repeated failure. However, self-esteem differences in behavioral persistence did not emerge when goal alternatives were unavailable. Partial support was received for the hypothesis that LSE individuals engage in more ruminative persistence than HSE individuals--LSE participants showed higher levels of ruminative persistence on one of two measures of ruminative persistence. The findings regarding behavioral persistence were conceptually replicated, and the hypothesis regarding ruminative persistence received stronger support, in a longitudinal field study in which HSE and LSE participants initially listed their goals and

reported on their behavioral and ruminative persistence regarding these goals 5 months later. HSE participants exhibited better calibration between perceptions of goal failure and behavioral pursuit than LSE participants, indicating that increasing perceptions of goal failure were associated with reductions in behavioral pursuit more for HSE than LSE participants. Although they reduced behavioral pursuit relative to HSE participants, LSE participants continued to persist cognitively, by ruminating about their goals more than HSE participants. Discussion focuses on the need to revise traditional views of HSE individuals that emphasize their tenacious persistence and views of LSE individuals that emphasize their tendency to give up in the face of failure.

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Introduction

In 1994, at the age of 45, George Foreman became the oldest man to win a professional boxing title. Foreman, who had initially retired in 1977, was of course not the first fighter to attempt a comeback. Such attempts are a relatively frequent occurrence in the boxing world. For example, after an extended absence from the ring, former champion Larry Holmes came back to fight for the heavyweight championship in 1988. Holmes, however, did not fare as well as Foreman, and has joined the ranks of many fighters whom the sporting world characterizes as simply "not knowing when to quit."

Was there something Foreman <u>knew</u> that Holmes did not? Perhaps Foreman more accurately assessed his abilities than Holmes. But did he know he was going to be successful any more than Holmes could have known he was going to fail? Did other aging boxers who did not attempt comebacks know they would be unsuccessful any more than Holmes could have known? Of course not.

Boxers cannot know when to quit any more than ordinary individuals can know when to get divorced, change careers, or stop working on a difficult problem. These are not matters of knowing, but matters of deciding--deciding when it is time to persist and when it is time to quit. While we all may wish for objective indicators that inform us when it is time to quit, such indicators rarely exist. Our decisions about whether to persist or quit are a function of personal and situational factors.

The present research focuses on several factors thought to affect persistence. More specifically, it tests a theory explaining how trait self-esteem moderates the decision to persist in the face of failure and the type of persistence that occurs. The theory asserts that when goal pursuit is met with failure, high self-esteem (HSE) and low self-esteem (LSE) individuals respond in different ways. HSE individuals behaviorally persist more than LSE individuals when their initial attempts to reach a goal fail. However, subsequent or repeated failures lead HSE individuals to reduce behavioral persistence toward the failed goal and focus thought and action on goal alternatives. LSE individuals, in contrast, continue to persist cognitively, ruminating about the failed goal and its unattainment.

The relation between self-esteem and persistence has been previously examined by researchers who have come to a general conclusion quite different from that suggested above: HSE individuals persist more than LSE persons in the face of failure (e.g., McFarlin, Baumeister, & Blascovich, 1984; Perez, 1973; Shrauger & Sorman, 1977). This apparent contradiction, however, can be explained and reconciled by noting three key differences between previous work and the present research.

First, previous research has focused solely on the behavioral aspects of persistence, neglecting the perseverating thoughts about a goal that may continue long after behavioral pursuit has ceased. This omission is at odds with influential historical conceptualizations of persistence which emphasized the

psychological processes occurring when behavioral pursuit stops. For example, Lewin and his colleagues (Lewin, 1951; Zeigarnik, 1938) maintained that if goal-directed behavior ceases, a state of psychological tension persists, keeping the goal and goal-related thoughts activated in memory. Also, previous work offers conflicting definitions of the psychological state of persistence. Whereas some have defined persistence as the tendency to work efficiently (e.g., solving so many problems per some unit of time; Perez, 1973), others have used the term to characterize efforts made in the context of perceived success as well as perceived failure (e.g., McFarlin, Baumeister, & Blascovich, 1984).

For present purposes, I reserve the term persistence to refer to goal-directed action or thought in the face of perceived difficulty. It is a state in which the individual actively attempts to reach a goal, or thinks about the attainment of a goal, while perceiving progress toward the goal as blocked or interrupted. Perceptions of goal blockage are conceived along a continuum. Impediments may be relatively minor (causing only mild disruptions in progress) or relatively severe (causing major disruptions in progress leading to perceptions of continual failure). Theoretically, persistence can take place anywhere along this continuum, but the present work focuses particularly on persistence at the more severe end of the continuum. Persistence ceases when the individual stops goal-directed activity both behaviorally (withdraws active efforts to attain the goal) and cognitively (stops perseverating on the goal), or when the obstruction

to progress is removed and the goal can be effectively pursued (e.g., difficult problems are replaced with easier ones).

A second important way that the present research differs from previous studies is that these studies have been conducted in contexts in which there is only one goal to pursue. From this perspective, persistence at a goal is perceived to be a simple function of the perceived probability of attaining that goal. If the probability of attainment is high, persistence should continue. If it is low, persistence should cease. Accordingly, since HSE individuals have relatively high expectations of success (Taylor & Brown, 1988) and high levels of self-efficacy (Bandura, 1982), they should persist more than LSE individuals. Their options are either to continue to work in the face of failure or quit entirely. It is not surprising that such a context would lead to more persistence on the part of HSE individuals. They have nothing to gain by quitting, since they cannot re-engage their efforts toward another alternative. The necessity of studying persistence in a context in which alternatives can be pursued has been expressed by several prominent theorists (Bandura, 1989; Feather, 1989). In fact, Bandura has noted how previous persistence studies may have limited applicability because they have not allowed for the pursuit of alternatives:

"The generality of evidence of unshaken pursuit of unreachable goals must be qualified, however, by the fact that laboratory simulations may differ from actual conditions on several important dimensions: The

endeavor usually involves only a brief effort, failure carries no costs, and no opportunities exist for alternative pursuits." (Bandura, 1989, p. 43).

In addition to the lack of goal alternatives, Bandura suggests that the degree of effort expended in the face of failure is an important issue. Previous research has often measured persistence in response to a single failure. However, the character of a response to failure can differ depending on whether it is a response to an initial failure or repeated failure (Kuhl, 1981; Wortman & Brehm, 1975). Whereas initial failure may yield a reassertion of effort toward the failed goal, repeated failure may lead to the activation of "self-protective mechanisms" (Hyland, 1987) such as disengagement and the redirection of effort toward other alternatives. Thus, the third way in which the present work differs from past work is in its focus on persistence in the face of repeated failure..

In sum, while past research examining self-esteem and persistence offers support for conclusions different from those presently proposed, three reasons have been given for why this is the case--past research has focused solely on persistence in its behavioral form, as it occurs in single-goal environments, and only in response to a single failure. In the following sections, I review literature relevant to the issue of self-esteem and persistence. First, I present four primary theoretical reasons why trait self-esteem should be a key moderator of the decision to persist or disengage: a) differences in the psychological outcomes

that motivate HSE and LSE individuals, b) differences in their ability to deactivate goal intentions, c) differences in their attributions for failure, and d) differences in how resiliently they respond to self-image threats. I then review other work bearing on the relation between self-esteem and persistence and show how it can also be integrated within the proposed theory. Although this work does not focus directly on trait self-esteem, it relates self-evaluation to key aspects of the self-regulation process--disengagement and standard setting. Next, I summarize a series of hypotheses regarding the behavioral and cognitive persistence of HSE and LSE individuals in the face of failure. Finally, I describe two studies testing the hypothesized relation between self-esteem and persistence.

Theoretical Bases for Self-Esteem Differences in Persistence

Achieve Success vs. Avoid Failure. Baumeister and Tice (1985; Tice, 1993) suggested that an important difference between HSE and LSE individuals is the primary psychological outcomes that motivate their goal-directed behavior. HSE individuals are primarily motivated to achieve success (approach a positive outcome) whereas LSE individuals are primarily motivated to avoid failure (avoid a negative outcome). According to Baumeister and Tice, these divergent outcome motivations should lead to different goal pursuit preferences among HSE and LSE individuals.

Their motive to achieve success should lead HSE individuals to prefer to work under conditions in which it is possible for them to attain a high level of

performance success. They should be less inclined to work under conditions where their efforts can, at best, only bring their performance up to a passable level (e.g., when they have repeatedly failed at a task and are given the option to continue working on that same task). LSE individuals, in contrast, should continue to work under these conditions. Their motive to avoid failure should cause them to continue working at the task so that they can remedy their personal deficiencies at that task and avoid future poor performances. Consistent with this hypothesis, Baumeister and Tice (1985) found that HSE participants were less motivated to continue working on a task after they had failed than after they had succeeded. The opposite was true for LSE participants.

The work of Baumeister and Tice fits well with earlier work on the achievement motive. Feather (1961) directly examined the relation between persistence and the distinction between the motive to achieve success (MS) and the motive to avoid failure (MAF). He gave two groups of participants (one in which MS>MAF and the other in which MAF>MS) a series of problems with accompanying solubility norms. For the first problem, participants were told either that 70% or 5% of people get the solution. (The problem was actually insoluble).

He found that MS>MAF participants persisted less on the first problem when the probability of success was low (i.e., 5%) than when it was high. MAF>MS participants, in contrast, persisted more when the probability of

success was low. Thus, participants primarily motivated to achieve success behaved like HSE participants in the Baumeister and Tice (1985) study, persisting less when success was unlikely. In contrast, those primarily motivated to avoid failure behaved like Baumeister and Tice's LSE participants, persisting more when success was unlikely.

The different motives that appear to drive the goal-directed behavior of HSE and LSE individuals have clear implications for their decisions regarding persistence in the face of repeated goal failure. When goal alternatives exist, HSE individuals will be motivated to reduce persistence at the failed goal and redirect their energies toward these alternatives (where success may be achieved). LSE individuals, in an effort to avoid further failure, will be less motivated by these alternatives.

Being motivated to pursue alternatives in the face of failure, however, does not imply that actual pursuit will occur. Individuals may be motivated to achieve many things, but never direct motives into action. What would strengthen the case considerably for the proposed self-esteem differences in persistence is to identify particular processes that allow HSE individuals to switch more easily to alternative goals in the face of failure and processes that foster continued ruminative persistence on the part of LSE individuals. I discuss these processes below.

Deactivation vs. Rumination. Kuhl and his associates (see Kuhl & Beckmann, 1994) have conducted an extensive examination of individual

differences in the ability to initiate and sustain changes in goal-directed behavior in the face of repeated goal failure, a construct Kuhl has termed action versus state orientation (Kuhl, 1981, 1994a). In the face of repeated goal failure, "action-oriented" individuals deactivate thoughts related to the failed goal, which allows them to effectively implement alternative goals. "State-oriented" individuals continue to ruminate about the failed goal (focusing on the negative state of failure) while remaining behaviorally passive. This continued rumination prevents the implementation of alternative goals and also hinders attempts to effectively pursue the failed goal. There is evidence that HSE individuals are more action-oriented in their response to repeated failure whereas LSE individuals are more state-oriented.

The most direct evidence comes from correlations between measures of trait self-esteem and the dispositional measure of action versus state-orientation--Kuhl's Action Control Scale (ACS; Kuhl, 1994b). The measure is bipolar, with higher scores indicating greater action-orientation and lower scores indicating greater state-orientation. Campbell and Di Paula (1996) found strong correlations (e.g., r=.36, p<.001) between the Rosenberg Self-Esteem Inventory (1965) and the ACS[1].

Other evidence comes from examining the association between action versus state orientation and depression.[2] Measures of depression correlate significantly with the ACS (Rholes, Michas, & Schroff, 1989). Experimental findings indicate that depressed participants engage in elevated levels of state-

oriented thought after failure relative to their nondepressed counterparts (Kammer, 1984). Other research indicates that depressed individuals respond to task interruption with increased state-orientation which, in turn, impairs their ability to perform alternative tasks (Kuhl & Helle, 1986).

Specific Attributions vs. Global Attributions. The attributions individuals make for failure influence their motivation to pursue alternatives. One dimension emphasized by several investigators to be of central importance is attributional globality--the extent to which the cause of a failure is attributed to global factors (e.g., "I lack the intelligence to do well at most things") or more specific factors (e.g., "Rote memorization is not my cup of tea") (e.g., Abramson, Seligman, & Teasdale, 1978; Weiner, 1985). HSE and LSE individuals differ in their attributional tendencies along the globality dimension, with LSE individuals tending to attribute failure to more global factors (Campbell, Chew, & Scratchley, 1991; Cohen, van den Bout, van Vliet, & Kramer, 1989; Peterson, Schwartz, & Seligman, 1981).

The global nature of the attributions made by LSE individuals should reduce their motivation to pursue alternative goals, since alternatives will be perceived as only holding the prospect of continued failure. In contrast, the specific nature of the attributions made by HSE individuals should not inhibit this pursuit, since the specific causes of failure relevant to one goal are not likely relevant to alternatives.

Other evidence related to the globality dimension also suggests that LSE and HSE individuals differ in their tendencies to pursue alternatives in the face of failure. Research by Kernis and his associates (Kernis, Brockner, & Frankel, 1989) has demonstrated LSE individuals' proneness to "overgeneralization"--the tendency to think of many other aspects of the self that are negative after failure. Overgeneralization reduces motivation to succeed on subsequent tasks. Indeed, Kernis et al. (1989) found that, after doing poorly on an exam, LSE subjects' decreased motivation to study for subsequent exams was due to their tendency to overgeneralize the initial failure.

Resilience vs. Non-resilience. Switching to a new goal after experiencing repeated failure requires a fair amount of resilience. To be successful one has to be able to "bounce back" from the failure, to not let the failure inhibit pursuit of the new goal. There is evidence that HSE individuals are more resilient in the face of failure than are LSE individuals.

According to Steele (1988), individuals can respond resiliently to self-image threats to the extent that they can affirm other positive aspects of the self. This affirmation affords resilience because it makes it less important for the individual to focus on reducing the original threat. For example, someone threatened by their recent failures on the tennis court should be less motivated to reduce this threat directly (e.g., by downplaying the importance of tennis) if they have the opportunity to affirm something positive about themselves (e.g.,

their devotion as a father). The affirmational process enables the individual to bounce back from repeated failure.

Steele and his associates (Steele, Spencer, & Lynch, 1993) argued that because HSE individuals, by definition, perceive themselves as possessing many positive aspects, they should respond more resiliently to self-image threats than LSE individuals. Indeed, Steele et al. found HSE participants responded more resiliently to a self-image threat than LSE participants when their self-concepts were made salient. The positive self-aspects of HSE individuals enable them to bounce back from failure more easily than LSE individuals.

Steele's work suggests an interesting relation between goal failure and goal importance. Previous research has found that in response to failure at a task, individuals reduce the importance of the task (e.g., Harter, 1993) or, similarly, reduce the relevance of the dimension that the task assesses (Tesser, 1988). This is particularly true for HSE individuals (Shrauger & Patterson, 1974). This may not occur to the same degree, however, under conditions in which an alternative goal can be successfully pursued. The alternative may act as a kind of affirmation which actually reduces motivation to disidentify with (i.e., reduce the importance of) the failed goal. For example, after a miserable performance on the tennis court a man may be less motivated to reduce the importance of tennis if he receives a big hug from his children (affirming his fatherhood) than when he does not have the opportunity to engage in such a self-affirmation.

Having enumerated four primary reasons for potential self-esteem differences in persistence, I now review other work that focuses on two key aspects of self-regulation--disengagement and standard setting--and discuss the relation of these aspects to self-evaluation.

Self-Evaluation and Disengagement

While cultural values emphasize the importance of persistence, most of us appreciate the importance of being able to disengage, particularly in the face of repeated failure. We are inspired by such sayings as, "Success is getting up one more time than you've been knocked down," but know this really depends on just how many times we've been knocked down.[3] Effective self-regulation depends just as much on our ability to quit as on our ability to persist (cf., Janoff-Bulman & Brickman, 1982). In fact, reluctance to disengage in the face of continued failure has been considered by several theorists to be a central mechanism by which low levels of self-evaluation develop.

Klinger (1975) argued that depression results from continued commitment to a current concern (or goal) in the face of repeated failure. In his model, initial goal failures are met with increased behavioral effort to reach the goal (cf., Wortman & Brehm, 1975). When failure continues, this effort is reduced. However, if the value of the goal remains high and the value of other alternatives remains low, the result is a "downswing into depression." Recovery from depression is aided by reengagement in other goals and a devaluation of the failed goal.

Klinger's model suggests that depression is associated with a particular kind of commitment, one in which the individual continues to identify with a repeatedly failed goal, but no longer takes active steps to reach it. Persistence continues cognitively, but not behaviorally. This is consistent with research by Bandura and Abrams (1986) which showed that, after failure to reach a goal, depression increased most for participants who experienced a reduction in motivation to actively pursue the goal, but continued to view its achievement as important.

Other work also posits that depression and low self-esteem develop through a reluctance to disengage in the face of repeated failure. According to Pyszczynski and Greenberg (1987, 1992), a goal should normally be abandoned when the perceived probability of attaining that goal is low. However, they argue, perseveration may often continue despite lowered expectations. This is most likely to occur when importance is placed on a single goal and alternative goals are devalued (cf., Carver & Scheier, 1986; Klinger, 1975; Pervin, 1991). When that goal becomes unattainable, the individual gets "stuck" in a cycle of ruminating about the goal. This continued perseveration leads to depression and low self-esteem.

As Pyszczynski and Greenberg note, their emphasis on continued perseveration differs markedly from other theories of depression which focus on how depressed individuals are more likely to give up in the face of failure. For example, according to the learned helplessness theory of depression

(Abramson, Seligman, & Teasdale, 1978; Seligman, 1975; Seligman, Abramson, Semmel, & von Baeyer, 1979) a central pathway to depression (and thus diminished self-evaluations) is the felt state of helplessness that results from the perceived noncontingency between one's actions and outcomes. One situation in which this is thought to occur is when the individual is confronted with an extremely difficult goal and, despite his or her best efforts, cannot make any progress toward that goal. This, in turn, should reduce persistence motivation.

Pyszczynski and Greenberg's theory states quite the opposite--that depression and low self-esteem are maintained through an unwillingness to give up on goals in the face of failure. The critical difference between the two theories is that learned helplessness theory draws its conclusions regarding persistence motivation focusing solely on persistent action. Reductions in behavioral pursuit are necessarily taken as evidence of reductions in motivation. In contrast, Pyszczynski and Greenberg assume that persistence is a cognitive as well as a behavioral phenomenon, allowing for the possibility of continued persistence after cessation of goal-directed action.

Consistent with this notion is the growing body of evidence indicating that outcomes typically thought to reflect motivational deficits actually reflect an inability to discontinue rumination about failed goals. Much of this evidence has been gathered by Kuhl and his associates (e.g., Kuhl & Weiss, 1994) examining the moderating effects of action versus state orientation on goal performance. Action versus state orientation has been found to moderate the negative

changes in performance that have been observed after individuals are repeatedly exposed to insoluble tasks--changes that have been typically thought to reflect reductions in persistence motivation (Seligman et al., 1979).

For example, Kuhl (1981) found that only state-oriented individuals experienced performance decrements on a test task after they were "pretreated" with failure on a training task. Importantly, these individuals did not experience reductions in motivation to perform the task relative to their action-oriented counterparts who outperformed them. In a subsequent study examining the cognitions most salient to state-oriented individuals as they experience performance decrements after failure, it was found that state-oriented participants did indeed ruminate more about the past failure (focusing on their negative emotional state and their initial poor performance) relative to action-oriented participants, who focused on problem solving strategies (Brunstein & Olbrich, 1985).

The association between low self-esteem and state orientation suggests an alternative cause of the performance decrements typically found to plague LSE individuals after failure (e.g., Brockner, 1979, Shrauger & Rosenberg, 1970). Such decrements may not be the result of reductions in persistence motivation but of increases in rumination about the failure. For example, Campbell and Fairey (1985) found that while LSE participants performed poorly relative to HSE participants after failure was made salient to them, they did not report decreases in effort relative to HSE participants. They did report more

preoccupation with aversive thoughts related to their poor task performance, however.

The above evidence suggests that necessarily characterizing individuals who remain behaviorally passive, or who perform poorly, as "giving up" is often misleading. On the contrary, individuals who display such characteristics in the face of goal failure are often quite engaged--continuing to identify with failed goals and ruminating about these goals. Furthermore, these responses to goal failure appear characteristic of LSE and depressed individuals. Evidence regarding other aspects of self-regulation also points to the inability of individuals with low self-evaluations to relinquish failed goals.

Self-Evaluation and Standard Setting

Individuals who continue to set goals well above their perceived ability level would seem to be setting themselves up for repeated failure. If they continue to identify with these goals they are faced with perceiving chronic discrepancies between where they are and where they want to be. Such discrepancies would likely foster continued ruminative persistence (Martin & Tesser, 1989; Martin, Tesser, & McIntosh, 1993). There is evidence that individuals who have low self-evaluations do indeed set goals in a manner that maintains chronic discrepancies.

For example, research by Higgins and his associates (Higgins, 1987; Moretti & Higgins, 1990) shows that self-esteem and depression are related to the discrepancy between an individual's perceived current standing on a

dimension and his or her ideal standing on that dimension. Results from a number of studies indicate that the larger the discrepancy between individuals' actual self-views and ideal self-views, the more depressive affect they experience and the lower their self-esteem. Moreover, these discrepancies are relatively chronic--individuals who perceive they are falling short of their ideals maintain this perception over an extended period of time (Higgins, 1987). The chronicity of such discrepancies suggests that these individuals continue to identify with goals for which failure is quite likely. Other research also suggests that LSE and depressed individuals maintain chronic goal discrepancies that set them up for repeated failure and continued rumination.

LSE and depressed individuals are more perfectionistic than their HSE and nondepressed counterparts (e.g., Hewitt & Flett, 1991). According to several formulations of the construct (Burns, 1980; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991; Pacht, 1984), perfectionism entails setting rigid and unrealistically high standards--standards which, of course, are not likely to be achieved. Perfectionists do not relinquish these standards, however. Therefore, chronic discrepancies are maintained in the face of repeated failure, setting the stage for continued ruminative persistence.

There is also evidence that the manner in which individuals with low self-evaluations respond to goal failure actually increases their goal discrepancies. For example, after initially inducing participants to experience either a positive or negative mood, Wright and Mischel (1982) administered failure feedback after

each of a series of performance trials. Not surprisingly, they found that participants initially induced to feel negative became progressively less satisfied with their performance and themselves, and expected lower performance outcomes after each trial relative to participants induced to feel positive. However, as their expectations regarding their performance dropped, negative mood participants actually raised their performance standards, whereas positive mood participants set standards more commensurate with their expectations. Thus, those participants induced to feel negatively set their goals so as to increase the discrepancy between their current and desired state and, therefore, maintain negative self-evaluations. As Wright and Mischel (1982) concluded, "these unhappy people virtually guaranteed their future unhappiness and self-defeat" (p. 912).

These results are consistent with more recent work by Cervone and his associates (Cervone, Kopp, Schaumann & Scott, 1994) who reported that negative affective states caused participants to lower their self-evaluations, but to increase their performance standards. The results are also consistent with research by Simon (1978) who found that in the face of decreasing progress on a task, depressed participants continued to raise their goals in relation to that task, fostering increasing performance-goal discrepancies. Thus, individuals who maintain negative self-evaluations appear to respond to goal failure by setting an even more exacting performance standard--a pattern likely to foster continued ruminative persistence.

There is some recent research inconsistent with the above pattern, however. Baumeister and his associates (Baumeister, Heatherton, & Tice, 1993) found that after experiencing failure, HSE participants tended to set standards that exceeded their performance capabilities.

Hypotheses Regarding Self-Esteem Differences in Persistence

Several hypotheses regarding self-esteem differences in persistence follow from the above analysis. In response to initial failure, HSE individuals should behaviorally persist more than LSE individuals. However, repeated failure should lead to a reduction in behavioral persistence on the part of HSE individuals and to the pursuit of goal alternatives. LSE individuals should be slower than HSE individuals to switch to goal alternatives under these conditions.

In the context in which only a single goal exists, however, HSE individuals should persist more than LSE individuals, even in the face of repeated failure. Their high self-efficacy will keep them persisting in the face of no alternatives--in the face of no other route to fulfillment of the success motive.

HSE individuals should disidentify with goals that they are failing to attain more than LSE individuals. This difference should be more pronounced the more threatening the conditions are (e.g., under repeated failure). An exception to this should be when goal failure is followed by the relatively successful pursuit of an alternative goal. In this instance, successful pursuit should act as a self-affirmation (cf., Steele, 1988) and reduce the motivation for disidentification with

the failed goal. Under these conditions, disidentification should be less pronounced than under conditions where goal alternatives cannot be successfully pursued, and self-esteem differences in disidentification should diminish. Finally, LSE individuals should engage in more ruminative persistence regarding failed goals than HSE individuals.

Summary

I presented four primary theoretical reasons why HSE individuals would persist less than LSE individuals in the face of failure--differences in the psychological outcomes that motivate HSE and LSE individuals, differences in their ability to deactivate goal intentions, differences in their attributions for failure, and differences in how resiliently they respond to self-image threats. I have also noted how literature relating self-evaluations to disengagement and standard setting is consistent with this position. For example, several theories posit that diminished self-evaluations stem from a reluctance to disengage from goals in the face of failure. Research suggests that performance decrements of those with low self-evaluations following failure stem from an inability to discontinue ruminative persistence, not from reduced motivation to achieve the failed goal. The literature examining self-evaluation differences in standard setting indicates that individuals with low self-evaluations set standards in a manner that fosters continued ruminative persistence.

Two studies testing the hypothesized relation between self-esteem and persistence are described below. Study 1 tested the hypotheses in the

laboratory by manipulating the goal options and degree of goal failure experienced by HSE and LSE participants. Study 2 was conducted in the field, and assessed goal persistence and perceptions of goal failure among HSE and LSE participants over the course of an academic year.

Study 1

The purpose of this study was to test the hypothesized impact of goal alternatives and goal failure on self-esteem differences in persistence. It was predicted that HSE participants would behaviorally persist more than LSE participants after a single failure. After repeated failure, however, it was predicted that the behavioral persistence of HSE participants would depend on whether or not a goal alternative could be pursued. Under conditions in which no alternative is available, HSE participants should persist more than LSE participants; under conditions in which an alternative could be pursued, HSE participants should persist less than LSE participants and less than HSE participants who could not switch to an alternative. LSE participants should not differ in their persistence across these two conditions.

It was also predicted that HSE participants would disidentify more with a failed goal than LSE participants, particularly after repeated failure. However, when participants could successfully pursue an alternative goal, it was predicted that they would disidentify less than when they could not pursue an alternative,

and that the self-esteem difference in disidentification would diminish. Finally, it was predicted that LSE participants would engage in more ruminative persistence regarding the failed goal than HSE participants.

Method

Overview and Design

Participants pretested on self-esteem received either one instance or three instances of failure feedback. They were subsequently presented with the failed task under one of two instructional sets manipulating goal options: a) they could only work on this task again, or b) they could switch to another task, measuring a different ability. The amount of time participants worked on the failed task constituted the measure of behavioral persistence. After this measure was collected, participants engaged in a task measuring the accessibility of goal-related thoughts, an index of rumination. The study was a 2 (Self-Esteem: High, Low) X 2 (Type of Failure: Single, Repeated) X 2 (Switch Option: No Switch, Switch) factorial design.

Participants

Participants were 171 (100 female, 71 male) undergraduates scoring in the upper third (HSE) or lower third (LSE) of a distribution ($\underline{N}$=486) of Rosenberg Self-Esteem Inventory scores (RSEI; Rosenberg, 1965) collected via a take-home questionnaire packet completed at least 3 weeks prior to participation. The RSEI is a well validated and reliable measure of trait self-esteem,

possessing high internal consistency, $\alpha \cong .90$, and good test-retest reliability, $r \cong$ .85 over two weeks, (see Robinson & Shaver, 1991). Six participants were dropped for suspicion regarding the feedback and 5 were dropped for failing to follow instructions properly, leaving 160. The mean self-esteem score was 45.01 for HSE participants and 30.33 for LSE participants. Participants ranged in age from 16 to 24, with a mean age of 18.3. Sixty-six percent of participants were born in Canada, 11% in Hong Kong, and the remaining 23% were born in one of 16 other countries. Participants received extra credit for participating.

<u>Procedure</u>

The experiment was presented as a study of the relation between cognitive skill and personality, with participation requiring participants to work on a series of tasks and fill out some brief questionnaires. Participants completed the state version of the Positive Affect[4] and Negative Affect Schedule (PANAS; Watson & Tellegen, 1988). The measure of Negative Affect (NA) served as a baseline measure of state NA to be compared with a second NA assessment made after participants received their feedback (see below). This comparison was used to assess the affective impact of the feedback. Participants were told that they would complete the affect measure at several points during the study and were given the rationale that, since it may relate to performance, affect must be monitored throughout the study.

The experimenter then introduced the Word Fragment Test (WFT)--a test measuring an ostensibly important cognitive skill called "inferential agility." The

experimenter stressed the importance of inferential agility by giving a brief

description of the ability and its correlates:

> "Inferential Agility involves the ability to draw accurate conclusions based
>
> on limited information, to quickly see the logical and practical implications
>
> in situations where the outcomes are uncertain...those who are high in
>
> Inferential Agility are excellent decision makers."

Participants were also informed of the possibility of later working on another

task, the Remote Associates Test (RAT), an ostensible measure of "creative

integration." To ensure that participants viewed the RAT as a separate goal,

measuring a different ability, it was contrasted with the abilities being assessed

by the WFT:

> "...the RAT obviously measures a very different ability than the
>
> WFT...Those who are high in Creative Integration are very effective at
>
> integrating diverse ideas and can easily see associations between
>
> seemingly different concepts."

Participants received two sample items (one easy, one difficult) from the WFT

and the RAT. This was done so that participants believed that the items varied

in difficulty, and that the upcoming difficult WFT would be viewed credibly. To

ensure feelings of goal failure, the actual WFT consisted of two moderately

difficult and four extremely difficult items, based on previous completion norms

(see Appendix A). Participants were then seated in front of a computer terminal

which delivered further instructions.

A computer program informed participants they would be taking the WFT, and again stressed the importance of the ability. Participants then indicated their performance expectations on a Likert scale anchored by 1 (poor) and 9 (excellent). This measure would be compared with participants' post-failure performance evaluations as a check on the effectiveness of the failure induction. They also indicated the number of WFT items (out of six) they believed they could solve correctly. This served as a measure of the specific goal participants had upon beginning the task and would be compared to their actual performance on the task to determine the degree of objective goal failure. Participants then indicated their initial degree of identification with the ability measured by the WFT by rating how important it was for them to have good inferential agility on a scale ranging from 1 (not at all) to 9 (extremely). This measure would be compared to a final measure of identification to assess degree of disidentification with the ability measured by the WFT.

Participants were then informed that they would be working on either one WFT (Single Failure condition) or three WFTs (Repeated Failure condition). All participants then began work on the first WFT and were given 30 seconds to solve each of the 6 items. After each item, the computer informed participants if they had the correct answer. When participants answers were incorrect, the computer displayed the correct answer. (If participants provided no answer within 30s, the computer gave the correct answer, then moved to the next item.) After completing the WFT, the computer "scored" the test and administered

failure feedback. Participants were informed that they performed in the bottom third of students taking the test at their university. Participants in the Repeated Failure condition took two additional WFTs and received failure feedback (indicating again that they had scored in the bottom third) after each one. Participants then indicated their performance perceptions on the same scale used for indicating their performance expectations and completed the PANAS a second time.

Participants then engaged in a brief thought-listing task. They recorded, on a sheet provided by the experimenter, those thoughts that were most salient to them as they did the task(s). Participants in the Repeated-Failure condition recorded their most salient thoughts during their third attempt at the WFT. These thoughts would later be coded for the presence of state-oriented rumination.

The computer then informed participants that, in order for the experimenter to collect the required data, they had to do one more WFT. They were instructed that they could subsequently work on additional WFT's if they wished, but were not obligated to do so. Each subsequent WFT would be structured and administered in the same manner described above (i.e., 30 seconds per item, feedback after each item) with the exception that participants would not receive general feedback after each test. After each WFT, participants would be given the option to attempt another WFT or discontinue work on the WFT. They were also told that they could browse through some

magazines if they did not want to work on additional tasks or when they stopped working. This instruction ensured that participants did not view the consequences of early termination as "sitting and doing nothing." They were informed that for the next 25 minutes, the experimenter would be occupied getting materials together for another project and that he would return to administer some final measures. They were told that, if they decided to work on additional WFT's, they would receive additional feedback regarding their performance at the conclusion of the study.

Participants were then assigned to one of two goal option conditions. In the No-Switch condition, participants received no further instructions. This condition represents that which has existed in previous studies on self-esteem and persistence--studies that afforded participants no goal alternatives. In the Switch condition, participants were informed that they had the option of working on another test during the 25 min period--the Remote Associates Test, or RAT. Participants were told that because working on the RAT contaminates scores on the WFT, if they decided to switch to the RAT they could not switch back to the WFT. This instruction was instituted to make behavioral persistence on the WFT in the No-Switch condition and Switch condition directly comparable. That is, in both conditions, stopping work on the WFT meant deciding to abandon it entirely. Also, to enhance the belief that the two tasks represented two very distinct abilities (and therefore different goals) participants were told that if they decided to switch tasks they would receive separate feedback for each task.

This allowed success on one task and failure on the other task to be separate. The RAT was structured like the WFT--comprised of 6 items with item by item feedback. However, in order to test the hypothesis regarding the effects of successful goal pursuit on disidentification, the RAT was designed to yield relative levels of success compared to the WFT (it contained four easy and two difficult items.) After each 3-minute RAT segment, participants indicated their task intentions in the same manner as they did for the WFT. Behavioral persistence was operationalized as the number of minutes participants worked on the WFT.

At the end of the 25 minutes, participants indicated, on a scale from 1 (not at all) to 9 (totally), the extent they had, or could have if they continued to work at it, reached the initial WFT goal they stated at the outset. Given that the WFT was designed so that participants would not achieve their initial goal, this item essentially served as a measure of goal efficacy--the degree to which participants believed they could have reached their goal. They also rated the progress they perceived they were making toward their goal on a scale anchored by 1 (poor) and 9 (excellent). These measures would be used to determine the extent to which participants' behavioral persistence was associated with perceived efficacy and progress--variables previously identified as regulators of persistence (e.g., Carver & Scheier, 1990). Participants then indicated their WFT performance perceptions on the same scale as before and completed the final measure of goal identification;. on a scale ranging from "not at all" (1) to

"extremely" (9) they indicated how important it was for them to possess the ability measured by the WFT.

Participants in the Switch condition who worked on the RAT responded to two items after they finished work on the RAT. On a scale ranging from 1 (tasks measured exact same ability) to 9 (tasks measured totally different abilities), they indicated how different/similar they perceived the abilities measured by the WFT and the RAT to be. This item would determine the extent to which participants viewed the two tasks as representing different goals. They also indicated their RAT performance perceptions on the same scale as that used for the WFT. This item would be used to check if the RAT did indeed yield higher performance perceptions than the WFT.

Participants then completed a goal accessibility measure (adapted from Martin, Tesser, & McIntosh, 1993) which served as a measure of ruminative persistence. Participants were presented with a series of 10 asterisk strings. Every 5 seconds one of the asterisks disappeared to reveal a letter. For each string, the participants' task was to identify (and type into the computer) the word that was being presented before all of the letters were uncovered. The time it took participants to identify each word was recorded, representing the accessibility of each word. The use of accessibility as the measure of ruminative persistence results from work suggesting that rumination heightens accessibility of goal-related thoughts. Thus, continued rumination about a goal yields heightened access to words related to that goal and, therefore, faster recognition

of those words (Martin et al., 1993). Accordingly, four of the words presented were related to the WFT, the initial goal that participants pursued. These words were: logical, agility, fragment, practical. Two words were related to the RAT: creative and integrate. Four words were neutral, unrelated to either task (e.g., hardware).

<div align="center">Results</div>

<u>Self-Esteem Differences in Initial Affect and Expectations</u>

It was expected that LSE participants would feel worse and have lower performance expectations than HSE participants. This was indeed the case. T-tests revealed that, at baseline assessment, LSE participants were experiencing higher levels of NA, $t(158)=2.52$, $p<.05$, had lower WFT performance expectations, $t(158)=2.24$, $p<.05$, and expected to get fewer items correct than HSE participants, $t(158)=2.16$, $p<.05$ (see Table 1).

Table 1

Self-Esteem Differences in Initial Negative Affect and Expectations

Self-Esteem		Negative Affect	Expectations Rating	Number Correct (out of 6)
LSE				
	M	1.53	4.94	3.25
	SD	.44	1.55	1.04
HSE				
	M	1.37	5.43	3.56
	SD	.31	1.17	.78

Note. Cell means based on n=80.

Tests of the Failure Induction

The procedures were designed to induce feelings of failure in all participants. To determine if this was achieved, three indices of failure were examined--expectations vs. performance perceptions, expected number correct vs. actual performance, and changes in negative affect.

Performance expectations vs. performance perceptions. A Self-Esteem X Type of Failure X Assessment (initial WFT expectations vs. post-feedback WFT perceptions) analysis of variance (ANOVA) with repeated measures on the third factor revealed the expected main effect of the repeated measure, F(1,

156)=926.26, $\underline{p}$<.001, indicating that participants' performance perceptions ($\underline{M}$= 1.69, $\underline{SD}$=.91) fell well below their expectations ($\underline{M}$=5.18, $\underline{SD}$=1.39). A marginal interaction between Self-Esteem and the repeated measure was also obtained, $\underline{F}$(1, 156)=2.85, $\underline{p}$=.09, indicating that HSE participants' performance perceptions fell more sharply relative to expectations than did LSE participants'. Consequently, HSE and LSE participants viewed their performance in equally negative terms as they began work on the additional WFT, (HSE $\underline{M}$=1.74, $\underline{SD}$=.92; LSE $\underline{M}$=1.64, $\underline{SD}$=.90). No other effects were significant (see Table 2).

Number correct expected vs. actual performance. The number of WFT items participants believed they could solve (out of six) represented their initial performance goal for the WFT. It was expected that their actual performance would fall well below their goal, given the difficulty of the WFT. A Self-Esteem X Number Correct (Expected, Actual) ANOVA with repeated measures on the second factor revealed the expected main effect for the repeated measure, $\underline{F}$(1, 156)=465.62, $\underline{p}$<.001, indicating that the actual number correct on the initial WFT ($\underline{M}$=1.07, $\underline{SD}$=.92) fell well short of the goal ($\underline{M}$=3.41, $\underline{SD}$=.93). No other effects were significant (see Table 2).

Changes in negative affect. A Self-Esteem X Type of Failure X Affect Assessment (baseline, post-feedback) ANOVA with repeated measures on the third factor yielded the expected main effect of the repeated measure, $\underline{F}$(1, 156)=122.17, $\underline{p}$<.001, indicating that participants felt more negative after receiving the failure feedback ($\underline{M}$=1.96, $\underline{SD}$=.70) than before ($\underline{M}$=1.45, $\underline{SD}$=.37).

A significant interaction was also obtained between Self-Esteem and the repeated measure, $F(1, 156)=5.65$, $p<.05$. LSE participants experienced sharper increases in NA (Post-Feedback $M=2.15$ vs. Baseline $M=1.53$) relative to HSE participants (Post-Feedback $M=1.78$ vs. Baseline $M=1.37$). This is consistent with previous research indicating that LSE individuals show more extreme negative affective reactions to negative feedback than HSE individuals (e.g., Shrauger & Rosenberg, 1970). No other effects were significant (see Table 2). Taken together, the above results indicate that, as intended, participants performed poorly on the WFT, perceived their performance as poor, and their moods were negatively affected by their performance. In addition it appears that the moods of LSE participants were more strongly affected by the failure induction.

Table 2

<u>Failure Induction Indices as a Function of Self-Esteem and Type of Failure</u>

Failure Type	Expectations/ Perceptions		Initial Performance		NA	
	Baseline	Post-F	Expected	Actual	Baseline	Post-F
Single						
LSE						
<u>M</u>	4.88	1.65	3.10	1.10	1.49	2.09
<u>SD</u>	1.64	.98	1.11	.81	.40	.87
HSE						
<u>M</u>	5.45	1.68	3.60	1.15	1.32	1.83
<u>SD</u>	1.18	1.02	.87	.98	.29	.59
Repeated						
LSE						
<u>M</u>	5.00	1.63	3.40	1.05	1.57	2.21
<u>SD</u>	1.49	.84	.96	1.06	.48	.66
HSE						
<u>M</u>	5.40	1.80	3.53	.98	1.43	1.73
<u>SD</u>	1.17	.82	.68	.83	.33	.55

<u>Note</u>. Cell means based on <u>n</u>=40. Post-F=Post-Feedback Perceptions.

Tests of Perceptions Regarding the RAT

The two primary aims with respect to the RAT were that it would be viewed as a relatively different ability (and therefore representing a different goal) than the WFT and that it would yield performance success relative to the WFT. Both of these aims were achieved. First, on a scale with anchors labeled 1 'totally different' and 9 'totally similar', and with a midpoint 5 labeled 'somewhat similar', the mean rating was 4.05, indicating that while participants did not view the RAT and WFT as measuring two entirely different abilities, they did view them as measuring relatively different abilities. Second, both perceptions of performance and actual performance were higher on the RAT than the WFT, (RAT Perceptions $\underline{M}$=5.25, $\underline{SD}$=1.56; WFT Perceptions $\underline{M}$=2.21, $\underline{SD}$=1.34), $\underline{t}$(76)=13.36, $\underline{p}$<.001, (RAT performance $\underline{M}$=3.05, $\underline{SD}$=.82; WFT Performance $\underline{M}$=1.13, $\underline{SD}$=.66), $\underline{t}$(76)=17.83, $\underline{p}$<.001.[5]

State-Oriented Responses to Failure

To assess the prevalence of ruminative thought following failure, the 2-minute thought listings provided by participants were coded for the presence of state-oriented thinking. This code consisted of counting the number of words a participant used in his or her thought listing that referred to a past, present, or future negative state (e.g., frustrated, anxious, dumb). Previous research has used similar methods to code for state-orientation (e.g., Brunstein & Olbrich, 1985; Kammer, 1984). To assess the reliability of this code, two raters unaware of participants self-esteem status and condition coded a subset of 25 cases.

Agreement was achieved in 84% of cases. One rater coded the remaining cases. Not surprisingly, this measure was correlated with post-feedback negative affect, $\underline{r}(160)=.29$, $\underline{p}<.001$.

It was expected that LSE participants would exhibit more state-oriented rumination after failure than HSE participants. Thus, their thought listings should contain more mentions of negative states than those of HSE participants. This was the case. A Self-Esteem X Type of Failure ANOVA yielded the expected main effect of Self-Esteem, $\underline{F}(1, 156)=6.08$, $\underline{p}<.05$. LSE participants included more references to negative states in their thought listings ($\underline{M}=1.16$, $\underline{SD}=1.21$) than HSE participants ($\underline{M}=.74$, $\underline{SD}=.94$). No other effects were significant.

The observed self-esteem difference in state-orientation was not simply an artifact of the self-esteem differences in initial expectations and initial negative affect that existed prior to the collection of the state-orientation measure. Two Self-Esteem X Type of Failure analyses of covariance (ANCOVA), using initial expectations and initial NA as the covariates respectively, did not yield significant effects of the covariate, $\underline{p}$'s >.25, and the Self-Esteem main effect remained significant, $\underline{p}$'s<.05.

Performance after Failure

Previous research had indicated that self-esteem differences in subsequent performance often emerge after the receipt of failure feedback (e.g., Brockner, 1979). While no self-esteem differences were expected in the present study given the extreme difficulty of the WFT, tests for these differences were

conducted. A t-test between HSE and LSE participants on their performance on

the second WFT--their performance after they received one instance of failure

feedback--yielded no differences (HSE M=1.21, SD=.92; LSE M=1.16, SD=.86),

t<1. To determine if performance differences emerged as a function of repeated

failure, a Self-Esteem X Type of Failure ANOVA on subjects' performance on the

additional WFT they were asked to complete was conducted. For Single Failure

participants this was their second WFT, for Repeated Failure participants it was

their fourth WFT. The analysis revealed no significant effects, all F's < 1. Thus,

participants who experienced a single or repeated failure, whether they were

high or low in self-esteem, were performing at equally poor levels upon entering

the persistence phase of the experiment (see Table 3).

Table 3

<u>WFT Performance on the Additional WFT as a Function of Self-Esteem and</u>

<u>Type of Failure</u>

		Type of Failure	
Self-Esteem		Single	Repeated
LSE			
	<u>M</u>	.95	.93
	<u>SD</u>	.64	.53
HSE			
	<u>M</u>	.98	.90
	<u>SD</u>	.83	.67

<u>Note.</u> Cell means based on <u>n</u>=40.

<u>Behavioral Persistence on the WFT</u>

Behavioral persistence on the WFT was first examined using the full model. A Self-Esteem X Type of Failure X Switch Option ANOVA revealed a main effect of Switch Option indicating that participants persisted far less in the Switch condition ($\underline{M}$=5.74, $\underline{SD}$=5.79) than in the No Switch condition ($\underline{M}$=14.56, $\underline{SD}$=6.97), $\underline{F}$(1, 152)=78.49, $\underline{p}$<.001. A main effect of Type of Failure also emerged, indicating that participants persisted less in the Repeated Failure condition ($\underline{M}$=9.15, $\underline{SD}$=7.72) than in the Single Failure condition ($\underline{M}$=11.14,

$\underline{SD}$=7.73), $\underline{F}$(1, 152)=4.02, $\underline{p}$<.05. This main effect was qualified by a Self-Esteem X Type of Failure interaction, $\underline{F}$(1, 152)=4.20, $\underline{p}$<.05. Follow-up tests of the simple-effects of Type of Failure within levels of Self-Esteem indicated that while LSE participants did not differ in their persistence across the Single Failure ($\underline{M}$=10.25, $\underline{SD}$=8.45) and Repeated Failure condition ($\underline{M}$=10.30, $\underline{SD}$=8.00), $\underline{F}$<1, HSE participants persisted less in the Repeated Failure condition ($\underline{M}$=8.00, $\underline{SD}$=7.35) than in the Single Failure condition ($\underline{M}$=12.04, $\underline{SD}$=6.94), $\underline{F}$(1, 157)=5.52, $\underline{p}$<.05. No other effects were significant, all $\underline{p}$'s > .10 (see Table 4).

Table 4

WFT Persistence (mins) as a function of Self-Esteem, Type of Failure, and

Switch Option

	Type of Failure	
Switch Option	Single	Repeated
No Switch		
LSE		
M	15.80	14.40
SD	7.04	7.43
HSE		
M	15.21	12.81
SD	6.63	6.92
Switch		
LSE		
M	4.70	6.20
SD	5.65	6.39
HSE		
M	8.86	3.19
SD	5.80	3.77

Note. Cell means based on n=20.

Although the 3-factor interaction was not significant, it was predicted that when participants could not pursue goal alternatives HSE participants would persist more on the WFT than LSE participants, whether it was after a single failure or repeated failure. To examine this prediction, a Self-Esteem X Type of Feedback ANOVA on the WFT persistence of participants in the No-Switch condition was conducted. The analysis did not yield the predicted effect, $F<1$. HSE and LSE participants were equally persistent when they could not switch to an alternative. No other effects were significant, p's >.20.

It was also predicted that, when goal alternatives were available to participants, persistence would depend on the degree of failure experienced-- after a single failure HSE participants would persist more than LSE participants, after repeated failure HSE participants would persist less than LSE participants, and less than HSE participants who had experienced a single failure. LSE participants were expected not to differ in their persistence after a single or repeated failure. This translated into a predicted interaction between Self-Esteem and Type of Failure in the Switch condition. This interaction was significant, $F(1, 76)=8.51$, $p=.005$ (see Figure 1). Follow-up simple-effects tests of Self-Esteem within levels of Type of Failure indicated that HSE participants persisted more than LSE participants in the Single-Failure condition, $F(1, 77) = 5.59$, $p<.05$, and tended to persist less than LSE participants in the Repeated-Failure condition, although this latter effect was only marginally significant, $F(1, 77) = 2.93$, $p=.09$. Furthermore, follow-up simple-effects tests of Type of Failure

within levels of Self-Esteem indicated that, as predicted, HSE participants persisted more in the Single-Failure condition than in the Repeated-Failure condition, $\underline{F}(1, 77) = 10.76$, $\underline{p}<.005$, and that LSE subjects did not differ in persistence across these conditions, $\underline{F}<1$.
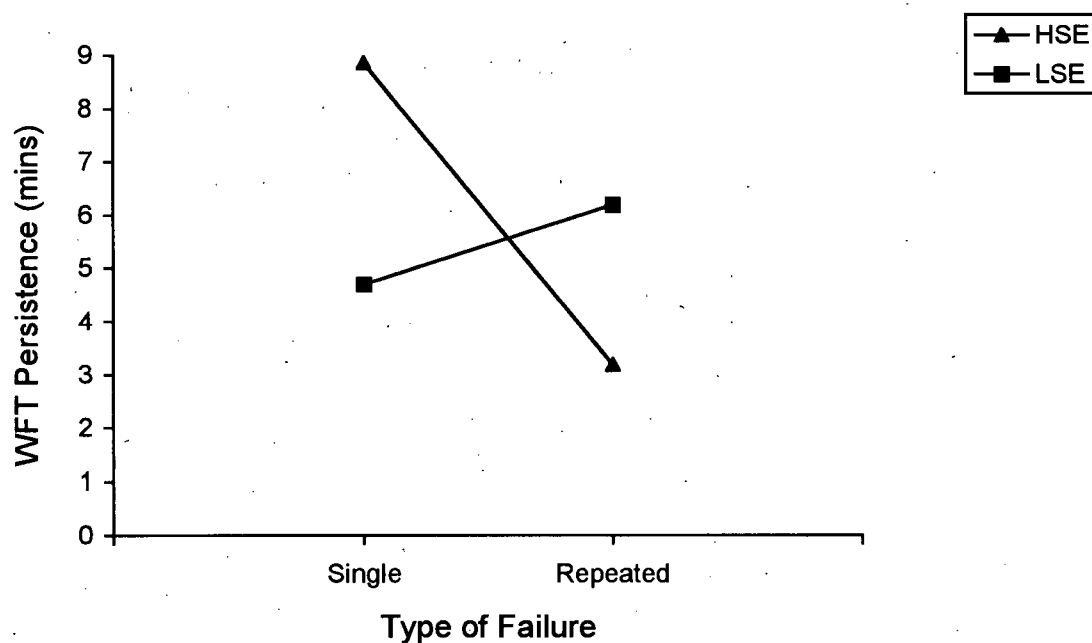
Figure 1. WFT persistence as a function of Type of Failure and Self-Esteem (Switch condition).

Importantly, these results were not confounded by differential levels of performance on the WFT. Participants' average performance[6] on the WFTs during the persistence period was submitted to a Self-Esteem X Type of Failure ANOVA and yielded no significant effects, all F's <1.

As noted earlier, HSE participants had higher initial performance expectations, felt less negative affect both initially and after they received the failure feedback, and exhibited lower levels of state-oriented thinking than LSE participants. These differences may have accounted for the self-esteem differences in behavioral persistence that emerged in the Switch condition. To assess this possibility, four Self-Esteem X Type of Failure ANCOVAs were conducted, with initial expectations, initial NA, post-feedback NA, and state orientation serving as the covariate, respectively. In no instance was the covariate significant, all p's >.25, and in all cases the Self-Esteem X Type of Failure interaction remained significant, all p's < .01. Thus, the self-esteem differences in behavioral persistence observed in the Switch condition were not attributable to differential levels of ruminative persistence, negative affect, or initial expectations.

To further examine participants' motivations under conditions in which they could switch to an alternative goal, a second analytic strategy was employed. A dichotomous variable was constructed representing whether or not participants decided to try any additional WFTs beyond the additional WFT they

were asked to complete. Participants who did not try any additional WFTs were obviously those participants most motivated to avoid the WFT.

Of those participants who had the option to switch to an alternative, the percentage of LSE and HSE participants who chose not to work on any additional WFTs in the Single Failure condition was compared. While 40% of LSE participants chose not to work on any additional WFTs, no HSE participants made this choice (see Figure 2). A Chi-square test indicated that this difference was significant, $\chi^2(1, \underline{N}=80) = 7.66, \underline{p}<.005$. This analysis provides additional evidence that HSE participants were more motivated to work on the WFT than LSE participants after a single failure. A different picture emerged in the Repeated Failure condition. While 20% of LSE participants chose not to work on any additional WFTs, 45% of HSE participants made this choice (see Figure 2). In this case, the Chi-square test reached marginal levels of significance, $\chi^2(1, \underline{N}=80) = 2.85, \underline{p}=.09$. Thus, when they experienced repeated failure and could switch to an alternative task, HSE participants tended to abandon the WFT more than LSE participants.
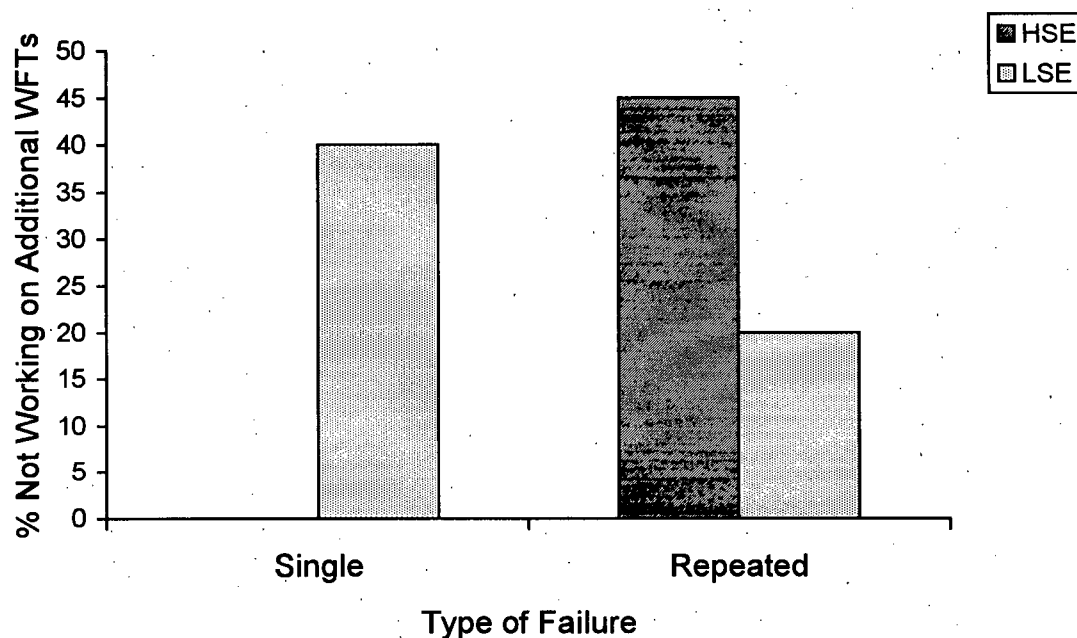
Note. The percentage for HSE participants in the Single Failure condition is 0.

Figure 2. Percent of subjects not working on additional WFTs as a function of Self-Esteem and Type of Failure (Switch condition).

Degree of Goal Disidentification

It was predicted that HSE participants would disidentify more with the WFT than LSE participants, particularly after experiencing repeated failure. Degree of goal disidentification was calculated by subtracting the initial WFT ability importance rating from the final WFT ability importance rating. Thus, more negative change scores reflected greater disidentification. A Self-Esteem X Type of Failure X Switch Option ANOVA on these scores yielded the expected

main effect of Self-Esteem, indicating that HSE participants exhibited greater

disidentification ($\underline{M}$= -.90, $\underline{SD}$=.98) than LSE participants ($\underline{M}$= -.53, $\underline{SD}$=1.26),

$\underline{F}$(1, 152)=4.33, $\underline{p}$<.05. This main effect was qualified by the anticipated Self-

Esteem X Type of Failure interaction, $\underline{F}$ (1, 151)[7]=6.76, $\underline{p}$=.01 (see Figure 3).

Follow-up simple effects tests of Self-Esteem at levels of Type of Failure

indicated that HSE participants did not disidentify more than LSE participants in

the Single-Failure condition, (HSE $\underline{M}$= -.75, $\underline{SD}$=.93; LSE $\underline{M}$= -.85, $\underline{SD}$=1.31),

$\underline{F}$<1, but did disidentify more than LSE participants in the Repeated-Failure

condition, (HSE $\underline{M}$= -1.05, $\underline{SD}$=1.01; LSE $\underline{M}$= -.23, $\underline{SD}$=1.14), $\underline{F}$(1, 157)=8.04,

$\underline{p}$=.005.
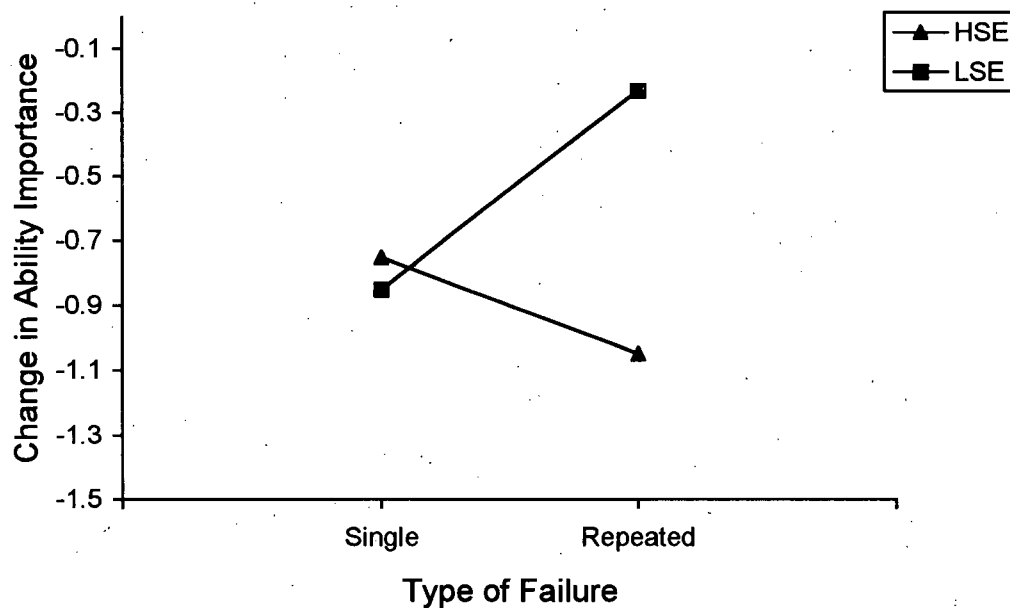
Figure 3. Change in ability importance as a function of Self-Esteem and Type of

Failure.

An examination of Figure 3, however, reveals that the form of the interaction did not exactly conform to predictions. It was expected that HSE participants would disidentify more after repeated than single failure, whereas LSE participants would not differ in their level of disidentification across these conditions. In contrast, the degree of importance reduction did not differ for HSE participants across the Single and Repeated Failure conditions, $p>.20$, whereas LSE participants reduced the importance of the ability less in the Repeated Failure condition than in the Single Failure condition, $F(1, 156)=6.20$, $p=.01$. Thus, LSE participants displayed an interesting, potentially self-destructive trend--they maintained the highest degree of continued identification under conditions in which they received the most negative feedback.

Based on Steele's (1988) work it was anticipated that working on the alternative goal might act as an affirmation of the self, thereby reducing the motive to disidentify with the failed goal. Thus, participants were expected to disidentify less in the Switch condition than in the No-Switch condition. A main effect of Switch Option did not emerge, however, $F<1$. No other effects were significant (see Table 5).

Table 5

Degree of Disidentification as a function of Self-Esteem, Type of Failure, and

Switch Option

		Type of Failure	
Switch Option		Single	Repeated
No Switch			
LSE			
	M	-.90	-.20
	SD	1.29	1.28
HSE			
	M	-.85	-1.20
	SD	.99	1.01
Switch			
LSE			
	M	-.79	-.25
	SD	1.36	1.02
HSE			
	M	-.65	-.90
	SD	.88	1.02

Note. Cell means based on n=19-20. More negative means reflect greater disidentification.

Although the 3-factor interaction was not significant it was expected that self-esteem differences in disidentification would diminish when participants could pursue an alternative goal. Thus, it was expected that the interaction between Self-Esteem and Type of Failure would be more reliable in the No-Switch condition than in the Switch condition. This was the case. The Self-Esteem X Type of Failure was significant in the No-Switch condition, $F(1, 76)=4.16$, $p<.05$, but did not reach significance in the Switch Condition, $F(1, 75)=2.64$, $p=.11$.

To assess whether the interaction between Self-Esteem and Type of Failure on disidentification could be accounted for by the self-esteem differences observed with respect to initial performance expectations, initial NA, post-feedback NA, and state-orientation, four Self-Esteem X Type of Failure ANCOVAs were conducted with each of the above measures serving as the covariate, respectively. In only one instance was the covariate significant. Higher initial expectations were associated with higher levels of disidentification, $F(1, 150)=6.49$, $p=.01$. However, in all instances the Self-Esteem X Type of Failure interaction remained significant, p's $\leq .01$. Thus, the self-esteem differences in goal disidentification were not attributable to differential levels of ruminative persistence, negative affect, or initial expectations.

Behavioral Persistence and Self-Regulation Indices

A secondary aim of the present study was to examine the extent to which the behavioral persistence of HSE and LSE participants was associated with two

key indices of self-regulation--perceived efficacy and progress. Most, if not all, theories of self-regulation posit that at least one, or both, of these variables play a role in regulating persistence toward goals (e.g., Bandura, 1989; Carver & Scheier, 1990). Thus, examining self-esteem differences with respect to these variables allows for the assessment of potential self-esteem differences in the ability to effectively regulate persistence in the face of failure.

To determine if there were differences, the post-persistence measures of goal efficacy (i.e., the belief that the initial WFT goal could have eventually been reached) and goal progress were correlated with the behavioral persistence measure within each self-esteem group. While goal efficacy was highly correlated with persistence for HSE participants, $r(80)=.47$, $p<.001$, this was not the case for LSE participants, $r(80)= -.10$, n.s. These correlations, after an r to z transformation using Fisher's (1921) procedure, were significantly different, $z=3.25$, $p<.001$. The correlations for goal progress paralleled those for goal efficacy. Goal progress was correlated with persistence for HSE participants, $r(80)=.33$, $p<.005$, but not for LSE participants, $r(80)=.09$, n.s. However in this case the difference between these correlations was not significant, $z=1.58$, $p>.10$. Thus, for HSE participants, lower efficacy and lower perceptions of progress were associated with reduced behavioral persistence on the WFT--just as self-regulation theories would predict. The persistence of LSE participants, however, appeared to be "unregulated"--neither efficacy nor progress perceptions was related to persistence for LSE participants.

Several other aspects of the relation between the self-regulation indices and the persistence of HSE participants are worth noting. First, perceived goal progress did not predict persistence independent of goal efficacy. When these variables were entered simultaneously in a regression predicting persistence, only goal efficacy accounted for a significant portion of the variance, (β=.40) t=3.54, p<.001. Second, as would be expected, the strength of the correlation tended to vary as a function of the degree of failure. HSE participants' persistence was less strongly linked to goal efficacy the more intense the threat was (i.e., after repeated failure). In the Repeated Failure condition, the correlation was .30; in the Single Failure condition it was .56. Although these correlations were not significantly different (z=1.42, p>.15), they do suggest that increasing the threat to HSE participants may have interfered with their ability to engage in effective self-regulation (cf., Baumeister, Heatherton, & Tice, 1993).

Accessibility Measure of Ruminative Persistence

It was predicted that LSE participants would engage in more ruminative persistence than HSE participants. While evidence for this was found via the elevated levels of state-orientation exhibited by LSE participants after receiving failure feedback, it was also expected that LSE participants would continue to engage in more ruminative persistence than their HSE counterparts even after they had finished working on the WFT and did not expect to work on it in the future. This form of ruminative persistence was assessed indirectly via the time it took participants to recognize WFT-related words. This measure was based

on the assumption that accessibility is the mechanism that gives rise to rumination (Martin, et al., 1993). The more accessible a concept, the greater the likelihood that the concept will be the object of ruminative persistence. Therefore, it was predicted that LSE participants would recognize WFT-related words faster than HSE participants, but would not differ from HSE participants in their recognition of words unrelated to the WFT.

To evaluate these predictions, the recognition times for each of the four WFT-related words and the four neutral words were first divided by the number of letters in that word (e.g., the recognition time for 'LOGICAL' was divided by 7, the recognition time for 'HARDWARE' was divided by 8.)[8] The results from these operations were then averaged to create an average WFT word accessibility score and a neutral word accessibility score, respectively. These scores were submitted to a Self-Esteem X Accessibility (WFT, Neutral) mixed ANOVA with the second factor serving as the within-subjects factor. The analysis revealed a main effect of the within-subjects factor indicating that the WFT-related words were more accessible ($\underline{M}$=3.42, $\underline{SD}$=.40) than the neutral words ($\underline{M}$=3.63, $\underline{SD}$=.44), $\underline{F}$(1, 158)=30.01, $\underline{p}$<.001. However, the predicted self-esteem difference did not emerge, $\underline{F}$<1.

Discussion

Although the primary aim of Study 1 was to assess self-esteem differences in persistence, it also illustrated the impact of several situational variables. First, whether or not participants had an opportunity to switch to an alternative had a powerful effect on persistence behavior. Participants persisted over 2.5 times more when they could not switch to an alternative than when they could switch. Second, participants persisted less after experiencing repeated failure than after a single failure. To my knowledge, this is the first study of persistence to manipulate the presence or absence of alternatives and degree of failure. These main effects, therefore, point to the importance of considering these variables in future research on behavioral persistence.

Taken as a whole, the results yielded partial support for the self-esteem hypotheses. Although the expected self-esteem differences were not obtained in the No-Switch condition, behavioral persistence in the Switch condition conformed closely with expectations. When they could pursue an alternative goal, HSE participants persisted more than LSE participants following a single instance of failure. HSE participants reasserted whereas LSE participants relinquished pursuit. Quite a different picture emerged under conditions of repeated failure. HSE participants were quick to abandon the WFT. They tended to persist less than LSE participants and almost half of the HSE

participants made no additional attempts at the WFT when they were given the option to pursue an alternative goal.

The results are consistent with the motivations theorized to underlie the persistence behavior of HSE and LSE individuals. It had been argued that their motivation to achieve success outcomes would cause HSE individuals' persistence to be strongly tied to the degree of failure they experienced, with repeated goal failure motivating them to seek success via an alternative. This was clearly demonstrated in the present study. HSE participants switched to the alternative more readily after repeated failure than after a single failure. It had also been argued that their motive to avoid failure would dissuade LSE individuals from pursuing an alternative goal in the face of repeated failure. While LSE participants did not avoid the alternative in an absolute sense (all but two LSE participants eventually switched to the alternative) the fact that they were no quicker to switch to the alternative after repeated failure than after single failure indicates some degree of avoidance motivation. If anything the evidence suggests that LSE subjects were more motivated to persist at the WFT after repeatedly failing at it in that there was a tendency for more LSE participants to choose to work on additional WFTs after repeated failure (80%) than after a single failure (60%).

Contrary to predictions, HSE participants did not behaviorally persist more than LSE participants when there was no alternative goal to pursue. Whether they had experienced a single or repeated failure, HSE and LSE

participants persisted equally on the WFT. Other studies have also failed to replicate the oft-cited finding that HSE individuals persist more after failure than LSE individuals (Shrauger & Sorman, 1977). Studies using similar methods to those used in the present No-Switch condition (Di Paula, 1993; McFarlin, 1985) also failed to obtain this finding[9], and there may be more, given that null results are unlikely to be published (Rosenthal, 1979).

While null results must always be interpreted cautiously, there are a couple of reasons why they may be meaningful in this instance. First, as noted above, this is not the first nonreplication of the self-esteem effect on behavioral persistence. Second, the lack of an effect here is not likely due to insufficient statistical power, in that the present experiment yielded the expected differences in other conditions (e.g., the Switch condition). Furthermore, certain conditions in this experiment should have, if anything, maximized any potential self-esteem effects. Previous studies have found the self-esteem effect after the delivery of a single instance of failure feedback (e.g., Shrauger & Sorman, Study 1). It seems reasonable to assume the effect should have been just as strong, if not stronger, after repeated failure.

It may be that reduced persistence in the face of failure is not an inevitable concomitant of low self-esteem. Indeed, from the perspective of the present study, it is hard to imagine how LSE individuals' could have previously been characterized as motivationally vulnerable in the face of failure. Despite having lower performance expectations and despite having been more

negatively affected by the failure feedback than HSE participants, LSE participants worked on the WFT as much as HSE participants when there was no alternative to pursue. Recall also that these were rather miserable failures-- on average participants were getting 1 out of 6 correct--and that the WFTs they attempted were not getting any easier as time wore on.

One plausible explanation for the inconsistent findings is that the persistence motivation of LSE individuals is highly variable--that it can decrease or increase based on rather subtle cues. Shrauger and Sorman (1977, Study 2) eliminated the self-esteem difference found in their initial study by leading LSE participants to believe they were improving on a task even though they had failed the task overall. Their manipulation was rather subtle--the failure task was devised so that participants performed better on the later portion of the task than the earlier portion (they were not explicitly told they were improving.) That such subtle manipulations can influence the persistence motivation of LSE participants makes the inconsistent findings more understandable. Therefore, it may be that even slight variations in procedures across studies unwittingly influence the persistence of LSE individuals in different ways. A systematic investigation of this possibility is obviously needed.

HSE and LSE participants did not differ in their degree of behavioral persistence in the No-Switch condition, but they did differ in another important respect. After repeated failure, HSE participants disidentified with the WFT ability more than LSE participants. This effect, when examined in light of the

behavioral persistence results, highlights the importance of examining both behavioral and cognitive aspects of persistence motivation. In terms of behavior, HSE and LSE participants appeared equally motivated to persist on the WFT. However, to say they were demonstrating the same type of motivation may gloss over important differences in their psychological states at the time of their behavioral persistence. Even though they continued to behaviorally persist after repeated failure, HSE participants became less psychologically committed to the goal they were pursuing than LSE participants. Such differences in commitment imply different kinds of persistence. For example, the persistence of HSE participants might be characterized as "detached"--they kept persisting despite becoming less committed to the task. This may be a common response of HSE individuals when they continue to fail.

In contrast, LSE participants did not appear to detach themselves from the task after repeated failure. In fact, they identified more with the task after repeated failure than after a single failure. This may, paradoxically, reflect their motive to avoid failure. Repeated failure may make it even more important for LSE individuals to remedy their deficiencies in order to avoid future failure. The effect is also consistent with the notion that LSE is associated with continued goal identification despite repeated failure (e.g., Pyszczynski & Greenberg, 1987).

As expected, the self-esteem differences in disidentification were diminished when participants could successfully pursue an alternative goal.

However, the source of this diminishment is unclear. There was no evidence that the alternative served as an affirmation and reduced motivation to disidentify with the failed goal. Participants were no less likely to disidentify with the failed goal when they could pursue an alternative than when they could not.

The prediction that the alternative would reduce motivation to disidentify was derived from Steele's (1988) self-affirmation theory and was counter to what conventional wisdom would predict. Conventional wisdom suggests that alternatives should be particularly likely to instigate disidentification with goal pursuits that yield failure. We have all probably witnessed someone (if not ourselves) fail at something. We have also witnessed how, after the failure, that "something" becomes a lot less important, that the failure actually frees up time to pursue more important things in life like being with family, etc. From this perspective, it would be expected that contexts allowing for the pursuit of alternative goals would yield even higher levels of disidentification than contexts that do not. The present null result on persistence as a function of the Switch-Option manipulation suggests that this is not necessarily the case.

An important finding to emerge in this study concerned the relation between self-esteem and self-regulation. The behavioral persistence of HSE participants was associated with variables previously identified to regulate persistence--efficacy and progress. For example, the lower their post-persistence perceptions of efficacy and progress the less HSE participants persisted. This suggests that their persistence was in part regulated by

perceptions of efficacy and progress. Furthermore, although this regulation decreased when the conditions became increasingly threatening (e.g., after repeated failure), it was still maintained.

This was not the case, however, for LSE participants. Their degree of behavioral persistence was unrelated to their degree of efficacy or perceptions of progress. This finding lends support to the contention that LSE individuals (and other individuals who have low self-evaluations) are prone to maladaptive patterns of persistence (e.g., Pyszczynski & Greenberg, 1987). For example, they may continue to persist at a goal even when they believe they will not reach that goal. This appears to have been the case for a substantial number of LSE participants in the present study.

The hypothesis regarding self-esteem differences in ruminative persistence received partial support in the present study. After they received failure feedback, LSE participants engaged in more state-oriented rumination than HSE participants. This finding is particularly impressive given the nature of the thought listing measure used to assess state orientation. In the thought listing participants were explicitly asked to indicate the thoughts that were most prominent in their mind as they were doing the task--they were in no way prompted to focus on their feeling states. Yet that is what LSE participants tended to focus on. Their thoughts were more infused with negative self-evaluative feelings (e.g., "I feel dumb") as well as with more diffuse negative feelings (e.g., "I feel anxious") than were those of HSE participants.

The accessibility measure of ruminative persistence, however, did not yield the predicted self-esteem differences. In retrospect, this measure may have been too subtle to pick up these differences. The WFT-related words in the asterisk task were presented to participants 25 min before the task, in the introduction to the WFT. Any potential differential accessibility effects may have diminished during this time. Previous studies which used the accessibility measure employed shorter delays (about 5 min) between the introduction of the task and the accessibility measure (e.g., Martin, et al., 1993). It is also possible that the WFT-related words used in the asterisk task (e.g., practical) were not the best words to use to detect self-esteem differences in ruminative persistence. Utilizing words such as those which appeared in participants' thought listings (e.g., anxious, dumb) may constitute a more powerful test of the differential accessibility effect.

Study 2

Study 1 provided evidence that the relation between self-esteem and behavioral persistence can be better understood by considering the structure of the goal environment in which persistence is initiated (a single vs. multiple goal environment) and the performance history that precedes the persistence (a single vs. repeated failure). It also demonstrated that HSE individuals disidentify more with repeatedly failed goals than LSE individuals, but that this effect tends

to dissipate when a goal alternative can be pursued. Study 1 also provided some evidence that LSE individuals engage in more ruminative persistence than HSE individuals. To determine if the effects regarding behavioral persistence and disidentification would replicate in a different setting, and to further evaluate the hypothesis regarding ruminative persistence, a longitudinal field study was conducted.

The field study assessed goal persistence and goal identification among university students over the course of an academic year. It complemented and extended Study 1 in several important ways. First, the goals that participants pursued in Study 1 were chosen by the experimenter, not the participants. While participants certainly viewed the tasks and abilities assessed in Study 1 as relatively important, it is necessary to establish whether the same processes would occur with respect to personally important goals. Second, Study 1 provided participants with manipulated and consistently negative feedback. In the field study, feedback was not controlled and was free to vary as a function of participants' naturally occurring successes and failures. Third, the context that I have argued is so critical to understanding persistence (i.e., the multiple goal context) is not fully represented in Study 1. Individuals are presented with one goal alternative and given the option to pursue it. Most of the time, however, individuals have a number of alternatives, and they must decide which one to pursue. In the field study goal pursuit was examined in a true multiple goal context.

Study 2 examined persistence in a multi-goal environment. Under such conditions, repeated failure should lead to reduced behavioral persistence on the part of HSE participants. Therefore, it was predicted that behavioral pursuit of specific goals would be more strongly calibrated with perceived satisfaction with goal progress for HSE participants than for LSE participants. Specifically, lower progress satisfaction regarding a goal (i.e., the greater the perception of goal failure) should be associated with reductions in behavioral pursuit of that goal more for HSE than LSE participants. It was also predicted that, for all participants, the degree of goal disidentification exhibited would be calibrated with goal progress satisfaction. The lower their goal progress satisfaction, the more they should disidentify with that goal. Because no self-esteem differences in disidentification emerged when participants had the option to switch goals in Study 1, no self-esteem differences in disidentification were expected in Study 2 as the context also allowed for the successful pursuit of goal alternatives. Finally, it was predicted that LSE participants would engage in more ruminative persistence regarding their goals than HSE participants, and that this would be the case even when LSE and HSE participants were experiencing relatively equal degrees of failure.

Method

Overview

Study 2 examined persistence and disidentification among university students high or low in trait self-esteem over the course of an academic year. The study consisted of two parts. Initially, participants pretested on self-esteem completed a goal assessment measuring the goals they wanted to attain during the academic year, how important they viewed the attainment of each of these goals (i.e., their degree of initial goal identification), as well as several measures of self-regulation and motives for goal pursuit. Five months later, degree of continued identification with initial goals, perceived failure, and behavioral and ruminative persistence were assessed.

Participants

Participants were 83 (30 Male, 53 Female) first-year students in introductory psychology classes scoring in the upper (HSE) or lower (LSE) third of a distribution ($\underline{N}$=242) of Rosenberg Self-Esteem Inventory scores (RSEI; Rosenberg, 1965) collected via a take-home questionnaire packet completed at least 3 weeks prior to participation. The mean for LSE participants was 29.69, the mean for HSE participants was 43.85. Their ages ranged from 17 to 22, with a mean age of 18. Sixty-nine percent of participants were born in Canada, 17% were born in Hong Kong, and the remaining 14% were born in one of 10 other countries. Participants received extra course credit in exchange for participating.

Procedure

Initial goal assessment. Participants participated individually in the study which was presented as a study examining how students adapt to the challenges and problems of university life. After giving informed consent and acknowledging that they would be available to take part in a second session 5 months after the initial session, participants completed a goal inventory (Dimensions of Self Inventory, Appendix B) eliciting the goals they wanted to attain over the course of the academic year. They listed five goals in each of two goal domains previously reported as being highly relevant to university students: academics and social life (Cantor & Langston, 1989). Instructions encouraged participants to list relatively concrete goals (e.g., "get an A in chemistry" rather than "get good grades"). It was important to elicit relatively concrete goals because participants subsequently rated the relative importance of these academic and social goals within the academic and social domain, respectively (see below). This relative importance task would make little sense if participants' goals within a domain were listed at very different levels of abstraction because some concrete goals (e.g., make friends with Kelly) would obviously be manifestations of some more abstract goals (e.g., socialize).

Participants appraised each goal on several dimensions. These dimensions assessed important variables related to self-regulation as well as the motivational bases for goal pursuit. The self-regulation dimensions included: a) difficulty of attainment, b) expectation of attainment in the next year (both

measured on scales anchored by 1 "not at all" and 9 "extremely"), and c) perceived distance from goal (on a scale anchored by 1 "extremely far away" and 9 "extremely close").

In order to assess the underlying motivations of goal pursuit, anticipated emotional and self-evaluative reactions to goal success and failure were assessed, as well as goal self-determination. On 9-point scales anchored by "not at all" and "extremely", participants rated the extent to which reaching each goal would make them feel happy, elated, and successful, and the extent to which not reaching the goal would make them feel sad, dejected, and unsuccessful. These items assessed emotional reactions linked to an underlying motivation to attain success outcomes (cf., Higgins, 1987). Participants also rated the extent to which reaching each goal would make them feel relieved, calm, and adequate, and the extent to which not reaching the goal would make them feel anxious, guilty, and inadequate, items which assess emotional reactions associated with the motivation to avoid failure.

Participants also indicated the degree to which their goals were self-determined (the result of autonomous choice) or determined by external forces (Ryan, Sheldon, Kasser, & Deci, 1996; Sheldon & Kasser, 1995). On 9-point scales anchored by "not at all because of this reason" and "completely because of this reason" participants rated the extent to which they were pursuing the goal for "external" reasons ("because somebody else wants you to or because you'll get something from somebody if you do"), for "introjected" reasons ("because

you would feel ashamed, guilty, or anxious if you didn't), for "identified" reasons ("because you believe its an important goal to have; you endorse it freely and wholeheartedly"), and for "intrinsic" reasons ("purely because of the fun and enjoyment that pursuit of this goal provides"). These reasons can be ordered along a self-determination continuum with the ordering of external, introjected, identified, intrinsic reflecting relatively low to relatively high levels of self-determination. [10]

In the second part of the initial assessment participants indicated the degree to which they identified with their academic and social goals. Degree of initial identification was assessed using a "pie" measure for both academic and social goals. The pie measure required participants to divide up a circle using the relevant goals as pieces of the pie, with each piece (or "slice") reflecting how important it was for the participant to attain that goal. Participants also divided up a third circle, placing the importance of achieving their academic and social goals in general among other goal domains--personal health, personal development, and leisure/recreational activities (see Appendix C). The angle of each slice was measured and served as the initial measure of goal identification.

The pie measure provides a continuous measure of identification with goals. Its advantages are in allowing participants to rate goals as equally important (which a ranking procedure would not) and prevents them from rating all goals as extremely important (as a rating scale procedure would allow).

<u>Reassessment of goals.</u> All participants were telephoned 5 months after the initial session and asked to come to the laboratory to complete the second phase of the study. Ninety-six percent of participants (80) returned to participate in the second session. Participants' first task was to complete the RSEI. The RSEI was administered at reassessment to determine whether participants retained their status as either LSE or HSE according to the initial lower and upper third cutoff points. Participants were then asked to recall the goals that they had listed at the initial session. After being reminded that they had listed 5 academic and 5 social goals, they were given 10 minutes to recall as many goals as they could.

Participants were then presented with the academic and social goals that they listed at the initial goal assessment and were asked to complete the three "pie" measures in the same manner as they did at the initial assessment (see Appendix D). They were instructed that, if a goal was no longer of any importance to them, they should not include it in their pie. The angle of each slice was measured and served as the final measure of goal identification. Goals not included in the final pie measures received a score of 0.

Participants then completed the Dimensions of Self Inventory-Part II, in which they evaluated each academic and social goal (as well as these domains) on dimensions tapping aspects of self-regulation, behavioral persistence, and ruminative persistence (see Appendix E). On a 9-point scale anchored by "not at all" and "completely" participants rated the extent to which they were satisfied

with their progress toward the goal. (When assessing satisfaction with a goal domain, the phrase "progress toward the goal" was replaced with "performance in the domain"). This item measured the extent participants felt they were attaining each of their goals.

In addition to measuring perceived progress via a rating scale, a ranking procedure was also used. In both the academic and social domains participants ranked the five goals in order of perceived progress. This measure was used to ensure that a measure with adequate variability existed with regard to goal progress. It was possible that the rating method would not yield sufficient variability, in that some participants might rate their progress as very satisfactory across all goals.

Participants also indicated the degree to which they had actively pursued (and were continuing to pursue) and had ruminated (and were continuing to ruminate) about their initial goals. On 9-point scales anchored by "not at all" and "extremely" participants rated the extent to which a) they had actively pursued the goal, b) they were pursuing the goal presently, c) they had experienced intrusive and unwanted thoughts (i.e., were preoccupied and ruminated) regarding the goal, and d) they were presently experiencing intrusive and unwanted thoughts (i.e., are preoccupied and ruminate) regarding the goal.

Participants were then asked, in dichotomous fashion, whether or not they achieved each of their goals. If they had not, they were asked, again in dichotomous format, whether or not they had abandoned the goal (i.e., it was no

longer important).[11] Finally, participants were asked to give consent for

obtaining their academic average from the Registrar for the 1995-96 academic

term. Eighty-six percent of participants (69) consented to this request.

Results

Initial Assessment

The results were mostly similar for academic and social goals. Therefore,

in order to increase the reliability of the calibration measure (a within-subject

correlation), analyses were collapsed across type of goal. In those instances

where results did differ by type of goal, results for academic and social goals are

reported separately.

Goal appraisal. The three variables that assessed different aspects of

goal efficacy (expectation of attainment, distance from goal, and difficulty of

attainment) were averaged to form a single measure of goal efficacy for each

goal ($\underline{M} \alpha$ = .83). A Goal Efficacy score was then calculated by averaging these

measures (α=.69). A between groups $\underline{t}$-test for self-esteem on this score

indicated that, as expected, HSE participants felt more efficacious about

attaining their goals than did LSE participants, $\underline{t}(78)$=3.07, $\underline{p}$<.005 (see Table 6).

Table 6

Self-Esteem Differences in Goal Efficacy, Anticipated Emotional Reactions to

Goal Attainment/Nonattainment, and Self-Determination

Self-Esteem		Efficacy	Anticipated Emotional Reaction			SelfD
			Attainment		Nonattainment	
			Happiness	Relief	Negative Feelings	
LSE						
	M	4.94	6.93	6.50	5.67	45.30
	SD	.98	.77	1.32	1.16	57.01
HSE						
	M	5.58	7.15	6.04	4.99	72.54
	SD	.86	.81	1.37	1.03	56.09

Note. Cell means based on n=42 for LSE, n=41 for HSE. SelfD=Goal Self-Determination.

Anticipated reactions to goal attainment/nonattainment. It was expected

that HSE and LSE participants would differ with respect to their anticipated

emotional and self-evaluative reactions to goal attainment and nonattainment.

Given their primary motive to achieve success, HSE participants should indicate

they would feel more happy, elated, and successful in response to goal

attainment than relieved, calm, or adequate; LSE participants, given their

primary motive to avoid failure, should exhibit the opposite pattern. After

nonattainment, HSE participants should anticipate feeling more sad, dejected,

and unsuccessful than anxious, guilty, and inadequate; LSE participants should

exhibit the opposite pattern.

To evaluate these predictions, the anticipated emotion and self-evaluation

ratings were first submitted to a principle components factor analysis with

varimax rotation, with the goal serving as the unit of analysis. Three factors

emerged with eigenvalues greater than 1. The first factor, labeled "Negative

Feelings," included sad, dejected, unsuccessful, anxious, guilty, and inadequate.

The second factor, labeled "Happiness," included happy and elated, and the

third factor, labeled "Relief," included relieved and calm. Two items, successful

and adequate, had substantial loadings on more than one factor (> .40) and,

therefore, were not considered further.

Measures of anticipated negative feelings, happiness, and relief were

calculated in the same manner as for goal efficacy. The six items comprising the

"Negative Feelings" factor were averaged for each goal ($\underline{M}$ α = .87) and then

were combined to create a Negative Feelings score for each participant (α=.78).

The two "Happiness" items were averaged for each goal ($\underline{M}$ α = .76) and were

combined to create a Happiness score (α = .69). The two "Relief" items were

averaged for each goal (M α = .79) and were combined to create a Relief score

(α = .86).

Because participants did not differentiate between different types of negative emotional reactions to goal failure, the predictions regarding self-esteem differences in these reactions could not be tested. Self-esteem differences in anticipated overall negative emotional reactions to goal nonattainment were examined, however. A t-test on Negative Feelings indicated that LSE participants anticipated feeling more negative affect after goal nonattainment than HSE participants, $t(78)=2.80$, $p<.01$ (see Table 6). Thus, not only do LSE individuals react more negatively to actual goal failure than HSE individuals (Shrauger & Rosenberg, 1970), they appear to anticipate more negative emotional reactions as well.

As expected, HSE participants anticipated feeling more happiness than relief as a result of goal attainment, $t(40) = 5.83$, $p<.001$. The results for LSE participants' anticipated reactions to goal attainment did not conform to expectations, however. In terms of their social goals, LSE participants also anticipated feeling more happiness ($M=6.86$, $SD=1.09$) than relief ($M=6.14$, $SD=1.56$), $t(41) = 4.11$, $p<.001$. In terms of their academic goals, LSE participants anticipated equal levels of happiness ($M=7.00$, $SD=.86$) and relief ($M=6.87$, $SD=1.30$) $t<1$. Between groups t-tests indicated that HSE and LSE participants did not significantly differ with respect to anticipated happiness, $t(81)=1.27$, $p>.15$, or relief, $t(81)=1.58$, $p > .10$ (see Table 6).

Goal self-determination. It was expected that their different motivational orientations would translate into different levels of goal self-determination among

HSE and LSE participants. LSE participants' motive to avoid failure should lead them to view their goal pursuit as a way to avoid the disapproval of others more than HSE participants. Thus, they should indicate their goals are less self-determined than HSE participants.

A goal self-determination score was calculated for each participant following the guidelines of Sheldon and Kasser (1995). First, the external and intrinsic ratings were doubled. Second, the sum of the 10 external and 10 introjected ratings was subtracted from the sum of the 10 identified and 10 intrinsic ratings (α = .79). As expected, LSE participants reported lower levels of goal self-determination than HSE participants, $t(79)=2.17$, $p<.05$ (see Table 6). However, this difference was primarily attributable to differences in self-determination with respect to social goals. LSE participants showed significantly lower levels of goal self-determination (M=41.74, SD=31.08) than HSE participants (M=58.76, SD=28.98) with respect to social goals, $t(81) = 2.58$, $p<.05$, but not with respect to academic goals (LSE M=3.48, SD=32.69; HSE M=13.78, SD=37.00), $t(79) = 1.33$, $p>.15$. In general, participants exhibited higher levels of self-determination for their social goals (M=50.40, SD=31.41) than their academic goals (M=8.69, SD=35.10), $t(80)=11.35$, $p<.001$.

Reassessment

Analyses examining self-esteem differences at reassessment excluded participants whose RSEI scores at reassessment deviated enough from their RSEI scores at initial assessment to place them in the opposite self-esteem

group at reassessment. Despite the fact that RSEI scores at initial assessment and reassessment were highly correlated (r=.78), of the 80 participants who returned to complete the reassessment, eight participants (five initially recruited as LSE, three as HSE) were excluded from the analyses involving self-esteem on this basis.[12]

Goal recall. Participants were asked to recall their goals when they returned to the lab five months later for the reassessment. Of interest was the overall level of goal recall in the sample. To assess this, participants' goal recall lists were compared to their initial goal listing and the matches between the lists were coded. Because the goals initially listed were so specific (e.g., get an 'A' in Chemistry) a certain amount of leeway was allowed in what was considered a match. If the content of the goal was basically recalled, it was counted as a match. For example, if "get an A in Chemistry" was recalled as "get a good grade in Chemistry" this was coded as a match. However if it was recalled as "pass Chemistry" it was not. Using this coding scheme two independent raters reached agreement on what constituted a match on 89% of a subset of 20 cases. The remaining cases were coded by one rater.

The mean overall level of goal recall was 5.5 (SD=1.79). Participants recalled an equal number of academic (M=2.69, SD=1.03) and social goals (M=2.81, SD=1.15). These levels of recall are impressive given the lengthy time between the initial listing and recall and the fact that the initial goal listing task elicited specific goals. Self-esteem differences in goal recall were not

anticipated as there was no reason to believe that one group would have a superior ability to remember their goals than the other. However, there was a marginal tendency for HSE participants to recall more of their goals than LSE participants (HSE $\underline{M}$=5.83, $\underline{SD}$=2.01; LSE=5.06, $\underline{SD}$=1.55), $\underline{t}$(70) = 1.84, $\underline{p}$=.07. Subsequent analyses indicated that this difference was attributable to differences in the recall of social goals. HSE participants recalled more social goals ($\underline{M}$=3.08, $\underline{SD}$=1.23) than LSE participants ($\underline{M}$=2.50, $\underline{SD}$=1.06), $\underline{t}$(70) = 2.16, $\underline{p}$<.05, but the groups did not differ with respect to their recall of academic goals (HSE $\underline{M}$=2.75, $\underline{SD}$=1.13; LSE $\underline{M}$=2.56, $\underline{SD}$=.97), $\underline{t}$<.1. This difference in social versus academic goal recall may reflect the greater levels of self-determination that HSE participants exhibited with respect to their social goals. Goals which are freely chosen by the self and which reflect the intrinsic needs of the self should be more easily recalled than goals which reflect more of what others want of the self.

Behavioral pursuit and ruminative persistence. Given that ratings of current and past active pursuit were highly correlated ($\underline{r}$ =.72 when the goal was used as the unit of analysis), they were averaged for each goal to form a measure of behavioral pursuit for each goal ($\underline{M}$ α = .82). A Behavioral Pursuit measure was calculated for each participant by averaging across these measures (α = .82). Similarly, given that ratings of current and past goal rumination were highly correlated ($\underline{r}$ =.85 when the goal was used as the unit of analysis), they were averaged for each goal to form a measure of ruminative

persistence for each goal (M α = .92). A Ruminative Persistence measure was computed for each participant by averaging across these measures (α = .79).

Given HSE participants' greater efficiency at implementing goal intentions, suggested by a positive correlation between self-esteem and action versus state-orientation, and their higher levels of conscientiousness, suggested by a positive correlation between self-esteem and conscientiousness (Campbell & Di Paula, 1996), it was expected that HSE participants would actively pursue their goals more than LSE participants. This was the case. A t-test on the Behavioral Pursuit measure indicated that HSE participants engaged in more behavioral pursuit than LSE participants, $\underline{t}(68)$ = 4.13, $\underline{p}$<.001 (see Table 7).

Table 7

Self-Esteem Differences in Behavioral Pursuit, Progress Satisfaction, and Ruminative Persistence

Self Esteem		Behavioral Pursuit	Progress Satisfaction	Ruminative Persistence
LSE				
	M	5.33	4.95	4.24
	SD	.99	1.20	1.30
HSE				
	M	6.29	6.20	3.03
	SD	.95	1.13	1.23

Note. Cell means based on $\underline{n}$=34-35 for LSE. $\underline{n}$=36 for HSE.

Given that HSE participants behaviorally pursued their goals more than LSE participants, they were also expected to indicate greater satisfaction with their goal progress. A Progress Satisfaction measure was calculated by averaging the progress satisfaction ratings across goals (α = .71). A comparison between self-esteem groups on this measure yielded the expected difference, $t(69)=4.52$, $p<.001$ (see Table 7).

Consistent with this difference, HSE participants reported achieving more of their goals (M=4.31; SD=1.91) than did LSE participants (M=3.31, SD=1.69), $t(70)=2.35$, $p<.05$. However, this tended to be true more with respect to social goals (HSE M=2.39, SD=1.10; LSE M=1.92, SD=.94), $t(70)=2.01$, $p<.05$, than academic goals (HSE M=1.92, SD=1.42; LSE M=1.39, SD=1.32), $t(70)=1.63$, $p.>10$.

It was predicted that LSE participants would engage in more ruminative persistence regarding their goals than HSE participants. A t-test on the Ruminative Persistence measure supported this prediction, $t(68) = 4.01$, $p<.001$ (see Table 7). These differential levels of ruminative persistence were not simply an artifact of the differential levels of behavioral pursuit exhibited, or the differential levels of progress satisfaction experienced by LSE and HSE participants. When Behavioral Pursuit and Progress Satisfaction were entered as covariates in the analysis, the self-esteem differences in ruminative persistence still obtained, $F(1, 65)=4.91$, $p<.05$. Thus, even when they exhibited relatively equal levels of behavioral pursuit, and felt similarly dissatisfied with

their progress (i.e., when they were experiencing relatively equal degrees of failure), LSE participants engaged in more ruminative persistence than HSE participants.

Mediators of the self-esteem-behavioral pursuit relation. An attempt was made to test whether several variables in the present study served as mediators of the relation between self-esteem and behavioral pursuit. Using the model outlined by Baron and Kenny (1986), potential mediators were variables that were correlated with self-esteem (the predictor) and that were also correlated with behavioral pursuit (the criterion). On this basis, three variables were identified as potential mediators: Goal Efficacy, Goal Self-Determination, and Ruminative Persistence (see Table 8). Given that the potential mediators were intercorrelated, they were entered simultaneously in a regression equation to determine which predicted unique variance in Behavioral Pursuit. Only Goal Efficacy, (β=.33) $\underline{t}$=2.77, $\underline{p}$<.01, and Goal Self-Determination (albeit marginally), (β=.22) $\underline{t}$=1.74, $\underline{p}$=.09, uniquely predicted Behavioral Pursuit.

Table 8

Intercorrelations of Potential Self-Esteem-Behavioral Pursuit Mediating

Variables.

Variable	Goal Efficacy	Self-D	Self-Esteem	Behavioral Pursuit
Self-D	.29**			
Self-Esteem	.52***	.34**		
Behavioral Pursuit	.45***	.43**	.42***	
Rum. Persistence	-.40***	-.56***	-.53***	-.40***

**$p<.05$, ***$p<.001$ Note. Correlations based on $\underline{n}$=68-70. Self-D=Self-Determination; Rum.=Ruminative.

To determine if these two variables mediated the relation between self-

esteem and behavioral pursuit, a hierarchical regression analysis was

conducted. Goal Efficacy and Goal Self-Determination were entered on the first

step, and Self-Esteem was entered the second step. Evidence for mediation

was demonstrated by the fact that whereas both Goal Efficacy (β=.35), $\underline{t}$=3.19,

$\underline{p}<.005$, and Goal Self-Determination (β=.32). $\underline{t}$=2.92, $\underline{p}<.005$, predicted

Behavioral Pursuit ($\underline{R}^2$=.30), $\underline{F}$(2, 63)=13.39, $\underline{p}<.001$, Self-Esteem did not

account for any additional variance ($\underline{R}^2$change=.02), $\underline{p}>.10$. Thus, self-esteem's

relation with behavioral pursuit was due to its association with goal efficacy and

goal self-determination: higher levels of self-esteem were associated with

higher levels of goal efficacy and goal-self-determination, which in turn were

associated with higher levels of behavioral pursuit. The mediational model is

illustrated in Figure 4.

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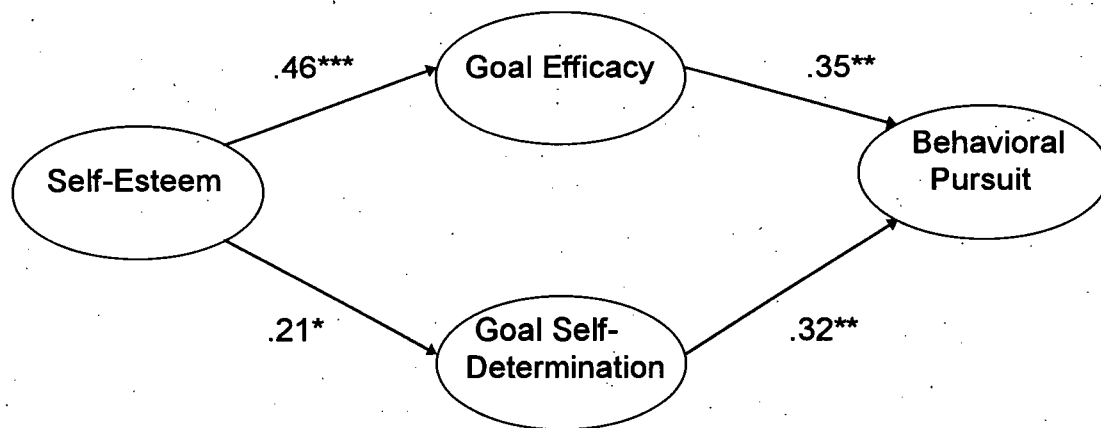
<u>Note</u>. All coefficients are beta-weights. *p<.10, **p<.05, ***p<.001.

<u>Figure 4</u>. Mediators of the relation between self-esteem and behavioral pursuit.

<u>Calibration between behavioral pursuit and progress satisfaction</u>. It was

predicted that behavioral pursuit and progress satisfaction would be better

calibrated for HSE participants than for LSE participants. That is, the

association between behavioral pursuit and progress satisfaction should be stronger for HSE participants than LSE participants. To examine this prediction, within-subject correlations were computed between behavioral pursuit and satisfaction with progress (rating method)[13] for those goals that remained unattained at the time of reassessment. The average number of goals on which the correlations were computed was 6.1. These correlations were then r to z transformed. A t-test on the z-transformed correlations revealed that the within-subject correlation between progress and pursuit was positive and significantly higher for HSE participants (M r =.60, SD=.33) than for LSE participants (M r=.40, SD=.33), t(59)=3.05, p<.005, indicating that satisfaction with progress was better calibrated with behavioral pursuit for HSE participants than for LSE participants. Furthermore, maintaining a stronger association between satisfaction with progress and behavioral pursuit was associated with positive goal pursuit outcomes. The degree of calibration between pursuit and progress was positively correlated with the level of progress participants reported attaining, r(69)=.27, p<.05.

Degree of disidentification. It was first examined whether there were any self-esteem differences in overall levels of disidentification. The measure of goal disidentification used was the number of goals participants abandoned (i.e., completely disidentified with without achieving) by the time of reassessment.[14] A t-test indicated that there were no significant differences between self-esteem

groups in overall levels of disidentification (HSE $\underline{M}$=.97, $\underline{SD}$=1.39; LSE $\underline{M}$=.75, $\underline{SD}$=1.05), $\underline{t}$(70)=1.56, $\underline{p}$>.10.

It was predicted that goal identification and satisfaction with goal progress would be calibrated for all participants. The more dissatisfied with their progress toward a goal, the more participants should disidentify with that goal. Self-esteem differences in the calibration between goal identification and satisfaction with goal progress were not expected given that the context allowed participants to successfully pursue goal alternatives.

To examine these predictions, goal identification change scores were computed for each goal by subtracting degree of identification at initial assessment from degree of identification at reassessment. More positive scores indicated greater identification, more negative scores indicated greater disidentification. A within-subject correlation was computed between this change score and satisfaction with progress for those goals that remained unattained at the time of reassessment. The average within-subject correlation was .15, indicating that greater dissatisfaction with progress was associated with greater decreases in importance. This correlation, however, was only marginally significantly different from zero, $\underline{t}$(67)=1.28, $\underline{p}$=.10. As expected, this correlation (after an r to z transformation) was roughly equivalent for HSE participants ($\underline{M}$ $\underline{r}$=.19, $\underline{SD}$=.48) and LSE participants, ($\underline{M}$ $\underline{r}$=.16, $\underline{SD}$=.45), $\underline{t}$<1.

It was expected that the calibration between identification and satisfaction would also exist at the level of goal domains--that the more participants were

dissatisfied with their performance in the goal domains (academic and social), the more they would reduce the importance of these domains. To assess this, two regressions analyses--one for the academic domain, one for the social domain, were conducted. In each, the importance of the domain at reassessment served as the criterion. The importance of the domain at initial assessment was entered on the first step, performance satisfaction in the domain was entered on the second step. Only in the social domain did performance satisfaction predict importance at reassessment over and above importance at initial assessment, $\underline{Fchange}(2, 77)=8.56$, $\underline{p}<.005$. Inspection of the beta weight ($\underline{\beta}=.29$) indicated that, as expected, greater importance reduction was associated with reduced progress satisfaction.[15]

Self-esteem and academic performance. Having access to participants' academic averages (GPAs) allowed for the examination of self-esteem differences in performance on a dimension that was very important to participants. Based on previous research (e.g., Hansford & Hattie, 1982) it was expected that LSE would be associated with poorer academic outcomes. A $\underline{t}$-test indicated that LSE participants had lower GPAs ($\underline{M}=70.16\%$, $\underline{SD}=6.26$) than HSE participants ($\underline{M}=74.62\%$, $\underline{SD}=8.14$), $\underline{t}(61)$[16] $=2.43$, $\underline{p}<.05$. While a causal relation cannot be inferred, the order in which these measures were obtained (self-esteem was assessed approximately 6 months before final GPAs were calculated) suggests that initial levels of self-esteem may have affected

subsequent academic performance, with higher self-esteem leading to better academic performance.

An attempt was made to construct a mediational model illustrating the processes through which self-esteem was associated with academic performance. It was expected that self-esteem differences in GPA would be mediated by the self-esteem differences in behavioral pursuit of academic goals. The mediational analysis reported earlier suggested that self-esteem differences in behavioral pursuit of academic goals would be mediated by self-esteem differences in academic goal efficacy and academic goal self-determination. (The earlier analysis however was based on all goals, not just academic goals). The mediational link between self-esteem and academic goal pursuit was examined again following the guidelines of Baron & Kenny (1986). Three variables were identified as potential mediators. As shown in Table 9, Academic Goal Self-Determination (calculated in the same manner as before but using only the ratings for academic goals, $\alpha= .81$), Academic Goal Efficacy (calculated by averaging the goal efficacy measures across academic goals, $\alpha=.73$), and Academic Goal Rumination (calculated by averaging the ratings of current and past rumination across the academic goals $\alpha=.87$), were correlated with Self-Esteem and with Academic Goal Pursuit (calculated by averaging the ratings of current and past active pursuit across the academic goals, $\alpha=.80$).

Table 9

Intercorrelations of Potential Self-Esteem-GPA Mediating Variables

Variable	Acd. Ruminative Persistence	Acd. Goal Pursuit	Acd. Goal Self-D	Acd. Goal Efficacy	GPA
Acd. Goal Pursuit	-.33**				
Acd. Goal Self-D	-.31**	.31**			
Acd. Goal Efficacy	-.33**	.33**	.10		
GPA	-.22*	.43***	.27**	.14	
Self-Esteem	-.50***	.33**	.22*	.39**	.29**

*$p<.10$, **$p<.05$, ***$p<.001$. Note. Correlations based on $n=58$-63.
Acd.=Academic; Self-D=Self-Determination.

To determine which of the potential mediators predicted unique variance in Academic Goal Pursuit, they were entered simultaneously in a regression predicting Academic Goal Pursuit. Only Academic Goal Efficacy, ($\beta=.26$), $t=2.05$, $p<.05$, and Academic Goal Self-Determination (albeit marginally), ($\beta=.22$), $t=1.74$, $p=.09$, uniquely predicted Academic Goal Pursuit. Therefore, Academic Goal Efficacy and Academic Goal Self-Determination were entered in

the first step of a hierarchical regression followed by the entry of Self-Esteem on the second step. Evidence for mediation was demonstrated by the fact that both Academic Goal Efficacy (β=.30), t=2.46, p<.05, and Academic Goal Self-Determination (β=.28), t=2.28, p<.05, predicted Academic Goal Pursuit (R^2=.18), F(2, 55)=6.22, p<.005, but Self-Esteem did not account for any additional variance (R^2change=.03), p>.15.

To ascertain the mediational effect of Academic Goal Pursuit, a hierarchical regression analysis was conducted, in which Academic Goal Pursuit was entered in the first step to predict GPA, followed by Academic Goal Efficacy and Academic Goal Self-Determination in the second step, and Self-Esteem in the third step. The mediational role of Academic Goal Pursuit was demonstrated by the fact that it predicted GPA, (R^2=.16), F(1, 55) =10.73, p<.005, and steps two and three explained no additional variance in GPA, Fchanges < 1. Thus, higher self-esteem was related to better academic performance because higher self-esteem was associated with greater academic goal efficacy and greater academic goal self-determination which, in turn, were associated with higher levels of academic goal pursuit. The mediational model is illustrated in Figure 5.
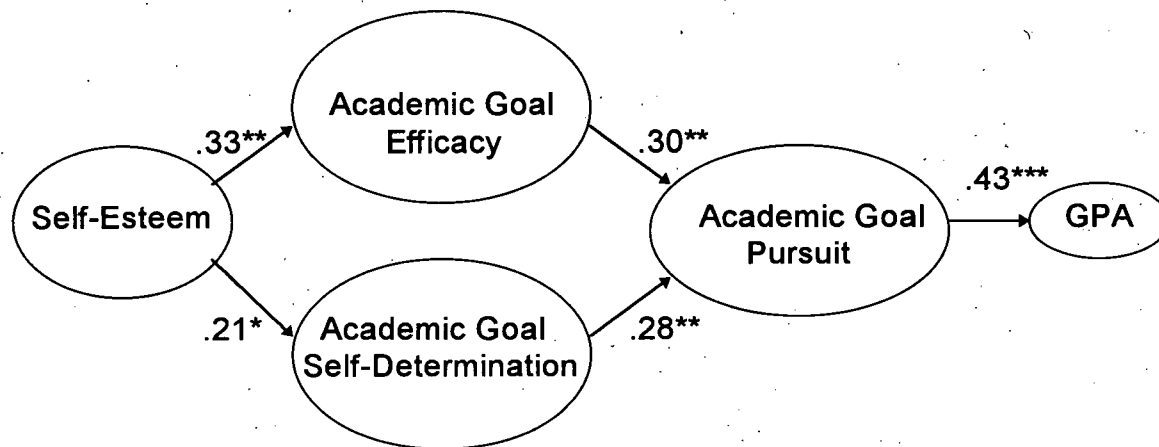
Note. All coefficients are beta-weights. *p<.10, **p<.05, ***p<.001.

Figure 5. Mediators of the relation between self-esteem and GPA

<center>Discussion</center>

Study 2 was designed to evaluate self-esteem differences in persistence in a very different setting and using a very different methodology than was used in Study 1. In Study 1, participants worked on experimenter-provided tasks in a tightly controlled laboratory environment; in Study 2, participants worked on self-chosen goals in the natural ecology. Study 1 examined persistence and disidentification in a single experimental session; Study 2 was longitudinal, allowing persistence and changes in identification to unfold over a more extended time course. Despite these differences, Study 2 provided convergent support for the hypotheses. It conceptually replicated several of the key findings of Study 1 as well as provided support for hypotheses that received only partial support in Study 1.

As in Study 1, HSE participants reduced behavioral persistence more than LSE participants as the conditions under which they were persisting became more threatening to the self. The more they became dissatisfied with their goal progress, the less they persisted. Contrary to conventional wisdom, when the "going got tough" the tough didn't get going--they got out, and pursued goals for which perceptions of progress were more favorable. This appeared to be an effective strategy. The degree of calibration between pursuit and progress was positively correlated with overall satisfaction with goal progress. The less

participants persisted under conditions when they were dissatisfied with their progress, the more satisfaction they derived from their efforts in general.

Study 2 also illustrated several mediators of the relation between self-esteem and behavioral pursuit. Both goal efficacy and goal self-determination played mediational roles, suggesting that it is not only appraisals of efficacy that can affect goal pursuit (a well established finding, e.g., Bandura, 1982) but the underlying motivations for that pursuit (cf., Ryan, Sheldon, Kasser, & Deci, 1996). Participants whose goal motivation derived more from external sources (e.g., an anticipated reward, a parent) pursued their goals less than participants whose goal motivation derived more from internal sources (e.g., intrinsic enjoyment). This makes sense given that motivation which is contingent on an external source (a source which may not always be present to provide a directive influence) would be more difficult to consistently translate into action than motivation which is not contingent on such a source.

That goal self-determination mediated the relation between self-esteem and behavioral pursuit is consistent with recent work by Campbell and her associates (Campbell, 1990; Campbell, Trapnell, Heine, Katz, Lavallee, & Lehman, 1996) showing that the self-concepts of LSE individuals are characterized by less clarity (i.e., they are less stable, less internally consistent, and less confidently defined) than the self-concepts of HSE individuals. They further argued that individuals lacking in self-concept clarity should be more dependent on, and susceptible to, the social environment. Therefore,

possessing self-concept clarity would appear to be a prerequisite for selecting goals which are indeed a reflection of the self and its intrinsic needs. The present correlation between self-esteem and goal self-determination is consistent with this position. Thus, lower self-concept clarity may underlie LSE individuals' deficiency in sustaining goal-directed behavior.

The results regarding goal disidentification were consistent with predictions, although not as strong as expected. There was a marginal tendency for progress satisfaction to be calibrated with changes in goal identification. Participants tended to disidentify more with those goals for which they were experiencing the least amount of success. While this tendency was only marginal, it does fit well with the results of Study 1, which also indicated that there was a general tendency for participants to disidentify with the goal that they were failing to attain.

This tendency was also observed at the level of goal domains in the present study. In the social domain, the more participants were dissatisfied with their performance, the more they disidentified with the domain. This effect was not obtained within the academic domain, however. The inconsistency of the results across these domains may, in part, reflect the relatively different reasons participants took up pursuit of their academic and social goals.

Participants were pursuing their academic goals for less self-determined reasons than their social goals. More than their social goals, they believed their academic goal pursuit would get them something, or that it was something they

ought to do. Even under extremely unfavorable circumstances it may be difficult to reduce the importance of goals when the reasons for their pursuit originate from sources external to the self. The external source plays a part in controlling goal importance. Therefore, decisions regarding disidentification may become less calibrated with self-regulatory mechanisms (e.g., progress) and more calibrated with contingencies that emanate from these external sources.

The results of Study 2 supported the prediction regarding ruminative persistence. LSE participants engaged in more ruminative persistence than HSE participants, and they did so even at comparable levels of goal pursuit and goal progress. This finding demonstrates the importance of considering both the behavioral and cognitive aspects of persistence. Even when HSE and LSE participants engaged in the same levels of behavioral persistence, LSE participants engaged in more ruminative persistence than HSE participants. Examining only persistent behavior in such an instance would preclude the detection of this important difference in persistence occurring at the cognitive level.

The self-esteem difference in ruminative persistence also suggests that, even though they engaged in less behavioral pursuit than HSE participants, it would be inaccurate to infer that LSE participants "gave up" on their goals more than HSE participants. LSE participants were still engaged, but this engagement took place more at the cognitive level than the behavioral. This continued engagement is further supported by the finding that LSE participants did not

abandon (i.e., completely disidentify with) significantly more goals than HSE participants, despite the fact that they had experienced lower levels of goal progress than HSE participants.

It should be made clear, however, that while continued rumination and identification imply that LSE participants had not disengaged from their goals, this does not necessarily imply that they willfully and intentionally remained engaged. In fact, they may have wanted to disengage. We would expect that experiencing continual intrusive and unwanted thoughts about a goal would motivate an escape from the source of these painful thoughts. However, a hesitancy in disengaging is exactly what we would expect from the state-oriented LSE individual who cannot easily enact alternative goal intentions.

Study 2 provided a model outlining the processes that may mediate the relation between self-esteem and academic performance. Both perceptions of academic goal efficacy and academic goal self-determination were important in explaining why self-esteem was positively associated with academic goal pursuit. That academic self-determination was a mediator of academic goal pursuit is consistent with a recent study showing that academic self-determination mediated the relation between perceived academic competence of high school students and their dropout behavior--the higher dropout rate of students with low perceived academic competence was accounted for by their lower levels of academic self-determination (Vallerand, Fortier, & Guay, 1997). Thus, an explanation for the lower levels of academic achievement among LSE

individuals would appear to lie not only in a consideration of their beliefs regarding the likelihood that they will attain their academic goals, but also in a consideration of their reasons for pursuing these goals.

General Discussion

Self-Esteem and Persistence

If the present studies had been limited to examining self-esteem differences in persistence in single-goal environments after a single failure, the results would have been added to the corpus of studies summarily dismissed as "failures to replicate." Self-esteem differences only emerged when goal alternatives were introduced. Furthermore, the nature of these differences depended on the degree of failure experienced. Therefore, these studies demonstrate that the relation between self-esteem and behavioral persistence can be better understood by examining the nature of the goal environment in which persistence is initiated and the severity of the conditions to which it is a response.

The self-esteem effects in the above studies were obtained under conditions that closely match the phenomenal experience of individuals as they persist in everyday life. Participants persisted without knowing whether their efforts would bring them success or not. In contrast, several previous studies have provided participants with information that some of the tasks that they will

work on do not have solutions (e.g., Janoff-Bulman & Brickman, 1982; McFarlin, 1985). Under these conditions, HSE participants have been found to persist less than LSE participants (presumably because they are more likely to use this information to interpret extreme task difficulty as task insolubility.)

While this latter effect is interesting, it is likely to be of limited practical value. It is the rare case (if ever) that individuals are provided with this kind of information in the natural ecology. Students arriving at university are not told that some degree programs are impossible to complete; army recruits are not informed that some military ranks are unreachable. In fact, persistence is such a ubiquitous phenomenon precisely because we are not provided with this kind of information. If we were, life would be a lot easier--and probably a lot less exciting.

The present studies call into question the conceptualization of HSE individuals that has attained a kind of folklore status in psychology: HSE individuals will tenaciously persist in the face of failure. This conceptualization needs to be revised. HSE individuals may persist tenaciously, but only under rather specific circumstances. When the threat is severe and there are alternatives (as there are most of the time), HSE individuals are more likely to reduce behavioral persistence.

The results of these studies indicate that this reduction is the result of both motivational and self-regulatory mechanisms. For example, in Study 1, under conditions where their success motive was maximally threatened (after

repeated failure) and where it could find expression elsewhere (when there was a goal alternative), HSE participants exhibited the lowest levels of persistence. Importantly, this reduction could not be explained as simply the result of an assessment of the probability of attaining some standard in relation to the failed goal. If this were the case, then the presence of the alternative would not have had the substantial impact on persistence behavior that it had.

While the persistence of HSE participants had motivational underpinnings, it also appeared to be regulated. In both studies the behavior of HSE participants was associated with indices of effective self-regulation. In Study 1, the persistence of HSE participants was linked to their level of goal efficacy--the less they thought they could have achieved their goal, the less they persisted. This was even true, although to a lesser extent, when they were faced with the highly threatening conditions of repeated failure. In Study 2, HSE participants demonstrated more effective self-regulation through their higher calibration of progress satisfaction and behavioral pursuit. The more they became dissatisfied with their progress the more they reduced behavioral pursuit.

These studies also suggest that the conceptualization of LSE individuals as motivationally deficient in the face of failure needs revision. Several results in the present studies suggest that, when it comes to discussing the persistence of LSE individuals, the presence or absence of motivation is less of an issue than the manner in which that motivation is regulated.

Under conditions where alternative goal pursuit was not possible, LSE participants behaviorally persisted just as much as HSE participants, even when that persistence was initiated in the face of repeated failure. However, this persistence was not tied to self-regulatory mechanisms. The degree to which LSE participants persisted bore no relation to the degree to which they expected to achieve their goal. Many LSE participants kept persisting under circumstances where they had low expectations of goal attainment (cf., Pyszczynski & Greenberg, 1987). This kind of unregulated persistence on the part of LSE participants suggests that, for LSE individuals, the problem may not be motivational deficiency, but a problem with effective regulation of motivation.

Further evidence of this problem comes from the findings concerning ruminative persistence. LSE participants engaged in more ruminative persistence than HSE participants. Because individuals do not ruminate about goals they do not want to attain, such persistence reflects an underlying motivational connection between the individual and the goal which is the focus of rumination. This motivation may not be as intentional as the motivation which gives rise to behavioral persistence but it probably has a directive influence, in that perseverating thoughts may disrupt the ability to engage in effective goal pursuit (cf., Kuhl, 1981). Recall that higher levels of ruminative persistence were associated with reduced goal pursuit and lower levels of academic achievement, although ruminative persistence did not contribute unique variance to these variables above and beyond goal efficacy and goal self-determination.

Failure to consider this type of persistence motivation may lead to the false conclusion that LSE participants have disengaged from their goals. Indeed, if only the behavioral efforts of participants were considered in Study 2, that conclusion may have been drawn. LSE participants did expend less effort than HSE participants in attempting to attain their goals. However, they had not disengaged. Their engagement, though, was evident only at the cognitive level, in the form of aversive goal ruminations.

Self-Esteem and Disidentification

Across both studies, participants tended to disidentify with goals when they were failing to reach them--an effect which has been obtained by other investigators (e.g., Tesser, 1988). However, the present results extend our understanding of disidentification processes by delineating the conditions in which self-esteem differences in disidentification are most likely to occur.

For example, in Study 1, HSE participants disidentified more than LSE participants, but only after experiencing repeated failure. Furthermore, this difference was most pronounced when there was no alternative goal to pursue. LSE participants disidentified less after experiencing repeated failure than after a single failure--an effect which, paradoxically, may reflect their motive to avoid failure.

Even when they exhibited greater disidentification, however, HSE participants did not reduce behavioral persistence relative to their LSE counterparts. They may have engaged in a kind of detached persistence. This

kind of persistence is likely to have a negative impact on goal performance, for it is reasonable to assume that when someone cares less about a goal, his or her goal performance will deteriorate. This deterioration was unlikely to have been detected in Study 1, given the extreme difficulty of the persistence task and the performance floor effect that it produced. Under less extreme performance conditions, however, this performance deterioration on the part of HSE may indeed be observed.

This deterioration is most likely to occur in the natural ecology within settings that only provide for the pursuit of a single goal. While I have emphasized the importance of goal alternatives in this research, a great deal of persistence does take place in settings that may not allow for the pursuit of alternatives. Two such settings are the workplace and the classroom. Employers often assign tasks to employees without giving them any alternatives. (In these cases, of course, the door is always the implicit alternative.) Similarly, teachers routinely order students to work on certain tasks to the exclusion of others. While repeated failure in such circumstances may not lead to the cessation of behavioral effort, it could very well lead to detached effort and poorer performance. This is certainly not the aim of employers or teachers who normally strive to create dedicated employees and active learners. They may unwittingly sabotage their efforts, however, by not providing goal alternatives.

Toward a Dynamic Model of Persistence Processes

Taken as a whole, the present results should lead us to appreciate the necessity of developing a model that focuses on the dynamic nature of persistence processes. By dynamic it is meant a model that focuses on the interrelationships among goals to explain persistence. The results made clear that we cannot understand goal processes without reference to the interrelationships among these processes. Persistence was not solely a function of processes directly associated with the object of persistence but also a function of processes that occurred with respect to other goals. Continued identification with a particular pursuit was not only a function of the failure experienced in relation to that pursuit, but also of perceptions of goal progress with respect to other pursuits. Ironically, this focus on the interrelatedness of goal processes brings us back to our theoretical roots (e.g., Lewin, 1935), but it is also consistent with an emerging trend in psychology toward an appreciation of the dynamic nature of goal processes (e.g., Tesser, Martin, & Cornell, 1996).

Concluding Comment

As of this writing another former boxing champion, Sugar Ray Leonard, stands poised to make a (fourth) comeback. What motivates Sugar Ray's refusal to call it quits? The enormous profits to be made? The anticipated glory? Perhaps. The present research suggests, however, that there may be a more mundane reason for these repeated returns to the ring--a lack of perceived alternatives. Boxers are notorious for the way in which they practice their craft,

training and fighting to the exclusion of almost everything else. There is no "off

season" in boxing, no opportunity to invest the self in other pursuits. This single-

mindedness has been expressed poignantly by another former champion,

Marvin Hagler (quoted in Oates, 1987):

"If they cut my bald head open, they will find one big boxing glove.

That's all I am. I live it."

Ironically, this singleness of purpose that brings the fighter such great rewards

may be the very thing that leads to his or her demise.

Notes

[1]The ACS has three subscales. The results reported here is based on the ACS measure which combines two of these subscales--one assesses tendencies toward ruminative preoccupation with goal failure, the other assesses tendencies to hesitate in implementing goals.

[2]Throughout this paper I also draw on evidence from the depression literature to support my model of self-esteem differences in persistence. I believe this is justifiable because, although self-esteem and depression are different constructs they overlap empirically (Watson & Tellegen, 1985) and the dimension that is of central interest (negativity/positivity of self-evaluation) is central to both constructs.

[3]Boxers, regrettably, do not appear to possess this knowledge.

[4]While the Positive Affect subscale would not be used in any analyses, it was included to maintain consistency of administration of the PANAS with previous studies.

[5]The degrees of freedom reflect the fact that all but 3 participants in the Switch condition chose to work on the RAT.

[6]Participants' average performance during the persistence period was the average of all the WFTs they attempted after they received the feedback. If participants only worked on the additional WFT (and therefore had no "average"

performance), their performance on the additional WFT was used in the analysis.

[7]One participant was not included in this analysis due to an extreme goal importance change score (i.e., greater than 3 standard deviations from the mean).

[8]This was done so that the recognition times for each of the four words would contribute equally to the overall average. Obviously recognition times for some of the words would be longer than other words because they contained more letters, not because they were more easily recognized.

[9]The McFarlin (1985) study was specifically designed to examine self-esteem differences in persistence following the receipt of effort-performance contingency information. However, it included a control condition comparable to the No-Switch/Single Failure condition in the present study. In this control condition, no differences between HSE and LSE subjects were obtained.

[10]Participants also rated each goal regarding how much it would help them in attaining four "possible futures"-- self-acceptance and personal growth, to make a societal contribution, to attain financial success, to attain fame and recognition. These items were included for exploratory purposes and will not be discussed further.

[11]If participants indicated they had not achieved the goal, they indicated (on the same scales used at the initial assessment) the distance they perceive they were from achieving the goal and the degree to which they expected to achieve

the goal. These participants, in open-ended format, were also asked whether (and, if so, in what manner) the goal had changed in any way from what it was.

[12]When these participants were included in the analyses involving self-esteem the results were essentially the same.

[13]Given that the progress rating method yielded adequate variability, the progress ratings (as opposed to the progress rankings) were used in all analyses involving goal progress satisfaction.

[14]The degree of change in identification for each goal could not be used to create an overall measure of disidentification because, given the nature of the pie measure, the differences in identification for each participant would always sum to 0.

[15]In a subsequent analysis, self-esteem (and the interaction between self-esteem and performance satisfaction) were included as predictors. Neither of these predictors was significant.

[16]Sadly, one participant had to be excluded from all analyses involving GPA due to an extreme (low) score on this variable (i.e., greater than 3 standard deviations from the mean).

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Appendix A

Sample WFT

Find the missing letters to form the correct English word.

1. F__ __W__RS

2. __U__S__ __ER

3. __S__O__I__ __E

4. I__ __AD__

5. __RI__Y__ __ __

6. __IR__LA__ __

Sample RAT

Find the fourth word that relates to each of the other three words.

1. Flower - Shine - Dried

2. Fountain - Ice - Fall

3. Desert - Ice - Spell

4. Iron - Down - Newspaper

5. Chocolate - Fortune - Tin

6. High - Teacher - Fish

Appendix B

Dimensions of Self Inventory

During different periods of their lives individuals typically have a number of goals that they want to attain. For example, university students often have a number of goals they would like to reach (e.g., get an A in my psychology class, join a club, etc.). We are interested in finding out about the goals that you wish to attain during this academic year. These could either be things that you would like to attain, things you feel obligated to attain (i.e., things you feel you should attain), or things you want to avoid (e.g., not to fail biology). We would like you to list them below.

Because people typically have goals that reflect different areas of their life, we would like you to list your goals in terms of the areas of your life they represent. To make this task easier, we have provided categories that reflect areas of life in which most university students wish to accomplish things: Academics (e.g., school performance) and Social Life (e.g., friendships, dating, intimacy). We would like you to list 5 goals in each category.
Please be as specific as possible when listing your goals.

Also, since people think and feel differently about each of their goals, we ask you to respond to some questions regarding various aspects of your goals after you have listed them.

Goals For This Year

(Please be as specific as possible)

Academic Goals

1. _____

2. _____

3. _____

4. _____

5. _____

Social Goals

1. _____

2. _____

3. _____

4. _____

5. _____

Evaluation of Academic Goals for This Year

<u>Academic Goal #___</u>:

_____

Please rate this goal on the following dimensions:

-Difficulty To Attain Goal

Extremely Difficult			Moderately Difficult				Not Difficult At All	
1	2	3	4	5	6	7	8	9

-Expectation to Attain Goal Within the Next Year

Do Not Expect At All To Attain			Somewhat Expect To Attain				Fully Expect To Attain	
1	2	3	4	5	6	7	8	9

-Perceived Distance From Goal Right Now

Extremely Far Away			About Half-way				Extremely Close	
1	2	3	4	5	6	7	8	9

To what extent will ATTAINING THIS GOAL make you feel:

	NOT AT ALL			SOMEWHAT				EXTREMELY	
Happy	1	2	3	4	5	6	7	8	9
Elated	1	2	3	4	5	6	7	8	9
Successful	1	2	3	4	5	6	7	8	9
Relieved	1	2	3	4	5	6	7	8	9
Calm	1	2	3	4	5	6	7	8	9
Adequate	1	2	3	4	5	6	7	8	9

To what extent will FAILING TO ATTAIN THIS GOAL make you feel:

Sad	1	2	3	4	5	6	7	8	9
Dejected	1	2	3	4	5	6	7	8	9
Unsuccessful	1	2	3	4	5	6	7	8	9
Anxious	1	2	3	4	5	6	7	8	9
Guilty	1	2	3	4	5	6	7	8	9
Inadequate	1	2	3	4	5	6	7	8	9

To what extent are you pursuing this goal:

-- because somebody else wants you to or because you'll get something from somebody if you do.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- because you would feel ashamed, guilty, or anxious if you didn't.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- because you believe it's an important goal to have-- you endorse it freely and wholeheartedly.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- purely because of the fun and enjoyment that pursuit of this goal provides.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

To what extent will this goal help you:

- attain self-acceptance and personal growth: being happy and having a very meaningful life.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- make a societal contribution: working to help make the world a better place.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- attain financial success: having a job that pays very well and having a lot of nice possessions.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- attain fame and recognition: being known and admired by many people.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

Evaluation of Social Goals for This Year

Social Goal #___ : _____

Please rate this goal on the following dimensions:

-Difficulty To Attain Goal

Extremely Difficult			Moderately Difficult				Not Difficult At All	
1	2	3	4	5	6	7	8	9

-Expectation to Attain Goal Within the Next Year

Do Not Expect At All To Attain			Somewhat Expect To Attain				Fully Expect To Attain	
1	2	3	4	5	6	7	8	9

-Perceived Distance From Goal Right Now

Extremely Far Away			About Half-way				Extremely Close	
1	2	3	4	5	6	7	8	9

To what extent will ATTAINING THIS GOAL make you feel:

	NOT AT ALL			SOMEWHAT				EXTREMELY	
Happy	1	2	3	4	5	6	7	8	9
Elated	1	2	3	4	5	6	7	8	9
Successful	1	2	3	4	5	6	7	8	9
Relieved	1	2	3	4	5	6	7	8	9
Calm	1	2	3	4	5	6	7	8	9
Adequate	1	2	3	4	5	6	7	8	9

To what extent will FAILING TO ATTAIN THIS GOAL make you feel:

Sad	1	2	3	4	5	6	7	8	9
Dejected	1	2	3	4	5	6	7	8	9
Unsuccessful	1	2	3	4	5	6	7	8	9
Anxious	1	2	3	4	5	6	7	8	9
Guilty	1	2	3	4	5	6	7	8	9
Inadequate	1	2	3	4	5	6	7	8	9

To what extent are you pursuing this goal:

-- because somebody else wants you to or because you'll get something from somebody if you do.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- because you would feel ashamed, guilty, or anxious if you didn't.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- because you believe it's an important goal to have-- you endorse it freely and wholeheartedly.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

-- purely because of the fun and enjoyment that pursuit of this goal provides.

Not at all because of this reason			Somewhat because of this reason				Completely because of this reason	
1	2	3	4	5	6	7	8	9

To what extent will this goal help you:

- attain self-acceptance and personal growth: being happy and having a very meaningful life.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- make a societal contribution: working to help make the world a better place.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- attain financial success: having a job that pays very well and having a lot of nice possessions.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

-- attain fame and recognition: being known and admired by many people.

No help at all				Some help			Very much help	
1	2	3	4	5	6	7	8	9

Appendix C

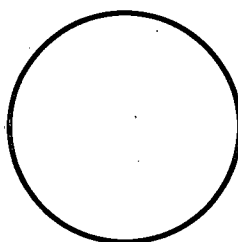## Goal Importance Measure--Initial Assessment

You have listed a number of goals that you wish to attain within the <u>Academic</u> and <u>Social</u> goal domains. Your academic domain includes all the specific academic goals you listed earlier; your social domain includes all the specific social goals you listed. While all these goals may be equally important for a person to achieve, some goals may be more important than others.
DIVIDE THE CIRCLES below so that the size of each section is a reflection of <u>how important that goal is for you to achieve</u>. (E.g., Larger pieces should indicate that a greater degree of importance is placed on that goal).
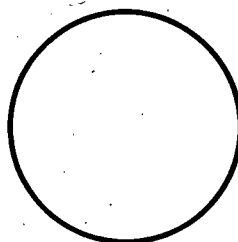One circle is for your academic goals, the other circle is for your social goals.

Place the numbers corresponding to the goals (from the goal listing you provided) inside the pieces of the circle.

ACADEMIC

SOCIAL

We would now like you to evaluate the general importance of your <u>Academic</u> and <u>Social</u> <u>domains</u> relative to other domains of life that you also may find important. Below we have listed a number of goal domains that have been generally important to university students. DIVIDE THE CIRCLE below so that the size of each section is a reflection of how important that <u>goal domain</u> is for you. (E.g., Larger pieces should indicate that a greater degree of importance is placed on that goal domain).

Place the letters corresponding to the goal domain inside the pieces of the circle. If there is a domain that you find important but is not on the list, please add it to the list and incorporate it in your circle. You are <u>not</u> required to use every domain in your circle; only those domains that you feel are important to you.
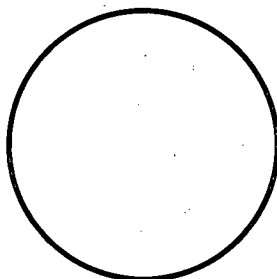
<u>A</u>= Academics

<u>S</u>= Social

<u>PH</u>= Physical Health (e.g., your diet, level of exercise, degree of physical fitness)

<u>PD</u>= Personal Development (e.g., your sense of morality, ethics, sprituality)

<u>LR</u>=Leisure/Recreational activities-- your competence at activities other than school or work (e.g., competence in music, sports, hobbies)

Appendix D

Goal Importance Measure--Reassessment

You have listed a number of goals within the <u>Academic</u> and <u>Social</u> goal domains. Your academic domain includes all the specific academic goals you listed earlier; your social domain includes all the specific social goals you listed. While all these goals may be equally important for a person to achieve, some goals may be more important than others.
DIVIDE THE CIRCLES below so that the size of each section is a reflection of <u>how important that goal continues to be for you, whether you have achieved the goal or have yet to achieve it.</u> (E.g., Larger pieces should indicate that a greater degree of importance is placed on that goal).
One circle is for your academic goals, the other circle is for your social goals.

Place the numbers corresponding to the goals (from the goal listing you provided) inside the pieces of the circle.
**If a goal is no longer important to you at all, do not include it in your circle.

ACADEMIC

SOCIAL

We would now like you to evaluate the general importance of your <u>Academic</u> <u>and</u> <u>Social</u> <u>domains</u> relative to other domains of life that you also may find important. Below we have listed a 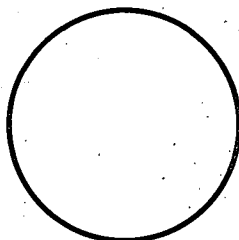number of goal domains that have been generally important to university students. DIVIDE THE CIRCLE below so that the size of each section is a reflection of how important that <u>goal domain</u> is for you. (E.g., Larger pieces should indicate that a greater degree of importance is placed on that goal domain).

Place the letters corresponding to the goal domain inside the pieces of the circle. If there is a domain that you find important but is not on the list, please add it to the list and incorporate it in your circle. You are <u>not</u> required to use every domain in your circle; only those domains that you feel are important to you.
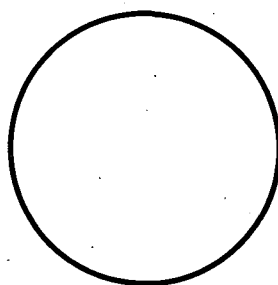
<u>A</u>= Academics

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<u>PH</u>= Physical Health (e.g., your diet, level of exercise, degree of physical fitness)

<u>PD</u>= Personal Development (e.g., your sense of morality, ethics, sprituality)

<u>LR</u>= Leisure/Recreational activities-- your competence at activities other than school or work (e.g., competence in music, sports, hobbies)

Appendix E

Dimensions of Self Inventory--Part II

We would now like you to evaluate your goals and the goal domains. Please respond to all questions regarding the goals, whether you have abandoned them or not.

ACADEMIC GOALS

Academic Goal # _____

Please rate this goal on the following dimensions:

-To what extent are you satisfied with your progress toward this goal?

Not at all				Somewhat				Completely
1	2	3	4	5	6	7	8	9

-To what extent have you actively pursued this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent are you pursuing this goal presently (i.e., at this point in your life)?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent have you experienced intrusive and unwanted thoughts (i.e., were preoccupied and ruminated) regarding this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent are you presently experiencing intrusive and unwanted thoughts (i.e., were preoccupied and ruminated) regarding this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

Have you achieved this goal? (Circle your answer)   YES   NO

If your answer is "YES" go to the next page and evaluate the next goal.
If your answer is "NO", answer the following question:

Have you abandoned the goal (i.e., it is no longer important to you)? YES   NO

If your answer is "YES" go to the next page and evaluate the next goal.
If your answer is "NO", **What is your perceived distance from the goal right now?**

Extremely Far Away				About Half-way				Extremely Close
1	2	3	4	5	6	7	8	9

Has this goal changed in any way from what it was initially?   YES   NO
If so, provide a brief description of <u>how</u> it has changed.

_____

_____

_____

_____

We would now like you to rank order your academic goals in terms of the progress you have made in attaining them. Rank your goals so that "A" is the goal at which you made the most progress and "E" is the goal at which you made the least progress.
**Note: You must use all the rankings (i.e., you cannot assign two goals the same ranking).

Identify the goal by its number on the goal list.

(Goal at which <u>most</u> progress has been made)   A   _____

B   _____

C   _____

D   _____

(Goal at which <u>least</u> progress has been made)   E   _____

<u>Evaluation of Academic Goal Domain</u>

Overall, how would you rate your performance in the academic domain?

Poor				Okay				Excellent
1	2	3	4	5	6	7	8	9

SOCIAL GOALS

Social Goal # _____

Please rate this goal on the following dimensions:

-To what extent are you satisfied with your progress toward this goal?

Not at all				Somewhat				Completely
1	2	3	4	5	6	7	8	9

-To what extent have you <u>actively pursued</u> this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent are you <u>pursuing</u> this goal presently (i.e., at this point in your life)?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent <u>have you experienced</u> intrusive and unwanted thoughts (i.e., were preoccupied and ruminated) regarding this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

- To what extent <u>are you presently experiencing</u> intrusive and unwanted thoughts (i.e., were preoccupied and ruminated) regarding this goal?

Not at all				Somewhat				Extremely
1	2	3	4	5	6	7	8	9

Have you achieved this goal? (Circle your answer)   YES   NO

If your answer is "YES" go to the next page and evaluate the next goal.
If your answer is "NO", answer the following question:

Have you abandoned the goal (i.e., it is no longer important to you)? YES   NO

If your answer is "YES" go to the next page and evaluate the next goal.
If your answer is "NO", **What is your perceived distance from the goal right now?**

Extremely Far Away				About Half-way				Extremely Close
1	2	3	4	5	6	7	8	9

Has this goal changed in any way from what it was initially?   YES   NO
If so, provide a brief description of <u>how</u> it has changed.

_____

_____

_____

_____

We would now like you to rank order your social goals in terms of the progress you have made in attaining them. Rank your goals so that "A" is the goal at which you made the most progress and "E" is the goal at which you made the least progress.
Note: You must use all the rankings (i.e., you cannot assign two goals the same ranking).

Identify the goal by its number on the goal list.

(Goal at which <u>most</u> progress has been made)   A   _____

                                                          B   _____

                                                          C   _____

                                                          D   _____

(Goal at which <u>least</u> progress has been made)   E   _____

<u>Evaluation of Social Goal Domain</u>

Overall, how would you rate your performance in the Social domain?

Poor				Okay				Excellent
1	2	3	4	5	6	7	8	9