

Effects of Self-Esteem, Evaluation Modality and  
Success Contingency on Goal Choice: An  
Integration of Goal Setting  
and Self-Handicapping Theories

by

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(ABSTRACT)

The current study examined the impact of self-presentation and self-esteem concerns on goal choice. Subjects who were high or low in self-esteem worked on a series of analogies and were presented with noncontingent or contingent success feedback. They were then told that their performance on an upcoming puzzle task would be either public or private. Subjects were then allowed to choose a goal level for the upcoming task. Subsequent performance on a standard test was measured. In general, males chose more difficult goals than did females and high esteem subjects chose more difficult goals than did low esteem subjects. Analyses indicated that when low esteem male subjects were given noncontingent success feedback and were led to believe that their choice of goal was public, they reported lower

performance expectations and showed a tendency to choose more difficult goals than did comparison groups. No performance differences emerged across any of the experimental conditions. The results are discussed within goal setting theory and in light of previous research on self-handicapping. The implications of this investigation for future research are also considered.

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Finally, I dedicate this thesis to my parents, Jerry and Helen Levy, who have given me so much more than I could ever give them in return. In psychological jargon, they are the prototype parents against whom all others should be judged. Without them this latest accomplishment, as well as all previous and future ones, would not have been possible and somehow, would not mean quite so much to me.

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## INTRODUCTION

Previous researchers have found that individuals who are committed to difficult, specific goals, perform better than those who are not (Locke, Shaw, Saari, & Latham, 1981; Landy, 1985; Ryan, 1970). This is one of the most robust findings in the organizational literature (Locke et al., 1981). Yet the various factors affecting the choice of goals has received little attention (Campbell, 1982). In particular, although numerous studies have addressed the relationship between goal level and performance, little research has addressed the more basic issue of what sorts of goals individuals will actually choose and the various factors affecting these choices. To increase the utility of goal setting for organizations, further research is needed to examine goal choice, more specifically, the choice of goal difficulty level.

Goal setting theorists typically view goal choice as affected by the individual's expectancy that he or she can attain a particular performance level and the desirability or valence of goal attainment at that level (Landy, 1985). However, one's choice of goals can be affected by numerous dispositional and situational factors as well. For instance, it may be the case that people choose difficult goals to impress their peers or supervisors. Or, perhaps

they choose difficult goals because they associate easy goals with taking "the easy way out" or, alternatively, because they are seeking a challenge.

In this study, goal choice was approached from a "self-handicapping" framework. Although self-handicapping strategies have received considerable attention in social psychology (cf. Arkin & Baumgardner, 1985b), they have yet to be incorporated into the domain of applied psychology. A self-handicapping strategy is defined as "any action or choice of performance setting that enhances the opportunity to externalize (or excuse) failure and to internalize (reasonably accept credit for) success" (Berglas & Jones, 1978, p. 406).

This idea of self-handicapping can be applied readily to understanding goal choice. Indeed, the selection of a goal that is perceived as unlikely to be reached or accomplished (perhaps even unattainable) may provide a ready-made excuse for poor task performance. Workers may opt for a very difficult goal, not because they are especially motivated to attain it, but rather in order to externalize expected poor performance. This is very different from the traditional conceptualization of goal choice where individuals supposedly choose a goal that is "challenging enough" to motivate effort, but not so difficult that it cannot be attained.



Baumgardner and Arkin (1986) suggest that self-handicapping provides a misattribution for a poor impression and may allow uncertain persons to relax in otherwise threatening situations. Evidence for this came from a study in which subjects listened to background white noise while participating in a ten minute interpersonal encounter. They were led to believe, in the presence of their partners, that the noise would or would not handicap their social performance. They found that subjects high in social anxiety who chose a handicap reported that their conversations were more enjoyable and that they were more relaxed than their high anxiety counterparts who had no handicaps. The most intriguing aspect of this experiment is that those anxious subjects who had handicaps actually performed better in the interpersonal encounter (i.e., their partners rated them more positively overall) than those who did not have handicaps. The authors concluded that handicapping seems to forestall disapproval by facilitating performance among less confident (i.e., socially anxious or low self-esteem) people (Arkin & Baumgardner, 1985a).

The implications of these findings for goal choice are two-fold. First, employees who have low self-esteem may choose a very difficult goal as a handicapping strategy. Second, the presence of the handicap may actually lessen anxiety and result in better performance than would have resulted without the handicap. Ironically, even though the

employees have chosen difficult goals for reasons other than the traditional ones (i.e., the motivation of effort) the same traditional goal setting effect may occur -- the facilitation of performance.

#### **Overview of the Thesis**

The hypotheses of the study reported here were based on two lines of research: (a) goal setting theory and (b) self-handicapping research related to individual differences. First, a general overview of goal setting theory will be presented. The second major area to be discussed is goal choice, particularly, the determinants of goal choice. The third section will integrate the self-handicapping and goal choice literatures. In section four, the specific hypotheses of the study will be delineated. Section five will present the methodology used in the study. Section six reports the results and the final section includes a discussion of the results within the framework of both goal setting and self-handicapping theories.

#### **Overview of Goal Setting: Predominant Themes**

A goal is what an individual is trying to attain -- it is the object or aim of an action (Locke et al., 1981) or a level of aspiration (Frank, 1935). A concept fundamental to the goal setting process is intentionality (Fishbein & Ajzen, 1975). A goal is an intention to act in a certain

way. A basic assumption of goal setting theory is that goals, like intentions and levels of aspiration, regulate human action (Locke, 1969).

### Goal Dimensions

Two major dimensions of goals are specificity, which is defined as the degree of quantitative precision with which the goal is specified, and the difficulty of attaining the goal or the degree of proficiency of performance sought (Locke et al., 1981). Task difficulty and goal difficulty are most often used interchangeably, although a minor distinction has been drawn (Locke et al., 1981). A task is an element of work that is to be accomplished; a goal is the aim or object of an action. A difficult task is one that is hard to do; a difficult goal is one that is hard to attain or accomplish. For instance, a baseball player's task is to execute the behaviors necessary in playing the game of baseball, but his or her goal may be to win the World Series. However, the completion of a task may quite often be a goal such as the goal/task of solving a puzzle. In many situations then, goals and tasks are identical, and the two terms may often be used interchangeably (Locke et al., 1981).

### **Impact of Goal Dimensions on Performance: A Brief Overview**

The two goal dimensions discussed above (i.e., difficulty and specificity) are suggested by Locke et al. (1981) as the major determinants of performance. The

most robust finding in the goal setting literature is that specific, difficult-to-attain goals result in performance increments (cf. Garland, 1983; Latham & Locke, 1975; Latham & Yukl, 1978; Mento, Cartledge & Locke, 1980). Specificity was defined earlier as the amount of precision with which the goal is defined and difficulty as the degree of proficiency of performance sought.

For instance, Garland (1983) employed a creativity task where subjects were asked to list in one minute as many objects as possible that could be described by that adjective. Subjects given a goal of 12 objects outperformed those given a goal of 5. Austin, Levy, Evensen, and Sgro (1985) replicated this study and also found that those given the hard, specific goals outperformed the subjects given an easy, specific goal. Locke et al. (1981) reported that 99 out of 110 field and laboratory studies conducted between 1969 and 1980 showed that specific, hard goals produced better performance than moderate, easy, "do-your-best," or no goals. This success rate of 90% is one of the most robust findings in organizational behavior.

Feedback, or telling an individual how he or she is progressing toward the goal, may also be a necessary component for the goal setting effect (i.e., performance increments result from the combination of hard/specific goals and feedback) (Erez, 1977). Numerous studies have been conducted in the past decade examining the impact of

feedback on performance (Matsui, Okada, & Inoshita, 1983). Several of these studies have shown that the combination of hard, specific goals and feedback lead to better performance than hard, specific goals without feedback (cf. At Emery Air Freight, 1973; Komaki, Barwick, & Scott, 1978; Strang, Lawrence, & Fowler, 1978).

#### Mechanisms for the Goal Setting Effect

Why do specific, difficult-to-attain goals facilitate performance? Locke et al. (1981) discussed four mediational variables through which goals impact on performance. First, goals direct attention. For instance, Terborg (1976) reported that specific goals led to a greater amount of time "on task" than did nonspecific goals or no goals. For most performance tasks, attention to salient aspects of the task will facilitate performance (Locke et al., 1981).

The second mediational variable is effort. Effort is mobilized along with direction according to the perceived requirements of the goal or task. More difficult goals lead to increased effort which in turn produces higher levels of performance than no goals or easy goals (Locke, 1968).

The third mediational variable, persistence, is conceptualized as a result of direction and effort (Locke et al., 1981). Persistence consists of the amount of time an individual spends attempting to reach a goal. This usually is not measured in goal setting studies because they tend to look at the end result of goal setting rather than how the

end result was attained.

The last mechanism of the goal setting process is strategy development. This involves developing strategies or plans for reaching one's goal. Locke et al. (1981) note that strategy development is a cognitive mechanism consisting largely of creative problem solving.

Based on Baumgardner and Arkin (1986), a fifth mediational variable is introduced in this paper, namely relaxation or anxiety reduction. Specifically, it is hypothesized that difficult goals may sometimes provide individuals with a handicap that provides an excuse for failure and reduces their anticipated anxiety. This anxiety reduction can facilitate performance because they feel like they have the handicap to rely on if they perform poorly.

#### Impact of Locus of Goal Choice on Performance

Previous researchers have addressed three major sources of setting goals: (a) an outside source such as a supervisor or experimenter who assigns goals to subjects, (b) setting goals through participation of both subjects and outside sources and (c) goal setting by the subjects themselves. The performance results are mixed with regards to participative versus assigned goal setting. Some studies suggest that joint participation in goal setting facilitates performance more than assigned goals do. However, this seems to be the case only because participation leads to higher or more difficult goals being set (Latham & Yukl,

1975). Latham and Saari (1979) held goal difficulty constant and found no difference between the assigned and participative conditions (cf. Ivancevich, 1976; Latham, Mitchell, & Dossett, 1978; Latham & Yukl, 1976).

Another important consideration is goal acceptance or commitment. In studies that have found participative goal setting superior to assigned goal setting regarding performance facilitation, subjects in the participative condition accepted their goals more readily than did those who were assigned goals (Latham & Yukl, 1975). Thus, participative goal setting may lead to better performance because individuals choose more difficult goals and accept them more readily when they perceive themselves involved in the choice. It is then, the acceptance of difficult goals that facilitate performance, not the act of participating in the goal setting process.

Aside from a few studies (e.g., Latham & Marshall, 1982; Terborg, 1976; Terborg & Miller, 1978), there has been little research on the effects of self-set goals on performance. Nonetheless, Latham and Marshall (1982) suggested that the issue in goal setting is not who sets the goal (i.e., goal setting locus), but rather what kind of goal is set.

Ironically, only a limited amount of research has examined the various factors influencing the individual's choice of goal level (Campbell, 1982). Yet, this may be a

more important area for consideration. Regardless of the impact of goal levels on performance, individuals may still choose levels that do not facilitate performance. In other words, even though we know that hard, specific goals facilitate performance more than easy, "do-your-best," or no goals do, this is of no practical use to the manager/supervisor unless he or she can be sure that his or her employees will actually choose the more facilitative goals.

There is, therefore, a need to consider goal choice as a dependent variable so that we can better understand how individuals choose goals. The questions that emerge from these considerations include: (a) under what conditions do individuals choose a goal that facilitates performance? (b) do individuals know what type of goal will increase performance and is this considered in their choice of goal? and (c) what personality variables affect the choice of a goal's level of difficulty? A discussion of factors which affect the choice of a goal level follows.

### **Determinants of Goal Choice**

Although goals facilitate performance, it does not necessarily follow that individuals will consistently choose difficult goals. The question that emerges is: what kinds of goals do individuals actually choose and what determines these choices?



### Traditional Expectancy-Value Interpretation

Previous researchers have addressed the determinants of goal choice from an expectancy-value approach (Campbell, 1982). Expectancy theory emphasizes that the motivation to perform a given act is a function of the strength of the expectancy that the act will be followed by a certain outcome (the goal or reward) and the value of that outcome to the individual (Lawler, 1968). According to this perspective, individuals are more likely to choose a given goal when they have high rather than low expectations of reaching it and when they believe the goal is somehow valuable to them (Mento, Cartledge, & Locke, 1980).

Expectations stem from perceptions about one's ability based on prior performances (Locke et al., 1981; Mento et al., 1980). Past performance has been found to consistently predict future goals (cf. Cummings, Schwab, & Rosen, 1971; Lopes, 1976). Lewin (1958) suggested that individuals become more confident and set higher goals after they experience success and become less confident and set lower goals after a failure.

The second major component of expectancy theory (Lawler, 1968) is value. According to Mento et al. (1980), when perceived value of attaining or trying for a goal is higher, the goal is more likely to be accepted and the individual more committed to attaining it than when the perceived value is low.

This expectancy-value notion is very similar to Atkinson's (1964) formulation of the achievement motive. Atkinson's theory can be summarized by the following equation:

$$Ts = Ms \times Ps \times Is$$

where (Ts) is the tendency for success, (Ms) is the motivation or drive for success, (Ps) is the probability of success, and (Is) is the incentive value of success. It follows that an individual will choose a goal that maximizes his or her tendency for success. Atkinson (1974) suggested that an individual's (Ms) is a relatively general and stable personality characteristic. He maintained that the (Ps) and the (Is) correspond to expectancy and value respectively. Finally, Atkinson proposed that a motive to avoid failure acts as an inhibitory influence on the tendency to achieve.

According to these perspectives, the expectancy of reaching a goal and the value assigned to it should predict goal choice and goal acceptance. Although there is considerable support for the expectancy-value framework of goal choice (Campbell, 1982), a variety of other factors may mediate this relationship. For instance, Atkinson (1983) has suggested that a personality characteristic such as motive for success may act as a mediator. Also, Locke et al. (1981) and Campbell (1982) have suggested that individual differences such as locus of control and

self-esteem may influence goal choice. Yet, there is very little research examining such relationships.

In addition to individual differences, persons may also be influenced by a desire for diagnosticity, self-presentational concerns, and concerns regarding the maintenance of self-esteem. These factors will be considered in the next few sections.

### The Importance of Diagnosticity

A basic assumption in social psychology (cf. Festinger, 1954; Heider, 1958) is that individuals generally seek accurate information about their abilities. Diagnosticity refers to the amount of information about an individual's ability/performance that a particular task provides. Extending this assumption, Trope and Brickman (1975) have reported that individuals who were permitted to choose tests of varying levels of diagnosticity (high diagnostic tests supply individuals with more information about their abilities than do low diagnostic tests), chose high-diagnostic tests over low-diagnostic ones (cf. Trope, 1979).

Recent research on self-evaluation of ability, however, qualifies this assumption (Sachs, 1982). In particular, individuals may sometimes wish to avoid diagnostic information. People choose to avoid diagnostic information under conditions of uncertainty; that is, when they are unsure about their ability to perform well (cf. Arkin &

Baumgardner, 1985b; Baumgardner & Arkin, 1986; Brickman & Bulman, 1977).

Brickman and Bulman (1977) have shown that individuals may avoid diagnostic information when the evaluation is likely to be negative and thus detrimental to self-esteem. In support of this, Sachs (1982) found that subjects who were uncertain about their ability to continue successful performance (i.e., they were given noncontingent success feedback) avoided diagnostic information to a greater degree than those who were more certain about their ability to maintain success (i.e., they were given contingent success feedback). Noncontingent success feedback consisted of positive feedback on an impossible task; that is, subjects were told that they did very well on a task which they perceived as incredibly difficult. Contingent success consisted of positive feedback on a possible task; that is, subjects were told that they did very well on a task which they perceived as moderately difficult and reasonably soluble. This finding qualifies earlier findings that individuals seek an accurate conception of their abilities.

Typically, the choice of extremely easy or extremely difficult goals provides the individual with little diagnostic information about his or her performance. For instance, if Larry Bird (or another very talented basketball player) sought to defeat a recreational player in a game of basketball, and achieved this (thereby fulfilling his

expectation and reaching his goal), he still would know very little about how well he performed (because of his choice of an easy goal). Similarly, if an unpolished tennis player chose defeating Chris Evert Lloyd as her goal and failed (thereby fulfilling her expectation, but not reaching her goal) she too would know very little about her actual performance. The individuals in both situations above chose to avoid diagnosticity by choosing goals that deviated from a moderate level.

Similarly, the individual who handicaps his- or herself by choosing an inordinately difficult goal would receive little information should he or she fail. Interestingly, this suggests that individuals who lack confidence and are motivated to avoid diagnostic information may choose inordinately difficult goals. This is directly counter to the previous notions regarding the influence of expectancy on goal choice (Mento et al., 1980). The traditional view (Lawler, 1968) suggests that people who expect to do well on an ensuing task choose more difficult goals and those who do not expect to do well choose easier goals. Yet the opposite may sometimes occur.

#### Level of Aspiration Research

Because intentions, goals, and levels of aspiration are interrelated, it seems reasonable to discuss level of aspiration research within this context. Level of aspiration may be defined as the level of future performance

toward which an individual strives, knowing his or her past performance on a similar task. Frank (1935) indicated that level of aspiration was a relatively permanent characteristic of the individual and that this permanence could be demonstrated regardless of the type of ability the task required. The choice of goal difficulty, according to Frank's suggestion above, is a personal characteristic independent of most situational influences. Himmelweit (1947) extended the work of Frank and suggested that goal choice (or level of aspiration) results from three conflicting forces: (a) realistic judgment, based on past performance, (b) the desire to increase self-esteem and (c) the desire for self-protection. It is interesting that these three forces as outlined by Himmelweit nearly 40 years ago parallel the motivational bases of self-handicapping to be discussed shortly. Himmelweit (1947) also maintained that while level of aspiration does cut across different tasks (as suggested by Frank, 1935), it is not absolute and can be influenced to varying degrees by situational influences. The last concern of this review is the implications of both self-handicapping strategies and the level of aspiration research for goal choice.

### **Self-Handicapping and Goal Choice**

Surprisingly, factors influencing goal choice have gone uninvestigated since this early work on level of

aspiration. Yet the work of Frank and Himmelweit seems to have implications for Locke's goal setting theory and more specifically, the relationship of handicapping to goal choice. With the advent of Locke's seminal work on goal setting (1968), the predominant approach has focused on the impact of goal difficulty on task or job performance. Campbell (1982) suggests that research is desperately needed on the actual determinants of goal choice. Understanding how goals facilitate performance can be accomplished only by examining personal and situational influences on goal setting behavior (Campbell, 1982).

#### Overview of Self-handicapping Research

According to Arkin and Baumgardner (1985b) and Jones and Berglas (1978), self-handicapping is a self-protective attempt to exercise attributional principles in a social domain. The process by which people form causal interpretations of the events around them is addressed by attribution theories (Arkin & Baumgardner, 1985b). The basis of self-handicapping is the self-serving bias or a tendency of individuals to attribute successful outcomes to themselves and unsuccessful outcomes to other factors (Arkin & Baumgardner, 1985b). By attributing unsuccessful outcomes to factors unrelated to the individual, he or she is able to decrease the negative implications of failure on self-evaluation. Similarly, by assuming responsibility for

success he or she increases the positive implications of success on self-evaluation.

Self-handicapping is a more subtle application of the self-serving bias. A person who self-handicaps chooses to perform only certain behaviors or manipulates the context in order to control the inferences or evaluations made by others. Self-handicapping then, is either the acquisition or claim of an impediment to performance (Arkin & Baumgardner 1985b). If one fails in performance, the failure can be attributed to the handicap and the self-serving bias can therefore be maintained.

Types of Handicaps. Several studies have shown that individuals will choose performance-debilitating drugs and alcohol, reduce effort, or choose to perform in the presence of distracting noise as a means to handicap themselves (Arkin & Baumgardner, 1985b). These studies typically have presented individuals with the opportunity to choose one of these self-handicaps following one trial (or a series of trials) where they are led to feel either certain or uncertain about their ability to perform well in the future. The general finding is that individuals who are uncertain about their ability to perform well on a future task will choose a handicap. In this way, they may discount lack of ability as a plausible cause of future failure (Arkin & Baumgardner, 1985b; Baumgardner, Lake, & Arkin, 1985; Berglas & Jones, 1978; Jones & Berglas, 1978).



Individuals may choose a variety of handicaps. According to Arkin and Baumgardner (1985b), these handicaps may be characterized along two dimensions: (a) action and (b) locus. In terms of action, handicaps may be either acquired or claimed, and regarding locus they may be either internal or external.

With respect to the action dimension, Snyder and his colleagues (cf., Smith, Snyder, & Handelsman, 1982; Smith, Snyder, & Perkins, 1983; Snyder & Smith, 1982) have examined the use of strategic claims in evaluative settings. They have suggested that the use of symptoms such as social or test anxiety may be used strategically to protect esteem. However, most handicapping researchers have focused on acquired handicaps. Acquired handicaps consist of those impediments to accurate appraisal that are actively sought such as the ingestion of alcohol or other debilitating drugs, intentional lack of practice, etc. (Arkin & Baumgardner, 1985b).

Regarding the locus dimension, two sorts of handicaps exist: (a) internal and (b) external. For example, Jones and Berglas (1978) found that subjects would protect themselves by ingesting a debilitating drug. This is an example of an internal acquired handicap.

An external acquired handicap is one that sets the stage such that poor performance would be attributed to an external impediment rather than one's ability or

competence. For instance, Rhodewalt and Davison (1984) demonstrated that subjects chose to listen to performance-debilitating music when they were led to believe they might perform less well in the future. Although the Rhodewalt and Davison (1984) study is a good example of the use of external handicaps, other researchers have not examined this type of handicapping.

Sex Differences. Very few studies have demonstrated handicapping among females (Baumgardner et al., 1985). In those studies employing both sexes as subjects, males self-handicapped whereas females have not (Berglas & Jones, 1978; Tucker, Vuchinich & Sobell, 1981). In the few studies that have demonstrated handicapping among females the handicap has always taken the form of a claim rather than an active behavior (acquired). Women have claimed test anxiety (Smith et al., 1982), hypochondriacal ailments (Smith et al., 1983) and mood (Baumgardner et al., 1985) as handicaps to performance. To date, however, it has not been demonstrated that females will handicap behaviorally, that is, actively seek and acquire a handicap to performance.

Baumgardner et al. (1985) and Harris and Snyder (1985) agree that women probably do handicap and may actively acquire handicaps under the right conditions. They suggest that the nature of the handicaps available to subjects in most handicapping studies (e.g., drug ingestion, alcohol consumption, and effort withdrawal) are less appealing to

women than men. Perhaps women do not find these types of handicaps as agreeable to them as the handicap claims discussed earlier. It is believed that the handicap made available in the current investigation (i.e., goal difficulty) is very unlike the handicaps claimed by females in previous studies and therefore, female subjects are not expected to handicap. Also, males may be more ego-involved in intellectual challenges and more confident regarding their abilities than females (Arkin & Baumgardner, 1985b).

#### Implications of Handicapping for Goal Choice

Arkin and Baumgardner (1985b) suggest that difficult tasks or difficult goals could be selected by individuals as external handicapping strategies. An individual who performs well on a task, but attributes his or her performance to something other than ability (i.e., is given noncontingent success feedback and is uncertain regarding future performance) may choose a difficult goal for a future task. By choosing a difficult goal, the individual has an excuse for failure. His or her logic would likely be that failure was due to the difficulty of the goal and not his or her ability. Further, there should be few negative ramifications of failure since presumably most others would also fail to achieve such a difficult goal. For instance, the graduate student who chooses to attend Virginia Tech rather than a less demanding program and does poorly, may

believe (and convince others) that the competition was stiff and the goal too difficult at the very beginning.

In an attempt to relate goal setting to self-handicapping, Greenberg (1985) conducted a study in which subjects chose a task to work on after receiving noncontingent or contingent success feedback. He reported that subjects who had been led to expect failure chose performance goals that were very difficult. However, a major flaw of the Greenberg (1985) study was in the operational definition of goal difficulty. A difficult goal was equated with an easy task. Subjects in some conditions were told that 5% correct was a "good" score (actually an easy goal, but a difficult task) and in other conditions subjects were told that 90% correct was a "good" score (actually a difficult goal, but an easy task). This is inconsistent with previous definitions of goal difficulty (cf., Garland, 1983; Himmelweit, 1947; Ivancevich, 1976; Latham & Locke, 1975; Latham & Yukl, 1976; Locke, 1968, 1969; Terborg, 1976). In addition, it is illogical to imply that an easy task could be construed as an impediment or excuse for poor performance. The Greenberg (1985) study adds little, if anything, to the self-handicapping literature (see also Sachs, 1982). It may be better viewed within the context of the diagnosticity literature. It replicates the choice of an easy and nondiagnostic task

(Trope, 1979), but it is highly questionable if self-handicapping occurred at all.

The study reported here examined choice of level of goal difficulty as a handicapping strategy. Task difficulty was equated with goal difficulty; goal choice then, was defined operationally as the task on which an individual chooses to work on; the flaws and confounds prevalent in the Greenberg study were overcome because goal difficulty was not confounded with task difficulty. Before presenting this study, it is necessary to consider the reasons why an individual would choose a difficult goal as a handicapping strategy.

#### Why Handicap through Goal Choice?

Two major reasons for the use of self-handicapping strategies are: (a) the maintenance and protection of self-esteem, and (b) self-presentation or the maintenance of a positive public image (Arkin & Baumgardner, 1985b). These two mechanisms correspond to the second and third forces identified by Himmelweit (1947) as determinants one's level of aspiration, goal, or intention; namely, the maintenance of self-esteem and the desire for self-protection. The other factor suggested by Himmelweit (1947), realistic judgment based on past performance, also relates to the bases of self-handicapping behavior since individuals make judgments about when their esteem or public image is threatened based on past performance. It is intriguing that

the factors affecting goal choice in the early goal setting research (i.e., level of aspiration research) are congruent with the antecedent conditions to self-handicapping.

Esteem Protection. When Jones and Berglas (1978) first introduced the term self-handicapping, they based the response on the individual's desire to protect or sustain self-esteem. They argued that the individual who handicaps typically has a fragile, but not entirely negative self-concept. The very basis of the self-handicapping strategy must be "that the strategist has something to protect" (Jones & Berglas, 1978, p. 205).

In their initial study, Berglas and Jones (1978) provided some subjects with noncontingent success feedback which was intended to induce uncertainty in the subjects regarding future performance. They hypothesized that this uncertainty led to a desire to protect self-esteem and, therefore, these subjects handicapped their future performance by ingesting a debilitating-drug.

It should be noted that uncertainty can be both dispositional (i.e., low self-esteem) and situationally induced (i.e., noncontingent success) (cf., Baumgardner & Brownlee, 1986). The following study examined both varieties of uncertainty.

Esteem protection may also mediate the choice of a difficult goal as a self-handicapping strategy. For the present experiment, it was predicted that subjects who

received noncontingent success feedback would choose a difficult goal for a future task in order to maintain or protect their self-esteem. The individual can then attribute failure, if he or she fails, to the goal difficulty, thereby externalizing failure and protecting self-esteem.

Self-presentation. Two studies have demonstrated that self-handicapping serves a self-presentational purpose (Baumgardner, Lake, & Arkin, 1985; Kolditz & Arkin, 1982). The self-presentational purpose implies that the ambiguity created by the handicap helps the individual maintain a positive public rather than private image (Arkin & Baumgardner, 1985b).

Kolditz and Arkin (1982) varied the publicity of self-handicapping (drug choice) and found that handicapping was almost eliminated when subjects made their drug choice in private (where self-presentational concerns were largely absent). The results of this study clearly suggest a self-presentation interpretation of the self-handicapping phenomenon. Subjects apparently handicapped only when led to believe that others (i.e., the experimenter) would be aware of the presence of the handicap. This finding was corroborated by Baumgardner et al. (1985).

Self-presentational concerns may also influence the choice of a difficult goal as a self-handicapping strategy. It was predicted that subjects given noncontingent success

feedback would choose a difficult goal only in public circumstances. That is, when one's public image is at stake, the individual will choose difficult goals because he or she believes that others will attribute his or her failures to the difficult goals rather than to ability. This action reflects the individual's attempt to avoid a negative evaluation by others.

### Overview of the Study

The present study examined the effects of self-esteem, gender, success feedback and evaluation mode in a 2 x 2 x 2 x 2 factorial design on subjects' choice of goal difficulty and ensuing performance. Two levels of each independent variable were employed: high and low self-esteem, male and female genders, contingent and noncontingent success feedback, and public and private evaluation mode.

From goal setting, level of aspiration, and self-handicapping theories, the following major hypothesis was generated:

Hypothesis 1: It was predicted that males would choose more difficult goals than females because they would be more likely to handicap. In addition, self-handicapping behavior (i.e., difficult goal choice) should be significantly more prevalent among low esteem males in public, noncontingent success feedback conditions, relative to their counterparts. These same subjects were expected to report



lower performance expectations than their counterparts on the subsequent task. The strongest evidence for the self-handicapping effect would be the emergence of a four-way interaction among sex, self-esteem, success feedback, and evaluation mode.

The following ancillary hypothesis was generated regarding the effects on the performance dependent variable:

Hypothesis 2: Although handicapping is a dependent variable and is not manipulated in this study, it was predicted that subjects acquiring a handicap through the choice of a difficult goal would perform significantly better on a subsequent task than those who did not acquire a handicap. This performance facilitating effect of handicapping was predicted only in those conditions where uncertainty is experimentally manipulated (i.e., low self-esteem males within the public noncontingent success condition).

## METHOD

### Subjects

Two hundred and two psychology students in 2000 level courses were employed as subjects. They received extra credit toward their final grade.

### Design

The present study consisted of a 2 (self-esteem: high vs low) x 2 (sex: male vs female) x 2 (evaluation mode: public vs private) x 2 (success feedback: contingent vs noncontingent) between groups factorial design. The major dependent measure was choice of goal difficulty. Ancillary measures included actual performance following goal choice and a measure of performance expectations on the subsequent task.

### Independent Variables

Male (n = 92) and female (n = 110) subjects were initially given the Rosenberg Self Esteem Inventory (Rosenberg, 1965); the Rosenberg scale consists of 10 items written in a four point Likert-type format anchored by "strongly agree" and "strongly disagree" (see Appendix A). A median split divided the sample of subjects into high (n = 112) and low (n = 90) self-esteem groups.

Success feedback. Approximately one half of the subjects were randomly assigned to receive contingent success feedback (n = 99) and approximately one half were randomly assigned to receive noncontingent success

feedback (n = 103). In the noncontingent conditions, subjects were given a test consisting of 18 analogies, 14 of which are insoluble (see Appendix B). In the contingent feedback condition, subjects were given 18 analogies, 4 of which are insoluble (see Appendix C). In both conditions, subjects were told not to expect to do better than 10 or 11 correct "since most people do not do even that well." Their answer sheets were returned with seven of their answers marked wrong. The fraction 11/18 was printed on the top of their sheet signifying that they correctly answered "eleven out of eighteen."

Evaluation mode manipulation. The public/private conditions were created through the manipulation of anonymity. Those subjects assigned to the public conditions (n = 105) were asked to label their work on the second test (or posttest) with their ID number and their name printed in capital letters. In these public conditions, for the duration of the session, the experimenter tried to address each subject by his or her first name. The subjects were instructed that after they worked on the puzzle of their choice, they would have to tell the experimenter which task they chose and how well they did.

Subjects in the private condition (n = 97) were read a set of instructions that emphasized the importance of their anonymity. The instructions stated that after working on the puzzle each subject was to place his or her work in an

envelope which the experimenter had previously addressed so that it could be sent to another researcher in Ohio. Also, they were told that the experimenter would not evaluate their work. Subjects in the private conditions only included the last four digits of their ID number on their solutions.

### Dependent Measures

Goal choice measure. The primary dependent variable was the level of goal difficulty which the subjects chose. Following the receipt of either contingent or noncontingent feedback, subjects were instructed to choose one of a series of nine puzzles of varying difficulty. Difficulty was manipulated by providing subjects with bogus normative pilot information (e.g., 20% of previous subjects have solved this puzzle correctly, 30% have solved this one correctly etc.). The goal choice dependent measure was the task each subject chose (see Appendix D).

Performance measure. After choosing a puzzle, all subjects were given the same task to solve. After 5 minutes, the experimenter told the subjects that time had expired and collected their solutions (either by hand or by collecting the sealed envelope). The dependent variable was the number of letters correctly employed in grid construction (see Appendix E).

### Manipulation Check Items

In order to assess the impact and believability of the experimental manipulations, the subjects were asked about the experimental procedures at various times throughout the study (see Appendices F and G).

### Procedure

Subjects participated in groups of four to six. Upon entering the experimental room, subjects were seated, given a consent form, and ensured of confidentiality (see Appendix H). Dividers separated the subjects from each other so that they could not see each other or view their behavior. Subjects were asked to complete the self-esteem scale which was described as a personality test. The experimenter told the subjects that the test was not part of this study, but was given to the experimenter by one of his colleagues who needed data on this personality test for a study she was conducting. The experimenter then read an overview of the study and a description of the events that were to follow (see Appendix I).

Next, the experimental packet, consisting of the analogies, was given to the subjects. The analogies were taken from Kolditz and Arkin (1982). Within each experimental session, one half of the subjects was randomly assigned to contingent success feedback and the other half to noncontingent success feedback. The subjects were told the following:

You will have 15 seconds for this sample item and for each of the next 18 items. Also, after you make your selection by writing the letter corresponding to your choice on the blank sheet next to the appropriate number, you should write the number that represents your level of certainty in your choice (1 to 10). When you are done with the sample test you can number your paper from 1 to 18 and get ready for the next item. A reminder: do not go ahead and please include a certainty measure for each item. Any questions? Let's start with the sample item and I will tell you when to go to each succeeding item.

The experimenter instructed the subjects to proceed to the next analogy every 15 seconds. After completion of the analogies, the experimenter collected their packets and answer sheets, went to the front of the room and pretended to correct their answers. A few minutes later, he gave each subject his or her feedback, in writing, and reminded them not to expect to get more than 10 or 11 correct. The subjects were unaware that each received the same false feedback, that is, 11 out of 18 correct. They were instructed to turn their answer sheet over, and not to discuss it with the others.

The experimenter then distributed to each subject a "goal choice sheet" listing 9 test forms and their corresponding levels of difficulty and diagnosticity (see Appendix D). Subjects were instructed to select the puzzle that they wished to work on. They were told the following:

Before you circle the test form that you wish to work on next, let me explain what the second tests are like. They all require solving a puzzle that taps a similar part of your Synthetic Ability. Next to each form code is the percentage of people who have

correctly solved the puzzle and its diagnosticity rating. Choosing a difficult puzzle to solve such as the one that only 10% of previous subjects have gotten right, provides you with very little information about your ability since almost no one does well on this puzzle. Likewise, the easiest puzzle on the sheet provides you with little information about your ability because you will probably do well on it like everyone else. The puzzles in the middle provide you with the most information about your ability. Difficult puzzles and easy puzzles are low in diagnosticity, that is, they provide little personal information. The moderately difficult puzzles are the most diagnostic. Since we need data on each of these 9 puzzles, the one you work on is totally up to you. You can choose an easy task (low diagnosticity), a moderate task (high diagnosticity), or a difficult task (low diagnosticity). In a few minutes I will ask you to make your choice by circling the test form that you wish to work on.

Subjects in the public conditions were told that after they make their choice they will be given that puzzle to try and solve. They were also told that after the time has expired the experimenter will go over each subject's answer with him or her and provide him or her with some good puzzle solutions. Subjects in the private conditions were instructed that after they make their selection and work on that puzzle they will put their answer sheet in a sealed envelope which will be sent to a colleague at Ohio State University (see Evaluation Mode Manipulation).

After the subjects chose their puzzle, the sheets were collected and a questionnaire entitled "Midpoint Questionnaire" was administered (see Appendix F). It contained the manipulation checks relating to the first intellectual test and other questions probing the efficacy of the experimental procedures. The experimenter told the

subjects that the Psychology Department wanted to evaluate the experiment and the procedures employed, also that this questionnaire and the one to follow shortly were part of this process.

Each subject was then given a puzzle supposedly corresponding to the one he or she selected previously. In actuality, all subjects were given the same puzzle (see Appendix E). When the allotted 5 minutes expired, the experimenter explained to the subjects in the public condition that another questionnaire, the "Final Questionnaire," would be administered before their solutions to the puzzle would be discussed. To those subjects assigned to the private conditions, the experimenter explained that the final questionnaire would be completed after the subjects placed their solutions in the envelope. The final questionnaire consisted of the manipulation check items testing the perception of the public or private nature of the experiment, the understanding of diagnosticity, and other areas important to the efficacy of the experimental methods (see Appendix G).

With the completion of this final questionnaire, the experimental session ended. Subjects were thanked, told that the experiment was finished, debriefed thoroughly (see Appendix J), and asked to not discuss the experiment with anyone for at least five months. When the debriefing appeared to be complete, subjects were dismissed.



## RESULTS

### Manipulation Checks

Several 10-point Likert-type items were included in the Midpoint Questionnaire and the Final Questionnaire to assess the effectiveness of the experimental manipulations. Four items were included to assess the feedback (contingent vs noncontingent) manipulation. These included subjects' ratings of: (1) how difficult the analogies were; (2) how difficult they believed the experimenter would rate the analogies; (3) to what factors they attributed their performance on the analogies test; and (4) to what factors they believed the experimenter would attribute their performance on the analogies test. Three items were included to assess the evaluation mode (public vs private) manipulation. These included asking subjects (1) to what degree they felt their performance on the puzzle task was public or private; (2) how likely it was that the experimenter would know their name; and (3) and how likely it was that the experimenter would know how well they performed on the puzzle task.

Two (self-esteem: high vs low) x 2 (sex: female vs male) x 2 (evaluation mode: public vs private) x 2 (feedback: contingent vs noncontingent) Analyses of Variance (ANOVAs) were performed on each of these items. Initial analyses revealed no differences (main effects or interactions) between the two experimenters for any of the

measures; therefore, this variable was collapsed across experimental conditions. The summary tables for the results of these analyses are in Appendix K.

Feedback. The expected main effects of feedback emerged on all four checks for this manipulation (see Tables K-1 to K-4). Subjects in the noncontingent conditions rated the analogies as more difficult, ( $\underline{M} = 7.77$ ), than did the subjects in the contingent conditions ( $\underline{M} = 5.99$ ),  $\underline{F} (1, 185) = 64.43$ ,  $\underline{p} < .001$  (see Table K-1). Similarly noncontingent subjects reported that the experimenter would rate the analogies as being more difficult, ( $\underline{M} = 7.53$ ) than did the contingent subjects ( $\underline{M} = 6.80$ ),  $\underline{F} (1, 185) = 12.61$ ,  $\underline{p} < .005$  (see Table K-2).

Subjects in the noncontingent conditions were more likely to attribute their successful performance to luck as opposed to ability, ( $\underline{M} = 4.85$ ) than were subjects in the contingent conditions ( $\underline{M} = 6.44$ ),  $\underline{F} (1, 185) = 43.92$ ,  $\underline{p} < .001$  (see Table K-3). Likewise, noncontingent subjects were more likely to report that the experimenter would attribute performance to luck as opposed to ability, ( $\underline{M} = 4.94$ ) than were contingent subjects ( $\underline{M} = 6.09$ ),  $\underline{F} (1, 185) = 33.11$ ,  $\underline{p} < .001$  (see Table K-4). Table K-5 presents the appropriate means on these checks.

In addition to the anticipated main effects on these items, a main effect of esteem was found (see Table K-1) on one of the feedback manipulation checks,  $\underline{F} (1, 185) = 9.86$ ,

$p < .002$ . Low esteem subjects reported that the analogies were more difficult ( $M = 7.27$ ) than did high esteem subjects ( $M = 6.59$ ).

Evaluation Mode. The expected main effects of evaluation mode emerged on all three checks of this manipulation (see Tables K-6 to K-8). Subjects in the public conditions reported that their behavior was more shared and scrutinized by the experimenter ( $M = 4.23$ ) than did subjects in the private conditions ( $M = 2.88$ ),  $F(1, 185) = 21.05$ ,  $p < .001$  (see Table K-6). In addition, subjects in the public conditions reported it more likely that the experimenter would know their names, ( $M = 5.69$ ) than did subjects in the private conditions ( $M = 2.92$ ),  $F(1, 185) = 57.22$ ,  $p < .001$  (see Table K-7). Finally, subjects in the public conditions were more certain that the experimenter would know how well they performed on the puzzle task, ( $M = 7.17$ ) than were subjects in the private conditions ( $M = 2.38$ ),  $F(1, 184) = 222.62$ ,  $p < .001$  (see Table K-8). Table K-9 presents the appropriate means on these checks.

In addition to the predicted main effects on these items, an interaction of esteem, evaluation mode, and sex emerged on the item asking to what degree subjects felt their performance on the puzzle was public or private,  $F(1, 184) = 7.50$ ,  $p < .007$  (see Table K-6). Simple effects analyses revealed four comparisons that reached statistical

significance. For males in the public conditions, those low in esteem reported that their behavior was more public ( $M = 4.74$ ) than did those high in esteem ( $M = 3.31$ ),  $F(1, 184) = 5.86$ ,  $p < .05$ . However, no differences emerged between low esteem ( $M = 2.72$ ) and high esteem ( $M = 3.23$ ) males in the private conditions.

Low esteem males in the public conditions also reported that their behavior was more public ( $M = 4.74$ ) than did low esteem males in the private conditions ( $M = 2.72$ ),  $F(1, 184) = 9.09$ ,  $p < .01$ . However, this difference did not emerge for high esteem males (public  $M = 3.31$ ; private  $M = 3.23$ ).

Only one difference emerged between females assigned to the various conditions: High esteem females in public conditions reported that their behavior was more public ( $M = 5.00$ ) than did high esteem females in private conditions ( $M = 2.56$ ),  $F(1, 184) = 19.80$ ,  $p < .001$ . Finally, high esteem females in public also reported that their behavior was more public ( $M = 5.00$ ) than did their male counterparts ( $M = 3.31$ ),  $F(1, 184) = 9.23$ ,  $p < .01$ . No other differences emerged between males and females in any other conditions.

An interaction of sex and feedback emerged on the manipulation check asking how likely it was that the experimenter would know how well they performed on the puzzle task,  $F(1, 184) = 4.32$ ,  $p < .039$ . The interaction was accounted for by the finding that males who received

contingent feedback rated their performance as being more public than did any of their male or female counterparts. They reported that the experimenter was more likely to know how well they performed ( $\underline{M} = 5.47$ ) than did their female counterparts ( $\underline{M} = 4.56$ ),  $\underline{F} (1, 184) = 3.97, p < .05$ . No difference emerged between males ( $\underline{M} = 4.50$ ) and females ( $\underline{M} = 4.84$ ) given noncontingent feedback.

Males given contingent feedback also reported that the experimenter was more likely to know how well they performed ( $\underline{M} = 5.47$ ) than did males given noncontingent feedback ( $\underline{M} = 4.50$ ),  $\underline{F} (1, 184) = 4.10, p < .05$ . This finding was not expected nor can it be easily explained within the framework of this investigation. However, no differences emerged between females given contingent feedback ( $\underline{M} = 4.56$ ) and those given noncontingent feedback ( $\underline{M} = 4.84$ ).

In sum it appears that both manipulations were generally effective. Subjects in the noncontingent feedback conditions found their task more difficult and attributed their performance more to luck than did those in the contingent conditions. Also, subjects in the public relative to private conditions reported that the experimenter was more likely to know their names and their performance scores.

Additional Checks. Six additional items were included in the questionnaires to check subjects' comprehension of diagnosticity, goals, task difficulty, and performance

attributions (see Table K-10 to K-16). Subjects were asked how much information about their performance and ability an easy, difficult, or moderate task would provide them. These means were in the predicted direction (see Table K-16) with a moderate task ( $\underline{M} = 5.74$ ) being viewed as providing more information relative to an easy task ( $\underline{M} = 2.78$ ),  $\underline{t} (400) = 11.66$ ,  $\underline{p} < .001$  and a difficult task ( $\underline{M} = 4.62$ ),  $\underline{t} (398) = 4.61$ ,  $\underline{p} < .001$ . Although not expected, subjects also reported that a difficult task ( $\underline{M} = 4.62$ ) provides more information than would an easy task ( $\underline{M} = 2.78$ ),  $\underline{t} (398) = 6.74$ ,  $\underline{p} < .001$ . These dependent sample  $\underline{t}$ -tests indicate that the subjects understood the relationship between diagnosticity and task difficulty.

Subjects were also asked to what factors (luck vs ability) they would attribute their upcoming performance if they chose an easy, moderate, or difficult task. If subjects understood the relationship between luck and ability it would be expected that they would attribute success on an easy task more to ability than they would on a moderate task and attribute success on a moderate task more to ability than they would on a difficult task. The means were in the expected direction (see Table K-16) with success on an easy task attributed more to ability ( $\underline{M} = 8.45$ ) than was success on a moderate task ( $\underline{M} = 7.33$ ),  $\underline{t} (397) = 6.45$ ,  $\underline{p} < .001$ , success on a moderate task attributed more to ability ( $\underline{M} = 7.33$ ) than was success on a difficult task ( $\underline{M} =$

6.39),  $t(398) = 4.76$ ,  $p < .001$ , and success on an easy task attributed more to ability ( $M = 8.45$ ) than was success on a difficult task ( $M = 6.39$ ),  $t(397) = 10.18$ ,  $p < .001$ .

### Major Dependent Variables

The summary results for these analyses are in Appendix L.

Goal Choice. Subjects' goal choice was the major dependent variable in this investigation. A 2 (self-esteem: high vs low) x 2 (sex: female vs male) x 2 (evaluation mode: public vs private) x 2 (feedback: contingent vs noncontingent) ANOVA was computed on this measure (see Table L-1). A main effect of esteem showed that high esteem subjects chose more difficult goals ( $M = 5.09$ ) than did low esteem subjects ( $M = 5.61$ ),  $F(1, 185) = 5.85$ ,  $p < .017$ . A main effect of sex also emerged,  $F(1, 185) = 18.93$ ,  $p < .001$ ; males chose more difficult goals ( $M = 4.80$ ) than did females ( $M = 5.75$ ). Table L-2 presents the cell sizes and mean goal choice scores for each experimental condition.

An interaction of esteem, evaluation, and feedback was found,  $F(1, 185) = 5.68$ ,  $p < .018$ . Simple effects analyses of this interaction revealed a statistically significant esteem x feedback interaction for subjects in the public condition,  $F(1, 101) = 6.01$ ,  $p < .016$ , but not for subjects in the private condition,  $F < 1.5$ . A statistically significant esteem x evaluation mode interaction was found

for subjects given contingent feedback,  $F(1, 94) = 4.34$ ,  $p < .04$ , but not for subjects given noncontingent feedback,  $F < 2.0$ .

Simple main effects analyses revealed that within the public conditions, high esteem subjects provided with contingent feedback chose more difficult goals ( $M = 4.64$ ) than did low esteem subjects provided with contingent feedback ( $M = 6.00$ ),  $F(1, 185) = 9.84$ ,  $p < .01$  (see Table L-3). Also within the public conditions, high esteem subjects given contingent feedback chose more difficult goals ( $M = 4.64$ ) than did high esteem subjects given noncontingent feedback ( $M = 5.48$ ),  $F(1, 185) = 4.23$ ,  $p < .05$ .

Although the predicted interaction of sex, esteem, feedback, and evaluation mode did not emerge, the predicted pattern of means was found (see Table L-4). Because of this and the prediction predicted that handicapping (i.e., difficult goal choice) would be more likely to occur in one condition than the others, exploratory analyses were conducted to examine the differences in goal choice across experimental conditions. Within public conditions low esteem males provided with noncontingent feedback tended to chose more difficult goals ( $M = 4.55$ ) than did those provided with contingent feedback ( $M = 5.55$ ),  $t(18) = 1.67$ ,  $p < .057$  (one-tail). High esteem subjects did not exhibit this effect.



In addition, within noncontingent conditions, low esteem males assigned to public conditions showed a slight tendency to choose more difficult goals ( $\bar{M} = 4.55$ ) than did low esteem males assigned to private conditions ( $\bar{M} = 5.30$ ),  $t(19)$ ,  $p < .098$  (one-tail). Although these comparisons did not reach the conventional level of statistical significance, the predicted pattern of results did occur.

Female subjects were not expected to handicap even when low in esteem and given noncontingent feedback in public. The goal choice of low esteem females provided with noncontingent feedback and led to expect a public evaluation ( $\bar{M} = 5.88$ ) did not significantly differ from low esteem females given contingent feedback in public ( $\bar{M} = 6.31$ ), low esteem females given noncontingent feedback in private ( $\bar{M} = 6.33$ ), or high esteem females given noncontingent feedback in public ( $\bar{M} = 6.27$ ). Table L-5 summarizes these data.

As Table L-5 shows, low esteem females given contingent feedback and assigned to the public evaluation mode chose easier goals ( $\bar{M} = 6.31$ ) than did low esteem females given contingent feedback and assigned to the private evaluation mode ( $\bar{M} = 5.00$ ),  $F(1, 185) = 4.49$ ,  $p < .05$ . Also, low esteem females given contingent feedback and assigned to the private evaluation mode chose more difficult goals ( $\bar{M} = 5.00$ ) than did low esteem females in private given noncontingent feedback ( $\bar{M} = 6.33$ ),  $F(1, 185) = 4.47$ ,  $p < .05$ . Both of these findings were unexpected.

Expectations and Goal Choice. A notable pattern of results was found with regard to the subjects' performance expectations on the puzzle task. Subjects were asked how well they expected to perform on the puzzle task relative to their performance on the analogies task (see Table L-6). An interaction of feedback and sex emerged on this item,  $F(1, 185) = 4.00, p < .046$ . Males who received noncontingent feedback reported lower expectations for their upcoming performance than did all of their counterparts (see Table L-7). Their expectations ( $M = 5.11$ ) were lower than females given noncontingent feedback ( $M = 5.72$ ),  $F(1, 185) = 6.09, p < .05$  and lower than males given contingent feedback ( $M = 5.77$ ),  $F(1, 185) = 6.24, p < .05$ . However, no other differences emerged.

Since it was predicted that low esteem males given noncontingent feedback and assigned to a public evaluation mode would report lower performance expectations than the other groups of subjects, exploratory analyses were conducted to investigate this prediction (see Table L-8). Because the four-way interaction of sex, feedback, esteem, and evaluation mode was not significant, exploratory  $t$ -tests were employed here rather than simple effects tests. Further breakdown of the means contributing to the feedback  $\times$  sex interaction showed that it was accounted for by low esteem males. Low esteem males given noncontingent feedback reported lower performance expectations ( $M = 4.60$ ) than did

low esteem males given contingent feedback ( $\bar{M} = 5.88$ ),  $t(36) = 3.29$ ,  $p < .01$ , and high esteem males given noncontingent feedback ( $\bar{M} = 5.54$ ),  $t(43) = 2.18$ ,  $p < .05$ . No other significant differences emerged across conditions.

The last series of  $t$ -tests on the mean expectancies (see Table L-9) revealed that within public conditions, low esteem males given noncontingent feedback reported lower performance expectations ( $\bar{M} = 4.10$ ) than did low esteem males given contingent feedback ( $\bar{M} = 5.89$ ),  $t(18) = 3.44$ ,  $p < .01$ . A similar difference was not found for subjects high in esteem.

No differences emerged within the private conditions for this measure (see Table L-9). However, comparisons between public and private conditions showed one effect that approached significance: within noncontingent conditions, low esteem males assigned to a public evaluation mode showed a slight tendency to report lower performance expectations ( $\bar{M} = 4.10$ ) than did low esteem males assigned to a private evaluation mode ( $\bar{M} = 5.10$ ),  $t(21) = 1.72$ ,  $p < .10$  (one-tail). The results of these exploratory analyses on the performance expectations measure indicate that low esteem males provided with noncontingent feedback and led to believe that their performance was public reported lower expectations than any other relevant group. This is consistent with the a priori prediction that these subjects, who were already dispositionally uncertain, would be less

certain about ensuing performance. This finding, coupled with the goal choice results, suggests that low esteem males provided with noncontingent feedback and assigned to a public evaluation mode were uncertain regarding ensuing puzzle performance and, therefore, may have opted for a more difficult goal than did other subjects.

Additional exploratory analyses were conducted. Correlations were computed between subjects' performance expectations and goal choice (see Table L-10). The overall correlation for the entire sample was highly significant,  $r(199) = .22$ ,  $p < .002$ , with subjects who reported lower performance expectations choosing more difficult goals. Correlations were then computed by condition. A strong relationship existed between the performance expectations and goal choice of low esteem males given noncontingent feedback and assigned to a public evaluation mode,  $r(19) = .79$ ,  $p < .006$ . This relationship was in the expected direction with subjects who chose more difficult goals reporting the lowest expectations about their ensuing performance. In addition, there was a significant relationship between performance expectations and goal choice for low esteem females given noncontingent feedback and assigned to a private condition,  $r(22) = .82$ ,  $p < .005$ .

Performance. Four-way ANOVAs were also conducted on the performance data obtained from subjects' solutions to

the puzzle task and no significant main or interaction effects emerged (see Table L-11). However, an interaction of esteem and sex approached significance,  $F(1, 186) = 3.36$ ,  $p < .068$ .

#### Additional Analyses

Several exploratory 10-point Likert-type items were included in the two questionnaires. These included items asking how comfortable the subjects were in the experimental conditions, how courteous the experimenter was, how nervous the subjects were during the experiment, how much choice the subjects had regarding the difficulty of the puzzle they worked on, and how much effort they exerted on each of the tasks.

Some exploratory items were included that revealed no differences across conditions. These items included the responses to a few open-ended questions coded by the primary investigator as either suspicious of the experimental purpose and methods or not suspicious. Data were analyzed with and without the 10 subjects whose responses were coded as suspicious. No differences on the major dependent variables emerged and therefore the data from the total sample was used for the analyses.

A main effect of sex emerged on an item asking subjects how courteous versus rude the experimenter had been,  $F(1, 185) = 7.33$ ,  $p < .01$ ; females rated the experimenter more courteous ( $M = 2.27$ ) than did males ( $M = 3.03$ ).

Subjects were also asked how much choice they had over the difficulty of the puzzle task. A main effect of sex emerged on this item,  $F(1, 185) = 8.44, p < .005$ . Females reported having more choice over which puzzle they worked on ( $M = 8.71$ ) than did males ( $M = 7.81$ ). However, the means in all conditions were well above the midpoint (Range = 6.65 to 9.59), suggesting that subjects generally perceived that they had control over the difficulty of the puzzle task.

Subjects were asked how much effort they expended both on the analogies task and the puzzle task. For reported effort on the analogies task, main effects of sex  $F(1, 183) = 3.86, p < .05$  and feedback  $F(1, 183) = 5.79, p < .02$  emerged. Males reported that they tried harder ( $M = 7.27$ ) than did females ( $M = 6.59$ ) and contingent subjects reported that they put forth more effort on the analogies ( $M = 7.24$ ) than did noncontingent subjects ( $M = 6.55$ ). Finally, a main effect of evaluation emerged for reported effort on the puzzle task,  $F(1, 179) = 6.22, p < .02$ . Subjects assigned to public conditions reported more effort ( $M = 7.77$ ) than did those assigned to private conditions ( $M = 7.17$ ).

## DISCUSSION

### Goal Choice and Performance Expectations

The results of this investigation suggest that for some individuals goal choice may not always be determined by the expectancy of reaching a goal and the value assigned to attaining that goal. As suggested earlier in this paper, individual differences on such variables as self-esteem and gender may play a large part in goal choice. Also, a concern for positive self-presentation and the maintenance of esteem may mediate the relationship between the individual and his or her goal choice.

In public conditions, low esteem males who were led to feel uncertain about their future performance, tended to choose more difficult goals than did low esteem males who were not made to feel uncertain. These same uncertain subjects also chose slightly more difficult goals than uncertain subjects in private conditions. Although these effects were not significant, they were clearly in line with the predictions offered at the outset.

Although data from this study indicating the situational uncertainty of subjects is not available, it has been reported elsewhere (cf. Jones & Berglas, 1978; Kolditz & Arkin, 1982). The present study used the exact procedures regarding the feedback contingency manipulation as that of Kolditz and Arkin (1982). These investigators reported a reliable effect of feedback contingency on uncertainty ( $p <$

.0001) with subjects in the noncontingent conditions reporting more uncertainty with respect to their analogy answers than did subjects in the contingent conditions. Because the same procedures were used in the present investigation, the same effects with respect to the uncertainty manipulation are likely.

The correlation between the performance expectations of these uncertain subjects and their goal choices further supports the notion that a relationship exists between performance expectations and goal choice. The a priori prediction that low esteem subjects, when made to feel unsure of their ensuing performance and expecting a public evaluation, would handicap through the choice of difficult goals was only marginally supported. Because these data are correlational, no cause and effect statements can be made. However, it is possible that subjects who expected to perform poorly actually chose more difficult goals as a handicapping strategy. If so, this finding runs directly counter to the traditional expectancy-value approach where expectations of success supposedly predict the selection of difficult goals. However, this finding would be readily explainable from a self-handicapping framework where it was predicted that uncertainty, both dispositional and situationally-induced, would lead to the choice of difficult goals. It is feasible that these uncertain individuals may have manipulated the context (by acquiring a handicap of



goal difficulty) perhaps with the hope that in the event of poor performance others would attribute the performance failure to the handicap. Due to the correlational nature of these data, one could also conclude that these subjects expected to perform poorly because they chose difficult goals. Therefore, the explanation presented above, although in line with predictions, is speculative and other explanations cannot be eliminated.

Although low esteem males chose more difficult goals when made to feel uncertain and expecting a public evaluation, the general finding was that high esteem subjects chose more difficult goals than did low esteem subjects. It appears that difficult goals may be selected for various reasons. Perhaps uncertain males (both dispositionally and situationally uncertain) who chose difficult goals did so as a handicapping strategy, whereas the high esteem subjects may have opted for difficult goals for the more traditional expectancy-value reasons outlined by previous goal setting theory.

High esteem individuals tend to be more confident and self-assured. Research has demonstrated that these individuals have a tendency to choose difficult goals, especially after prior successes (cf. Campbell, 1982). It has been demonstrated also that individuals who have a high amount of higher-order needs (i.e., the degree to which a person desires enriched work) select more difficult goals,

because they tend to view them as attainable, than those who are low on this variable who view difficult goals as unreasonable (Ivancevich & McMahon, 1977). Finally, Yukl and Latham (1978) found that subjects high in need achievement set more difficult goals than those low in need achievement. It seems that high esteem subjects would be more likely to also rank highly on higher-order need strength and need for achievement than would low esteem subjects and this could have also resulted in overall tendencies for these subjects to choose difficult goals. Because need-strength and need for achievement were not measured in this investigation, no firm conclusions regarding the relationship between these characteristics and goal choice can be drawn. Yet most pertinent to this investigation is the weak tendency to choose more difficult goals of low esteem males assigned to a public condition and given noncontingent feedback. This effect, although only marginally significant, is more impressive when it is juxtaposed with the overall finding that high esteem subjects chose more difficult goals than low esteem subjects.

In addition, males generally chose more difficult goals than did females. Perhaps puzzle tasks are generally more favored by males than females, thus explaining this effect. Perhaps males have more experience with tasks similar to the one employed in this investigation and were therefore more

confident than the less experienced females. Also, males may find intellectual tasks more important than females. In some conditions, males may have opted for more difficult goals for these reasons. However, in the noncontingent public condition, low esteem males may have opted for difficult goals as a self-handicapping strategy.

Although the results for the male subjects tended to follow the predicted pattern, this was not the case for the female subjects. It was predicted that the goal choice of females would not differ significantly across conditions. This prediction was based on previous research which failed to show that females actively seek and acquire handicaps of the sort made available in this investigation. However, low esteem females not made to feel uncertain nor led to expect a performance review by the experimenter chose more difficult goals than the comparison female subjects. Since (1) these subjects were not made to be uncertain, and (2) uncertainty is a necessary element for the occurrence of self-handicapping, it seems unreasonable to interpret their choice of difficult goals as a handicapping strategy, thus a more parsimonious explanation seems necessary.

According to the traditional expectancy-value approach, those subjects who expect to do well on a future task and who value doing well would tend to choose difficult goals. Since the females who chose the most difficult goals also had the highest performance expectations (of all 16

conditions), this particular finding may best be explained from an expectancy-value approach. This explanation should be viewed cautiously because the present investigation did not allow for the measurement of subjects' value assignment to the goal. Nonetheless, perhaps low esteem females given contingent feedback and assigned to a private evaluation mode chose more difficult goals than did similar females given noncontingent feedback because the former were more certain about ensuing performance and expected to do well. Moreover, because the performance results were supposed to be anonymous, this gave them an opportunity to diagnose their ability in a private and "safe" setting.

Within the contingent conditions, low esteem females assigned to a public evaluation mode chose easier goals relative to that of low esteem females in private. They may have avoided difficult goals (i.e., chosen easier goals) for other reasons as well. In addition to reporting lower performance expectations than did those assigned to a private mode, these subjects had self-presentational concerns due to the nature of the public condition. Perhaps they opted for an easy goal because their desire to avoid any kind of failure overrode their desire to save face attributionally (i.e., through self-handicapping). Of course, the unpredicted finding that low esteem females given contingent feedback in private chose more difficult

goals than their counterparts cannot be explained readily within the confines of this investigation.

### Performance

Although no significant effects emerged on the performance variable, some interesting data are worth noting. Male and high esteem subjects chose more difficult goals than did female and low esteem subjects respectively. Exploratory analyses revealed that high esteem males chose the most difficult goals and also performed at the highest level. However, none of the correlations between goal choice and performance were significant. Conversely, low esteem males provided with noncontingent feedback and assigned to a public evaluation mode tended to handicap-- that is, they also chose difficult goals, but their performance was not correspondingly high. In fact, the performance level of subjects in this condition was the lowest of any of the sixteen conditions! Specifically, increased performance was not associated with the choice of difficult goals when the goal seemed chosen as a handicapping strategy. In this study at least, the choice of difficult goals as a handicapping strategy seemed associated with poorer performance. This is in direct opposition to the prediction that those who handicapped would be relaxed, because of the presence of the handicap, and would therefore perform well. A pattern in the opposite

direction was found-- they did not perform as well as those in the other conditions.

Perhaps these subjects, despite choosing difficult goals, were not intent on trying to achieve these goals. The performance of these subjects, rather than benefiting from the difficult goals through anxiety reduction as predicted, may have been adversely affected through the lack of goal acceptance or commitment. Recall that a basic assumption of goal setting theory is that the individual must accept (i.e., actually try for) the goal that was assigned or set (Locke et al., 1981). If these individuals were not working toward the goals that they set, goal setting theory would not predict an increase in performance. Of course this explanation is speculative and requires further research.

#### Limitations of the Study

One limitation of this investigation is the lack of a uniformly strong significant effect. Particularly, although the goal choice results were in the predicted direction, the strength of these effects was not reliable at a conventional level of significance. For instance, although low esteem males given noncontingent feedback in public chose more difficult goals than low esteem subjects given contingent feedback, in public, this only approached conventional levels of significance ( $p < .057$ ).

One aspect of the study that may have limited the handicapping effect has to do with the nature of the feedback. All subjects were given feedback and normative data regarding their performance indicating that they performed at a level above most previous subjects. The overall mean self-report of subjects' performance in relation to previous subjects was somewhat lower than anticipated. The mean rating was 6.34 on a 10-point scale. This was only slightly above the midpoint of 5.5 which was anchored by "about the same as previous experimental participants." Perhaps subjects thought they performed better than the average experimental subject, but did not perceive as great a difference between their own performance and previous subjects' as was intended.

Because the feedback was not perceived as positively as expected by either contingent or noncontingent subjects, it is possible that the uncertainty necessary to create situations favorable for handicapping was not aroused in the noncontingent subjects. Basically, if the noncontingent subjects did not feel as if they did well on the analogies task, but rather only slightly above average, less uncertainty existed regarding an explanation for their good performance than would have existed had they felt as if they had done extremely well. Yet the uncertainty regarding future performance is the critical element in creating situations favorable for handicapping. Without a great deal

of uncertainty it is unreasonable to expect subjects to be insecure enough about their future performance to protect themselves by handicapping. Although some handicapping was exhibited by those for whom it was predicted, the lack of uniform strength of this effect may be due, at least partially, to the perception of the feedback.

A second limitation has to do with the sex of the experimenters. Both experimenters were male and it is possible that the main effect of sex on goal choice as well as the results revealed by the exploratory analyses are in part a function of this. Perhaps females were less concerned with their self-presentations than were males because the experimenters were of the opposite sex. This could explain, at least in part, why females did not handicap in this study. A more complete test of the self-handicapping hypothesis would include male and female subjects and experimenters. This is certainly an area for future research.

#### Future Research

Although this investigation has answered some questions, it has suggested other questions as well. First, additional research should examine these same sort of issues while employing a similar methodology with a major change. The feedback manipulation should be strengthened in some way. The subjects must be made to perceive the feedback more positively.



Perhaps this could be done by telling subjects before the puzzle task that only one previous subject has exceeded 10 correct. This may make the ensuing feedback (i.e., 11 out of 18 correct) perceived more positively. An alternative might be to actually make the performance feedback more positive, such as 15 out of 18 correct. The difficulty with this alternative is that such a high score may not be believable. A combination of these two alternatives is also a possibility. The results of this proposed study should be stronger than those of the present investigation if the lack of feedback strength is a problem in this present investigation as has been suggested. This is one direction to be pursued in future research.

Future research should also investigate the relationship between goal setting and self-handicapping. The present study showed that a relationship may exist between the self-handicapping behavior and poor performance of a particular group of individuals; It was predicted by both goal setting theory and the relaxation hypothesis that those who handicapped would perform better than others. This study was limited by an omission of a goal acceptance measure. Additional studies should include a goal acceptance measure so that in the event that the present results are replicated, the hypothesized explanation posited can be empirically tested.

In conclusion, additional research should continue to explore the possibility of a relationship between goal setting and self-handicapping. The present investigation explored this relationship, but a great deal remains to be learned about how the two theories impact on each other.

## REFERENCES

- Arkin, R. M., & Baumgardner, A. H. (1985a).  
Self-handicapping. In J.H. Harvey & G. W. Weary (Ed.),  
Attribution: Basic issues and applications  
(pp. 169-202). New York: Academic Press.
- Arkin, R. M., & Baumgardner, A. H. (1985b). The  
facilitative effects of providing a self-handicap.  
Unpublished manuscript, University of Missouri,  
Columbia and Virginia Polytechnic Institute and State  
University, Blacksburg.
- At Emery Air Freight: Positive reinforcement boosts  
performance (1973). Organizational Dynamics, 1(3),  
41-50.
- Atkinson, J. W. (1964). An introduction to motivation.  
Princeton: Van Nostrand.
- Atkinson, J. W. (1974). Strength of motivation and  
efficiency of performance. In J. W. Atkinson and  
J. O. Raynor (Eds.), Motivation and achievement.  
Washington, D. C.: Winston.
- Atkinson, J. W. (1983). Personality, motivation and action  
--Selected Papers. New York: Praeger Publishers.
- Austin, J. T., Levy, P. E., Evensen, E. B., & Sgro, J. A.  
(1985). Assigned goals and normative information:  
Influences on personal goals and performance.  
Unpublished manuscript, Virginia Polytechnic Institute  
and State University, Blacksburg.

- Baumgardner, A. H., & Arkin, R. M. (1986). Coping with the prospect of social disapproval: Strategies and sequelae. In C. R. Snyder & C. Ford (Eds.), Clinical and social psychological perspectives on negative life events. New York: Plenum.
- Baumgardner, A. H., & Brownlee, E. A. (in press). Strategic failure in social interaction: Evidence for expectancy disconfirmation processes. Journal of Personality and Social Psychology.
- Baumgardner, A. H., Lake, E., & Arkin, R. M. (1985). Claiming mood as a self-handicap: The influence of spoiled and unspoiled public identities. Personality and Social Psychology Bulletin, 11, 349-357.
- Berglas, S. & Jones, E. E. (1978). Drug choice as a self-handicapping strategy in response to noncontingent success. Journal of Personality and Social Psychology, 36, 505-517.
- Brickman, P. & Bulman, R. J. (1977). Pleasure and pain in social comparison. In J. M. Suls & R. L. Miller (Eds.), Social comparison processes: Theoretical and empirical perspectives. Washington, D.C.: Hemisphere.
- Campbell, D. J. (1982). Determinants of choice of goal difficulty level: A review of situational and personality influences. Journal of Occupational Psychology, 55, 79-95.
- Cummings, L. L., Schwab, D. P., & Rosen, M. (1971).

- Performance and knowledge of results as determinants of goal setting. Journal of Applied Psychology, 55, 526-530.
- Erez, M. (1977). Feedback: A necessary condition for the goal setting-performance relationship. Journal of Applied Psychology, 62, 624-627.
- Festinger, L. (1954). A theory of social comparison processes. Human Relations, 40, 427-448.
- Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Boston, Mass: Addison-Wesley.
- Frank, J. (1935). Individual differences in certain aspects of the level of aspiration. American Journal of Psychology, 47, 119-128.
- Garland, H. (1983). Influence of ability, assigned goals, and normative information on personal goals and performance: A challenge to the goal attainability assumption. Journal of Applied Psychology, 68, 20-30.
- Greenberg, J. (1985). Unattainable goal choice as a self-handicapping strategy. Journal of Applied Social Psychology, 15, 140-152.
- Harris, R. N. and Snyder, C. R. (1985). The role of uncertain self-esteem in self-handicapping. Unpublished manuscript, University of Kansas, Lawrence.

- Heider, F. (1958). The psychology of interpersonal relations. New York: Wiley.
- Himmelweit, H. (1947). A comparative study of the level of aspiration of normal and of neurotic persons. British Journal of Psychology, 37, 41-59.
- Ivancevich, J. M. (1976). Effects of goal setting on performance and job satisfaction. Journal of Applied Psychology, 61, 605-612.
- Ivancevich, J. M & McMahon, J. (1977). A study of task-goal attributes, higher order need strength and performance. Academy of Management, 20, 552-563.
- Jones, E. E. & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. Personality and Social Psychology Bulletin, 4, 200-206.
- Kolditz, T. A. & Arkin, R. M. (1982). An impression management interpretation of the "self-handicapping strategy." Journal of Personality and Social Psychology, 43, 492-502.
- Komaki, J., Barwick, K. D., & Scott, L. R. (1978). A behavioral approach to occupational safety: Pinpointing and reinforcing safe performance in a food manufacturing plant. Journal of Applied Psychology, 64, 435-445.

- Landy, F. J. (1985). The Psychology of Work Behavior, 3rd Edition. Ill.: The Dorsey Press.
- Latham, G. P. & Locke, E. A. (1975). Increasing productivity with decreasing time limits: A field replication of Parkinson's law. Journal of Applied Psychology, 60, 524-526.
- Latham, G. P. & Marshall, H. A. (1982). The effects of self set, participatively set, and assigned goals on the performance of government employees. Personnel Psychology, 35, 399-404.
- Latham, G. P., Mitchell, T. R., & Dossett, D. L. (1978). Importance of participative goal setting and anticipated rewards on goal difficulty and job performance. Journal of Applied Psychology, 63, 163-171.
- Latham, G. P. & Saari, L. M. (1979). The effects of holding goal difficulty constant on assigned and participatively set goals. Academy of Management Journal, 22, 163-168.
- Latham, G. P. & Yukl, G. A. (1975). A review of research on the application of goal setting in organizations. Academy of Management Journal, 18, 824-845.
- Latham, G. P. & Yukl, G. A. (1976). Effects of assigned and participative goal setting on performance and job satisfaction. Journal of Applied Psychology, 61, 166-171.

- Lawler, E. E. (1968). Equity theory as a predictor of productivity and work quality. Psychological Bulletin, 70, 596-610.
- Lewin, K. (1938). The conceptual representation and the measurement of psychological forces. Contributions to psychological theory. Durham, N. C.: Duke University Press.
- Locke, E. A. (1968). Toward a theory of task motivation and incentives. Organizational Behavior and Human Performance, 3, 157-189.
- Locke, E. A. (1969). Purpose without consciousness: A contradiction. Psychological Reports, 25, 991-1009.
- Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969-1980. Psychological Bulletin, 90, 125-152.
- Lopes, L. L. (1976). Individual strategies in goal-setting. Organizational Behavior and Human Performance, 15, 268-277.
- Matsui, T., Okada, A., & Inoshita, O. (1983). Mechanism of feedback affecting task performance. Organizational Behavior and Human Performance, 31, 114-122.
- Mento, A. J., Cartledge, N. D., & Locke, E. A. (1980). Maryland vs. Michigan vs. Minnesota: Another look at the relationship of expectancy and goal difficulty to task performance. Organizational Behavior and Human



Performance, 25, 419-440.

Rhodewalt, F. & Davison, J. (1984). Self-handicapping and subsequent performance: The role of outcome valence and attributional uncertainty. Unpublished manuscript, University of Utah, Salt Lake City.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, New Jersey: Princeton University Press.

Ryan, T. A. (1970). Intentional behavior. New York: Ronald Press.

Sachs, P. R. (1982). Avoidance of diagnostic information in self-evaluation of ability. Personality and Social Psychology Bulletin, 8, 242-246.

Smith, T. W., Snyder, C. R., & Handelsman, M. M. (1982). On the self-serving function of an academic wooden leg. Journal of Personality and Social Psychology, 42, 314-321.

Smith, T. W., Snyder, C. R., & Perkins, S. (1983). The self-serving function of hypochondriacal complaints: Physical symptoms as self-handicapping strategies. Journal of Personality and Social Psychology, 44, 787-797.

Snyder, C. R. & Smith, T. W. (1982). Symptoms as self-handicapping strategies: The virtues of old wine in a new bottle. In G. Weary & H. Mirels (Eds.), Integration of clinical and social psychology.

New York: Oxford University Press.

Strang, H. R., Lawrence, E. C., & Fowler, P. C. (1978).

Effects of assigned goal level and knowledge of results on arithmetic computation: A laboratory study. Journal of Applied Psychology, 63, 446-450.

Terborg, J. R. (1976). The motivational components of goal setting. Journal of Applied Psychology, 61, 613-621.

Terborg, J. R. & Miller, H. E. (1978). Motivation, behavior, and performance: A closer examination of goal setting and monetary incentives. Journal of Applied Psychology, 63, 29-39.

Trope, Y. (1979). Uncertainty-reducing properties of achievement tasks. Journal of Personality and Social Psychology, 37, 1505-1518.

Trope, Y. & Brickman, P. (1975). Difficulty and diagnosticity as determinants of choice among tasks. Journal of Personality and Social Psychology, 31, 918-925.

Tucker, J. A., Vuchinich, R. E., & Sobell, M. B. (1981). Alcohol consumption as a self-handicapping strategy. Journal of Abnormal Psychology, 90, 220-230.

Yukl, G. & Latham, G. (1978). Interrelationships among employee participation, individual differences, goal difficulty, goal acceptance, goal instrumentality, and performance. Personnel Psychology, 31, 305-323.

## **APPENDICES**

**APPENDIX A**  
**ROSENBERG SELF-ESTEEM INVENTORY**

## SELF REACTIONS

Please answer the following questions using the scale below:

1	2	3	4
STRONGLY AGREE			STRONGLY DISAGREE

1. I'm very confident that future success in my chosen career is assured.
2. I often feel upset at the work that I do.
3. I'm not that proud of my schoolwork.
4. Failure just makes me try harder.
5. When trying to learn something new, I soon give up if not successful.
6. When I set important goals for myself, I usually achieve them.
7. I rarely get discouraged at what I'm doing.
8. It is hard for me to make new friends.
9. I feel insecure about my ability to do things.
10. Failure usually makes me give up.

**APPENDIX B**  
**SYNTHETIC ABILITY TEST**  
**NONCONTINGENT SUCCESS VERSION**

## SYNTHETIC ABILITY TEST

## FORM NCS-1

DIRECTIONS: COMPLETE THE FOLLOWING ANALOGIES BY WRITING THE CORRECT LETTER ON YOUR BLANK PIECE OF PAPER FOR EACH OF THE NINETEEN ITEMS. DO NOT WRITE ON YOUR TEST SHEET. FOR EACH ITEM AFTER THE SAMPLE ITEM, PLEASE WRITE YOUR CERTAINTY RATING NEXT TO YOUR WORD CHOICE LETTER.

PRACTICE TRIAL:

\_\_\_\_\_ : TALK :: SCRAWL : WRITE

- a) ORATE
- b) TRANSLATE
- c) MUMBLE
- d) SPEAK

RATE HOW CERTAIN YOU ARE THAT YOUR ANSWER IS CORRECT.  
(indicate by writing a number on your blank sheet)

1      2      3      4      5      6      7      8      9      10

VERY  
UNCERTAIN

VERY  
CERTAIN

1)

SUBSTITUTE : TEAM :: UNDERSTUDY \_\_\_\_\_

- a) CREW
- b) CONGREGATION
- c) ACTOR
- d) CAST

2)

JAPE : FOUNDLING :: JOKE : \_\_\_\_\_

- a) SLAVE
- b) SUFFRAGETTE
- c) STUDENT
- d) ACTOR

3)

BROGUE:FOOT::SHEATH:\_\_\_\_\_

- a) EPEE
- b) COMPASS
- c) ESCUTCHEON
- d) TENDON

4)

TRINIDAD:AUTOCRACY::BAGATELLE:\_\_\_\_\_

- a) PATRIARCHY
- b) MINION
- c) NETTON
- d) SCINTILLA

5)

ETIOLOGY:SYMPTOM::SCATOLOGY:\_\_\_\_\_

- a) FATAL
- b) ABREACTION
- c) SUBLOCUTION
- d) REJOINDER

6)

ENERGY:CONDUCTION::SYNERGY:\_\_\_\_\_

- a) INDUCTION
- b) DEDUCTION
- c) REDUCTION
- d) TRANSDUCTION

7)

SCIMITAR:MOROCCO::WINLIN:\_\_\_\_\_

- a) EGYPT
- b) TURKEY
- c) PAKISTAN
- d) CRETE



8)

CROWN:ROYAL::\_\_\_\_\_:RELIGIOUS

- a) PRAYER
- b) CRUCIFIX
- c) PRIESTHOOD
- d) BIBLE

9)

TERRIFIC:TERROR::SOPORIFIC:\_\_\_\_\_

- a) JOY
- b) BOREDOM
- c) RANCOR
- d) STUPIDITY

10)

TRUTH:TINCTURE::TRANSMIGRATION:\_\_\_\_\_

- a) AMENTIA
- b) SUFFUSE
- c) CONSTRAIN
- d) MYSTIC

11)

DOCILE:DOMESTIC::ALIEN:\_\_\_\_\_

- a) CRONIN
- b) MASTIC
- c) SALEMIC
- d) PORTIAL

12)

PANDEMIC:EMOTION::OBSTREPEROUS:\_\_\_\_\_

- a) THOUGHT
- b) CONSCIOUSNESS
- c) IMPAVID
- d) LUCID

13)

SARDONIC:WIT::SYLEPSIC:\_\_\_\_\_

- a) RHETORIC
- b) TURGID
- c) SYNONYM
- d) SAINTHOOD

14)

DEMOGRAPHY: SCHOLAR::ESCROW:\_\_\_\_\_

- a) EXPADRILLE
- b) HOMESPUN
- c) CONTUMACIOUS
- d) EMPATHY

15)

SILENCE:\_\_\_\_\_::LIE:FIB

- a) MUFFLE
- b) CRY
- c) HEAR
- d) SPEAK

16)

OCCLUSION: JUROR::REPROBATE:\_\_\_\_\_

- a) CONTINENCE
- b) SCIATICA
- c) TUMBRIL
- d) SPEECH

17)

ABACUS: RECIPROCAL::ACUMEN:\_\_\_\_\_

- a) INEFFABLE
- b) STRUCTURAL
- c) VICTUAL
- d) GRAVID

18)

COMMENSURAL: ANXIETY:: CONJECTURAL:\_\_\_\_\_

- a) HYSTERIA
- b) PHILIA
- c) COLLATERAL
- d) ERRATA

**APPENDIX C**  
**SYNTHETIC ABILITY TEST**  
**CONTINGENT SUCCESS VERSION**

## SYNTHETIC ABILITY TEST

## FORM CS-1

DIRECTIONS: COMPLETE THE FOLLOWING ANALOGIES BY WRITING THE CORRECT LETTER ON YOUR BLANK PIECE OF PAPER FOR EACH OF THE NINETEEN ITEMS. DO NOT WRITE ON YOUR TEST SHEET. FOR EACH ITEM AFTER THE SAMPLE ITEM, PLEASE WRITE YOUR CERTAINTY RATING NEXT TO YOUR WORD LETTER CHOICE.

## PRACTICE TRIAL:

\_\_\_\_\_ : STREAM :: BRIDGE : RIVER

- a) FJORD
- b) FORD
- c) FOERD
- d) AFFORD

RATE HOW CERTAIN YOU ARE THAT YOUR ANSWER IS CORRECT.  
(indicate by writing a number on your blank sheet)

1      2      3      4      5      6      7      8      9      10

VERY  
UNCERTAIN

VERY  
CERTAIN

1)

\_\_\_\_\_ : TALK :: SCRAWL : WRITE

- a) ORATE
- b) TRANSLATE
- c) MUMBLE
- d) SPEAK

2)

CROWN : ROYAL :: \_\_\_\_\_ RELIGIOUS

- a) PRAYER
- b) CRUCIFIX
- c) PRIESTHOOD
- d) BIBLE

3)

DREDGE: \_\_\_\_\_ :: SCOOP: ICE CREAM

- a) CHANNEL
- b) BARGE
- c) HARBOR
- d) SILT

4)

LIFT: ELEVATOR :: \_\_\_\_\_ : GASOLINE

- a) OIL
- b) LIGHT
- c) PETROL

5)

SLIP: SLIDE :: FALL: \_\_\_\_\_

- a) BREAK
- b) DITCH
- c) JUMP
- d) HOVER

6)

SUBSTITUTE: TEAM :: UNDERSTUDY: \_\_\_\_\_

- a) CREW
- b) CONGREGATION
- c) ACTOR
- d) CAST

7)

SELDOM: FREQUENTLY :: ETERNALLY: \_\_\_\_\_

- a) NEVER
- b) OCCASIONALLY
- c) IRREGULARLY
- d) NOW AND THEN

8)

SILENCE: \_\_\_\_\_ :: LIE: FIB

- a) MUFFLE
- b) CRY
- c) HEAR
- d) SPEAK

9)

SHERRY:BEER::PORT:\_\_\_\_\_

- a) CHAMPAGNE
- b) SAUTERNE
- c) CLARET
- d) MUSCATEL

10)

BEND:ELBOW::\_\_\_\_\_:CAT

- a) TURN
- b) DISSECT
- c) SKIN
- d) DIVIDE

11)

HORSE:\_\_\_\_\_:CENTAUR:SATYR

- a) MAN
- b) GOAT
- c) ARCHER
- d) BULL

12)

ORGANISM:\_\_\_\_\_:LIGHT:WAVE

- a) PLANT
- b) ANIMAL
- c) BACTERIA
- d) CELL

13)

GARROTING:DEATH::FRICTION:\_\_\_\_\_

- a) RUBBING
- b) LUBRICANT
- c) HEAT
- d) SLAUGHTER

14)

EPISTEMOLOGY: \_\_\_\_\_ :: PALEONTOLOGY: FOSSILS

- a) AUTHORS
- b) WEAPONS
- c) KNOWLEDGE
- d) ROOTS

15)

BROGUE: FOOT :: SHEATH: \_\_\_\_\_

- a) EPEE
- b) COMPASS
- c) ESCUTCHEON
- d) TENDON

16)

\_\_\_\_\_ : DENIM :: GULP : PLUG

- a) MINED
- b) MINOR
- c) MINER
- d) CANVAS

17)

RUBY: TOMATO :: \_\_\_\_\_ EMERALD

- a) ROSE
- b) ASSASSIN
- c) PEACH
- d) SHAMROCK

18)

SCIMITAR: MOROCCO :: WINLIN: \_\_\_\_\_

- a) EGYPT
- b) TURKEY
- c) PAKISTAN
- d) CRETE

APPENDIX D  
GOAL CHOICE FORM



DIRECTIONS: PLEASE CIRCLE THE TEST FORM THAT YOU WISH TO WORK ON DURING THE SECOND PHASE OF THIS STUDY. PLEASE NOTE THE PERCENTAGE OF PREVIOUS SUBJECTS WHO SOLVED THE PUZZLE CORRECTLY. ALSO, NOTE THE DIAGNOSTICITY RATING THAT HAS BEEN GIVEN TO EACH PUZZLE AND SELECT THE PUZZLE YOU WISH TO WORK ON ACCORDINGLY. BECAUSE WE HAVE NUMEROUS FORMS OF THE TEST AND NEED DATA FOR EACH, YOU CAN SELECT WHICH TEST YOU WORK ON BY CIRCLING THE TEST FORM.

<u>TEST FORM</u>	<u>DIAGNOSTICITY RATING</u>	<u>PERCENTAGE OF SUBJECTS WHO HAVE CORRECTLY SOLVED EACH PUZZLE</u>
2	Very Low	10%
3	Low	20%
4	Moderate	30%
5	Moderately high	40%
6	High	50%
7	Moderately high	60%
8	Moderate	70%
9	Low	80%
10	Very low	90%

APPENDIX E  
GRID PUZZLE

## INSTRUCTIONS:

Please examine the example below. It is a Scrabble-like grid that was constructed using each of these letters only once: A, E, M, N, P, S, B, T, I, and O. Each of the words is connected to another word so that the grid is continuous. And, note that each letter can only be used ONCE.

B  
MEN  
A  
TIPS  
O

Your task is to make a similar grid using as many letters as you possibly can from the entire alphabet. Remember that each letter can only be used ONCE. Also, no proper names are allowed (such as John or Mary). The alphabet is listed below so that you can keep track of the letters you have used. Construct your grid on this piece of paper and remember you are to use as many letters as possible; the number of words is not important. Any questions? Please work on the task until I tell you to stop.

A, B, C, D, E, F, G, H, I, J, K, L, M,  
N, O, P, Q, R, S, T, U, V, W, X, Y, Z.

**APPENDIX F**  
**MIDPOINT QUESTIONNAIRE**

## MIDPOINT QUESTIONNAIRE

The following questions are designed to allow you to share your thoughts, feelings, and attitudes about your experience in our research program. Please answer them as honestly as possible. Your responses to this questionnaire are confidential. Please do not put your name on this questionnaire.

1. How difficult did you find the first test?

1        2        3        4        5        6        7        8        9        10

Extremely  
easy

Extremely  
difficult

2. To what factors do you attribute your score on the first test?

1        2        3        4        5        6        7        8        9        10

Luck  
only

Ability  
and luck

Ability  
only

3. At this point in the study, how nervous or relaxed do you feel?

1        2        3        4        5        6        7        8        9        10

Extremely  
nervous

Extremely  
relaxed

4. How do you rate your performance on the first test relative to the average experimental participant?

1        2        3        4        5        6        7        8        9        10

Far below  
average

The  
same

Far above  
average

5. How do you expect to perform on the upcoming test, relative to your performance on the first test?

1	2	3	4	5	6	7	8	9	10
Much worse than before				The same			Much better than before		

6. To what factors do you suppose the experimenter attributes your performance on the first test?

1	2	3	4	5	6	7	8	9	10
Luck only				Ability and luck			Ability only		

7. How do you think the experimenter expects you to perform on the upcoming test, relative to your performance on the first test?

1	2	3	4	5	6	7	8	9	10
Much worse than before				The same			Much better than before		

8. Please estimate how the experimenter would rate the first test, in terms of difficulty?

1	2	3	4	5	6	7	8	9	10
Extremely easy							Extremely difficult		

9. To what degree will your score on the upcoming test be influenced by your choice of puzzle?

1	2	3	4	5	6	7	8	9	10
No influence							Great influence		

10. Which test form did you choose?

2	4	5	6	7	8	9	10
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**APPENDIX G**  
**FINAL QUESTIONNAIRE**

## FINAL QUESTIONNAIRE

Like the Midpoint Questionnaire, the following questions are designed to allow you to share your thoughts, feelings, and attitudes about your experiences in our research program. Please answer them as honestly as possible. Your responses to this questionnaire are confidential. Do not put your name on this questionnaire.

1. To what extent did you find the experiment enjoyable?

1        2        3        4        5        6        7        8        9        10

Not at all  
enjoyable

Highly  
enjoyable

2. To what extent were you comfortable in the laboratory conditions provided?

1        2        3        4        5        6        7        8        9        10

Very  
uncomfortable

Very  
comfortable

3. How courteous was the experimenter?

1        2        3        4        5        6        7        8        9        10

Very  
Courteous

Discourteous  
and rude

4. For the second test, how much choice did you have over how difficult the task would be?

1        2        3        4        5        6        7        8        9        10

No  
choice

Complete  
choice



5. Do you feel that your behavior in this study was/is private and anonymous or was/is it shared and scrutinized?

1        2        3        4        5        6        7        8        9        10

Absolutely  
private and  
anonymous

Private

Completely  
shared and  
scrutinized

6. How much information about your performance would a difficult task provide you?

1        2        3        4        5        6        7        8        9        10

Very  
little

Very  
much

7. How much information about your performance would an easy task provide you?

1        2        3        4        5        6        7        8        9        10

Very  
much

Very  
little

8. How much information about your performance would a task of medium difficulty provide you?

1        2        3        4        5        6        7        8        9        10

Very  
much

Very  
little

9. How did you feel just prior to working on the second test?

1        2        3        4        5        6        7        8        9        10

Apprehensive  
about doing  
poorly

Neutral

Eager to  
do well

10. How likely is it that the experimenter will know your name?

1	2	3	4	5	6	7	8	9	10
not very likely								very likely	

11. How likely is it that the experimenter will know how well you did on the second test?

1	2	3	4	5	6	7	8	9	10
not very likely								very likely	

12. If you had chosen a difficult goal for the second test (that is, a difficult puzzle), to what factors would you attribute your performance?

1	2	3	4	5	6	7	8	9	10
Luck only				Ability and luck			Ability only		

13. If you had chosen a moderate goal for the second test (that is, a moderate puzzle), to what factors would you attribute your performance?

1	2	3	4	5	6	7	8	9	10
Luck only				Ability and luck			Ability only		

14. If you had chosen an easy goal for the second test (that is, an easy puzzle), to what factors would you attribute your performance?

1	2	3	4	5	6	7	8	9	10
Luck only				Ability and luck			Ability only		

15. How much effort did you put forth on the second test?

1	2	3	4	5	6	7	8	9	10
Little effort								Much effort	

16. How much effort did you put forth on the second test?

1      2      3      4      5      6      7      8      9      10

Little  
effort

Much  
effort

17. What is the purpose of this study?

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18. Can you think of any other purposes? If so, please state them below.

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19. Please explain your reasons for choosing the goal that you chose (that is, the puzzle that you chose to work on). On what factors did you base your selection?

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**APPENDIX H**  
**CONSENT FORM**

## VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

PRINT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SOCIAL SECURITY NUMBER: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

I the undersigned hereby consent to participate in this study examining opinions about testing and test validation directed by Dr. Ann H. Baumgardner.

I understand that no negative consequences are expected to result from this participation.

I further understand that I will be debriefed fully about the extent of my participation, how the results will be used, and the nature and extent of feedback subsequent to participating.

I understand that my participation is voluntary and I may terminate it at any time. As a result of my participation I am to be credited with one (1) bonus point to my psychology 2000 course grade or some other comparable psychology course. I also understand that I am not to discuss this experiment with anyone for five months.

SIGNATURE: \_\_\_\_\_

If after participating in this experiment you have any concerns regarding the research, you may contact the researchers at the phone numbers listed below or the Human Subjects Committee.

Researchers

Dr. Ann H. Baumgardner 961-7030

Paul E. Levy 961-6279

Human Subjects Committee Chairperson:

Dr. Stephen Zaccaro x-7916

**APPENDIX I**  
**GENERAL DESCRIPTION AND INSTRUCTIONS**

Today, we have two things for you to do. First, we are interested in validating a test that is designed to measure a new concept in intelligence testing known as Synthetic Ability. By validate we mean that we want to try and show that the test we've constructed actually measures the construct (synthetic ability), that we believe it measures. Research on this ability has indicated that it plays a role in peoples' aptitude in academic settings (like college). Because his ability has only recently received attention, we are developing two tests that can accurately assess it. Last semester, we did find that subjects who did well on a similar test of Synthetic Ability had significantly higher grades and were more likely to continue college enrollment.

Secondly, as I mentioned, we are trying to validate a test and that means we have a few different sets of tests. We will be asking you to complete two sets of items. The first test has been used in similar studies, but you will probably find the second test more entertaining because you will be able to select the task difficulty yourself. For the second test, we have a series of nine puzzles that vary in difficult. You will be allowed to choose which puzzle you will try to solve since we need data on each of them anyway.

To sum things up for you, you will first complete a pretest which is pretty standard: it consists of 18 items (all analogies) of moderate difficulty that are designed to measure Synthetic Ability. Do not expect to get very many right on this test. More specifically, -- in pilot studies of undergraduates, subjects have typically not done better than 10 out of 18 correct in the allotted time. After that you will choose which puzzle you would like to work on. When you finish working on that puzzle some questionnaires will be administered. Any questions?

**APPENDIX J**  
**CONFIRMATION OF DEBRIEFING**



## Confirmation of Debriefing

I understand that the purpose of this experiment was to examine what types of goals individuals set after performance and the administration of performance feedback. Another purpose was to investigate the effect of the goal choice on performance.

Most important, I realize that the feedback I received was false. That is, my performance on the first test was not evaluated and the feedback was an experimental manipulation rather than a report of my true performance. Also, my name is immediately removed from all experimental materials so as to preserve confidentiality. All data is coded and analyzed by my number rather than my name.

I understand that any discussion of this research with other students could lead to the contamination of the results of this research, and I agree to refrain from discussing this research for at least 5 months.

SIGNED \_\_\_\_\_

DATE \_\_\_\_\_

APPENDIX K

SUMMARY TABLES FOR MANIPULATION CHECKS

Table K-1

Summary of ANOVA for Difficulty of Analogy Task

Source	SS	df	F
Esteem (E)	22.96	1	9.86*
Feedback (F)	150.01	1	64.43**
Eval. M. (EM)	1.43	1	.62
Sex (S)	.07	1	.03
E x F	.93	1	.40
E x EM	.50	1	.21
E x S	5.00	1	2.15
F x EM	4.38	1	1.88
F x S	2.93	1	1.26
EM x S	.45	1	.19
E x F x EM	2.94	1	1.26
E x F x S	.04	1	.02
E x EM x S	6.86	1	2.95
F x EM x S	1.57	1	.67
E x F x EM x S	.79	1	.34
Error	430.74	185	
Total	631.59	200	

\*  $p < .005$ \*\*  $p < .0001$

Table K-2

Summary of ANOVA for Experimenter's Rating of Difficulty

Source	SS	df	F
Esteem (E)	.19	1	.09
Feedback (F)	27.39	1	12.61*
Eval. M. (EM)	3.32	1	1.53
Sex (S)	.52	1	.24
E x F	.10	1	.04
E x EM	2.28	1	1.05
E x S	2.20	1	1.01
F x EM	1.07	1	.49
F x S	.59	1	.27
EM x S	2.97	1	1.37
E x F x EM	2.62	1	1.21
E x F x S	.13	1	.06
E x EM x S	.57	1	.26
F x EM x S	.31	1	.14
E x F x EM x S	.23	1	.11
Error	401.76	185	
Total	446.25	200	

\*  $p < .0005$

Table K-3

Summary of ANOVA for Luck Attributions on Analogy Task

Source	SS	df	F
Esteem (E)	4.34	1	1.53
Feedback (F)	124.40	1	43.92**
Eval. M. (EM)	4.87	1	1.72
Sex (S)	11.71	1	4.13*
E x F	10.99	1	3.88
E x EM	.32	1	.11
E x S	4.23	1	1.49
F x EM	1.37	1	.48
F x S	2.22	1	.78
EM x S	.49	1	.17
E x F x EM	3.17	1	1.12
E x F x S	.41	1	.15
E x EM x S	1.47	1	.52
F x EM x S	5.65	1	2.00
E x F x EM x S	.83	1	.29
Error	523.99	185	
Total	700.49	200	

\*  $p < .05$ \*\*  $p < .0001$

Table K-4

Summary of ANOVA for Experimenter's Luck Attributions

Source	SS	df	F
Esteem (E)	1.03	1	.52
Feedback (F)	65.53	1	33.11**
Eval. M. (EM)	.69	1	.35
Sex (S)	.82	1	.41
E x F	8.63	1	4.36*
E x EM	.90	1	.45
E x S	.82	1	.42
F x EM	.74	1	.38
F x S	.25	1	.13
EM x S	1.45	1	.73
E x F x EM	.12	1	.06
E x F x S	1.15	1	.58
E x EM x S	1.36	1	.69
F x EM x S	8.38	1	4.24*
E x F x EM x S	2.27	1	1.15
Error	366.10	185	
Total	360.24	200	

\*  $p < .05$ \*\*  $p < .0001$

Table K-5

Feedback Manipulation Checks (Means)

Manipulation Check Item	Feedback	
	Contingent	Noncontingent
Degree of difficulty	5.99a	7.77b
Estimation of experimenter's rating of degree of difficulty	6.80a	7.53b
Luck attributions	6.44a	4.85b
Estimation of experimenter's luck attributions	6.09a	4.94b

Note. High numbers indicate more agreement with the item. Means with common letters, for each item, do not differ at the  $p < .0005$  level of significance.

Table K-6

Summary of ANOVA for Rating of Puzzle Performance as Public

Source	SS	df	F
Esteem (E)	7.26	1	1.75
Feedback (F)	5.11	1	1.23
Eval. M. (EM)	87.35	1	21.05**
Sex (S)	3.68	1	.89
E x F	.28	1	.07
E x EM	1.13	1	.27
E x S	3.80	1	.92
F x EM	2.81	1	.68
F x S	6.58	1	1.59
EM x S	9.20	1	2.22
E x F x EM	.44	1	.11
E x F x S	.05	1	.01
E x EM x S	31.13	1	7.50*
F x EM x S	14.07	1	3.39
E x F x EM x S	.12	1	.03
Error	763.54	184	
Total	936.56	199	

\*  $p < .01$ \*\*  $p < .0001$



Table K-7

Summary of ANOVA for the Likelihood that the Experimenter  
would Know the Subjects' Names

Source	SS	df	F
Esteem (E)	1.15	1	.17
Feedback (F)	.04	1	.01
Eval. M. (EM)	386.50	1	57.22*
Sex (S)	7.44	1	1.10
E x F	2.84	1	.42
E x EM	.13	1	.02
E x S	.01	1	.01
F x EM	4.13	1	.61
F x S	.88	1	.13
EM x S	.93	1	.14
E x F x EM	.94	1	.14
E x F x S	7.73	1	1.14
E x EM x S	3.96	1	.59
F x EM x S	.73	1	.11
E x F x EM x S	2.83	1	.42
Error	1249.67	185	
Total	1669.92	200	

\*  $p < .0001$

Table K-8

Summary of ANOVA for the Likelihood that the Experimenter  
will Know how well the Subjects Performed on the Puzzle

Source	SS	df	F
Esteem (E)	.44	1	.08
Feedback (F)	4.33	1	.84
Eval. M. (EM)	1147.65	1	222.62**
Sex (S)	.05	1	.01
E x F	.15	1	.03
E x EM	4.12	1	.80
E x S	2.50	1	.48
F x EM	1.81	1	.35
F x S	22.27	1	4.32*
EM x S	5.40	1	1.05
E x F x EM	.63	1	.12
E x F x S	1.34	1	.26
E x EM x S	6.42	1	1.24
F x EM x S	4.15	1	.81
E x F x EM x S	.36	1	.07
Error	948.58	184	
Total	2150.20	199	

\*  $p < .05$

\*\*  $p < .0001$

Table K-9

Evaluation Mode Manipulation Checks (Means)

Manipulation Check Item	Evaluation Mode	
	Public	Private
Rating of behavior as shared	4.23a	2.88b
Likelihood rating that experimenter would know subject's name	5.69a	2.92b
Likelihood rating that experimenter would know how well subject performed	7.17a	2.38b

Note. Higher numbers indicate more agreement with the item. Means with common letters, for each item, do not differ at the  $p < .0001$  level of significance.

Table K-10

Summary of ANOVA for Diagnosticity Rating of Difficult Tasks

Source	SS	df	F
Esteem (E)	3.65	1	.51
Feedback (F)	.20	1	.00
Eval. M. (EM)	2.12	1	.28
Sex (S)	1.46	1	.20
E x F	3.58	1	.50
E x EM	6.41	1	.89
E x S	5.07	1	.71
F x EM	12.28	1	1.71
F x S	8.82	1	1.23
EM x S	.02	1	.00
E x F x EM	.26	1	.04
E x F x S	5.54	1	.77
E x EM x S	.56	1	.08
F x EM x S	26.10	1	3.63
E x F x EM x S	.63	1	.09
Error	1314.56	183	
Total	1390.97	198	

Table K-11

Summary of ANOVA for Diagnosticity Rating of Moderate Tasks

Source	SS	df	F
Esteem (E)	18.80	1	3.79
Feedback (F)	.91	1	.18
Eval. M. (EM)	3.76	1	.76
Sex (S)	.06	1	.01
E x F	.43	1	.09
E x EM	1.45	1	.29
E x S	20.53	1	4.14*
F x EM	4.03	1	.81
F x S	1.22	1	.25
EM x S	6.68	1	.25
E x F x EM	.01	1	.00
E x F x S	10.80	1	2.18
E x EM x S	24.35	1	4.91*
F x EM x S	1.38	1	.28
E x F x EM x S	2.74	1	.46
Error	917.87	185	
Total	1015.02	200	

\*  $p < .05$

Table K-12

Summary of ANOVA for Diagnosticity Rating of Easy Tasks

Source	SS	df	F
Esteem (E)	.61	1	.08
Feedback (F)	.52	1	.06
Eval. M. (EM)	1.22	1	.15
Sex (S)	25.12	1	3.13
E x F	5.14	1	.64
E x EM	.04	1	.01
E x S	10.34	1	1.29
F x EM	9.62	1	1.20
F x S	27.46	1	3.42
EM x S	34.08	1	4.25*
E x F x EM	2.60	1	.32
E x F x S	3.17	1	.39
E x EM x S	1.32	1	.16
F x EM x S	.29	1	.04
E x F x EM x S	.35	1	.04
Error	1484.50	185	
Total	1606.37	200	

\*  $p < .05$

Table K-13

Summary of ANOVA for Attributions about a Difficult Task

Source	SS	df	F
Esteem (E)	17.34	1	3.56
Feedback (F)	.09	1	.02
Eval. M. (EM)	3.76	1	.77
Sex (S)	11.97	1	2.46
E x F	.83	1	.17
E x EM	13.37	1	2.75
E x S	7.28	1	1.49
F x EM	1.24	1	.25
F x S	.24	1	.05
EM x S	1.72	1	.35
E x F x EM	2.50	1	.51
E x F x S	1.37	1	.28
E x EM x S	.56	1	.12
F x EM x S	34.48	1	7.08*
E x F x EM x S	.01	1	.00
Error	896.57	184	
Total	993.36	199	

\*  $p < .01$

Table K-14

Summary of ANOVA for Attributions about Moderate Tasks

Source	SS	df	F
Esteem (E)	4.51	1	1.60
Feedback (F)	.17	1	.06
Eval. M. (EM)	1.31	1	.46
Sex (S)	20.39	1	7.22**
E x F	1.30	1	.46
E x EM	14.39	1	5.10*
E x S	.18	1	.07
F x EM	.02	1	.01
F x S	.37	1	.13
EM x S	2.57	1	.91
E x F x EM	.83	1	.29
E x F x S	.24	1	.09
E x EM x S	.08	1	.03
F x EM x S	3.78	1	1.34
E x F x EM x S	.15	1	.05
Error	519.59	184	
Total	569.88	199	

\*  $p < .05$ \*\*  $p < .01$



Table K-15

Summary of ANOVA for Attributions about Easy Tasks

Source	SS	df	F
Esteem (E)	.78	1	.25
Feedback (F)	.01	1	.00
Eval. M. (EM)	.00	1	.00
Sex (S)	10.45	1	3.32
E x F	.00	1	.00
E x EM	8.86	1	2.82
E x S	.64	1	.20
F x EM	1.61	1	.51
F x S	3.28	1	1.04
EM x S	4.91	1	1.56
E x F x EM	4.96	1	1.58
E x F x S	.03	1	.01
E x EM x S	2.51	1	.80
F x EM x S	.00	1	.00
E x F x EM x S	1.65	1	.53
Error	575.51	183	
Total	615.20	198	

Table K-16

Mean Ratings of Diagnosticity and Attributions for Tasks of Varying Difficulty

Ratings	Task		
	Easy	Moderate	Difficult
Diagnosticity	2.78a	5.74b	4.62c
Ability Attributions	8.45a	7.33b	6.39c

Note. Higher numbers indicate more agreement with the item. Means with common letters for each class of ratings, do not differ at the  $p < .0001$  level of significance.

**APPENDIX L**  
**SUMMARY TABLES FOR DEPENDENT VARIABLES**

Table L-1

Summary of ANOVA for Goal Choice

Source	SS	df	F
Esteem (E)	13.49	1	5.85*
Feedback (F)	2.28	1	.99
Eval. M. (EM)	.01	1	.01
Sex (S)	43.66	1	18.93**
E x F	3.22	1	1.40
E x EM	.27	1	.12
E x S	1.70	1	.74
F x EM	.21	1	.09
F x S	5.23	1	2.27
EM x S	2.78	1	1.21
E x F x EM	13.10	1	5.68*
E x F x S	1.26	1	.55
E x EM x S	.60	1	.61
F x EM x S	1.37	1	.60
E x F x EM x S	.18	1	.08
Error	426.62	185	
Total	515.98	200	

\*  $p < .05$ \*\*  $p < .0001$

Table L-2

Goal Choice Means for all Subjects as a Function of  
Experimental Condition

	Sex							
	Male				Female			
	Self-Esteem				Self-Esteem			
	High		Low		High		Low	
	Evaluation		Evaluation		Evaluation		Evaluation	
Feedback	Priv	Pub	Priv	Pub	Priv	Pub	Priv	Pub
CS	4.69 (13)	4.13 (16)	5.50 (8)	5.55 (9)	5.41 (17)	5.33 (12)	5.00 (10)	6.31 (13)
NCS	4.25 (8)	4.94 (16)	5.30 (10)	4.55 (11)	5.55 (18)	6.27 (11)	6.33 (12)	5.88 (17)

Note. CS stands for Contingent Feedback and NCS stands for Noncontingent Feedback. Higher numbers connote easier goal choice. Cell sizes are in parentheses under the goal choice means.

Table L-3

Goal Choice Means for all Subjects as a Function of Esteem,  
Evaluation Mode, and Feedback

Self-Esteem					
		High		Low	
		Evaluation Mode		Evaluation Mode	
Feedback		Private	Public	Private	Public
Contingent		5.10a	4.64a	5.22ab	6.00b
Noncontingent		5.15ab	5.48b	5.86ab	5.36b

Note. Higher numbers connote easier goal choice. Means with common letters do not differ at the  $p < .05$  level of significance.

Table L-4

Goal Choice Means of Male Subjects as a Function of Esteem,  
Evaluation Mode, and Feedback

	Feedback			
	Contingent		Noncontingent	
	Evaluation Mode		Evaluation Mode	
	Private	Public	Private	Public
High	4.69a	4.13a	4.25a	4.94ab
Low	5.50abc	5.55c	5.30abc	4.55b

Note. Higher numbers connote easier goal choice. Means with common letters do not differ at the  $p < .057$  level of significance.

Table L-5

Goal Choice Means of Female Subjects as a Function of  
Esteem, Evaluation Mode, and Feedback

	Feedback			
	Contingent		Noncontingent	
	Evaluation Mode		Evaluation Mode	
	Private	Public	Private	Public
Self-Esteem				
High	5.41a	5.33ac	5.55ac	6.27a
Low	5.00a	6.31bc	6.33bc	5.88ab

Note. Higher numbers connote easier goal choice. Means with common letters do not differ at the  $p < .05$  level of significance.



Table L-6

Summary of ANOVA for Performance Expectations

Source	SS	df	F
Esteem (E)	2.81	1	1.82
Feedback (F)	2.63	1	1.70
Eval. M. (EM)	6.37	1	4.11*
Sex (S)	2.90	1	1.87
E x F	3.94	1	2.55
E x EM	.37	1	.24
E x S	2.25	1	1.45
F x EM	.10	1	.07
F x S	6.19	1	4.00*
EM x S	.08	1	.05
E x F x EM	.08	1	.05
E x F x S	3.04	1	1.96
E x EM x S	.00	1	.00
F x EM x S	2.69	1	1.74
E x F x EM x S	.96	1	.62
Error	286.47	185	
Total	320.90	200	

\*  $p < .05$

Table L-7

Subjects' Performance Expectations as a Function of Sex and Feedback

Feedback	Sex	
	Male	Female
Contingent	5.77b	5.65b
Noncontingent	5.11a	5.72b

Note. Higher numbers connote higher performance expectations. Means with common letters do not differ at the  $p < .05$  level of significance.

Table L-8

Performance Expectations of Male Subjects as a Function of  
Esteem and Feedback

Self-Esteem	Feedback	
	Contingent	Noncontingent
High	5.70b	5.54b
Low	5.88b	4.60a

Note. Higher numbers connote higher performance expectations. Means with common letters do not differ at the  $p < .05$  level of significance.

Table L-9

Performance Expectations of Male Subjects as a Function of  
Esteem, Evaluation Mode, and Feedback

	Feedback			
	Contingent		Noncontingent	
	Evaluation Mode		Evaluation Mode	
	Private	Public	Private	Public
High	5.79a	5.63a	5.89a	5.38a
Low	5.88ab	5.89a	5.10ab	4.10b

Note. Higher numbers connote higher performance expectations. Means with common letters do not differ at the  $p < .05$  level of significance.

Table L-10

Correlations between Goal Choice and PerformanceExpectations for each Experimental Condition

	Sex							
	Male				Female			
	Self-Esteem				Self-Esteem			
	High		Low		High		Low	
	Evaluation		Evaluation		Evaluation		Evaluation	
Feedback	Priv	Pub	Priv	Pub	Priv	Pub	Priv	Pub
CS	-.17	.34	.18	-.15	-.09	.46	-.23	.26
NCS	.70	.16	-.15	.79*	.28	.24	.82*	.20

Note. CS stands for Contingent Feedback and NCS stands for Noncontingent Feedback.

\*  $p < .05$

Table L-11

Summary of ANOVA for Performance

Source	SS	df	F
Esteem (E) <sup>1</sup>	8.72	1	.61
Feedback (F)	.24	1	.02
Eval. M. (EM)	2.89	1	.20
Sex (S)	12.48	1	.87
E x F	6.20	1	.43
E x EM	19.36	1	1.34
E x S	48.46	1	3.36
F x EM	5.11	1	.35
F x S	.10	1	.01
EM x S	5.22	1	.36
E x F x EM	2.72	1	.19
E x F x S	.27	1	.02
E x EM x S	1.14	1	.08
F x EM x S	22.89	1	1.59
E x F x EM x S	1.05	1	.07
Error	2681.06	186	
Total	2817.91	201	

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