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CAUSAL ATTRIBUTIONS FOR PERFORMANCE AS MEDIATORS OF SELF-EFFICACY BELIEFS: AN INITIAL INVESTIGATION

The Ohio State University Ph.D. 1982

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CAUSAL ATTRIBUTIONS FOR PERFORMANCE AS MEDIATORS OF
SELF-EFFICACY BELIEFS: AN INITIAL INVESTIGATION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Deborah Ann Happ, B.A., M.A.

* * * * *

The Ohio State University
1982

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PUBLICATIONS


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CHAPTER I
INTRODUCTION

The history of psychology is replete with theories about the mechanisms of behavior change. Some of these theories are specific to particular theories of personality or therapeutic techniques. For example, psychodynamic theorists posit that internal forces such as needs, drives, and impulses determine human behavior and that behavior change is effected when the client gains insight into the operation of these forces within himself or herself. Behavioral theorists, on the other hand, assume that behavior is determined by external influences and that behavior change occurs when environmental contingencies are appropriately manipulated.

Other theories of behavior change have been proposed to account for the effects of various therapeutic procedures from different schools of thought. Frank (1973), for example, described counseling as a process of social persuasion. According to Frank, the client becomes involved in an emotionally charged relationship with a socially sanctioned healer (counselor) in a special place, a safe environment. The counselor offers a plausible explanation of the client's distress and uses techniques and procedures that are based on an acceptable rationale. All of these factors combine to raise the client's expectation of help. Strong (1978) defined counseling as a social process in which the counselor uses his or her influence potential to induce the
client to accept new information that will lead to behavior change. The counselor's ability to influence the client comes from the client's recognition of the need for help and perception that the counselor has certain resources that could be of benefit.

Bandura (1977a, 1977b) proposed self-efficacy as a common cognitive mechanism that accounts for the effects of various psychological procedures. The concept of self-efficacy is based in social learning theory (Bandura, 1977b) and is consistent with the recognition that cognitive processes may play an important role in the acquisition and maintenance of behavior patterns. Whereas outcome expectations are a person's beliefs that certain behaviors will result in certain outcomes, efficacy expectations are a person's beliefs that he or she can successfully execute the behaviors necessary to produce the outcomes. For specific tasks for which people have high outcome expectations and appropriate skills, self-efficacy beliefs are hypothesized as the major determinants of people's choice of activities and behavior settings, the amount of effort they will expend, and the length of time they will persist in the face of obstacles and aversive experiences. Efficacy expectations vary on dimensions of magnitude, strength, and generality. Magnitude refers to the level of difficulty of the tasks which an individual believes he or she can perform. Strength refers to the level of confidence that an individual has in his or her ability to perform certain tasks and his or her perseverance in the face of disconfirming experiences. Generality refers to the degree to which efficacy expectations transfer to different behavioral domains (Bandura, 1977a, 1977b; Bandura, Adams, & Beyer, 1977).
Counselors are often involved with clients who have adequate incentive to perform and effective skills but who have negative self-evaluations of their ability to perform certain behaviors. Research has shown that high self-efficacy expectations are associated with increased persistence on task and better task performance, whereas low self-efficacy expectations are associated with decreased persistence and performance decrements (Brown & Inouye, 1978; Weinberg, Gould, & Jackson, 1979; Weinberg, Yukelson, & Jackson, 1980). Since high self-efficacy beliefs are associated with positive behavioral changes, raising people's self-efficacy beliefs would appear to be a legitimate goal of counseling.

Bandura (1977a, 1977b) proposed that self-efficacy beliefs are acquired or altered through four major sources of information: (a) performance accomplishments, (b) vicarious experiences, (c) verbal persuasion, and (d) emotional arousal. Research in this area has indicated that performance-based treatment procedures (performance accomplishments) are significantly more effective than symbolically-based treatments in increasing the level and strength of self-efficacy expectations and improving performance in severe snake phobics (Bandura, 1977a; Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977), unassertive clients (Hammen, Jacobs, Mayol, & Cochran, 1980), and college females learning a high-avoidance springboard-diving task (Feltz, Landers, & Raeder, 1979). These results have been found to generalize to dissimilar as well as similar threats. For example, snake phobics showed enhanced self-efficacy in coping with a variety of snakes as well as other feared animals (Bandura & Adams, 1977) and treated agoraphobics
reported fewer fears and decreased intensity of fears toward animals, physical injury, and interpersonal situations (Bandura, Adams, Hardy, & Howells, 1980).

While current research findings lend support to Bandura's (1977a, 1977b) hypotheses that (a) performance accomplishments are more powerful and dependable sources of efficacy expectations than either vicarious experiences or treatments designed to reduce emotional arousal, (b) efficacy expectations influence the amount of effort that people will expend and the length of time they will persist in the face of obstacles and aversive experiences, and (c) self-efficacy expectations generalize to both similar and dissimilar situations, they do not elucidate the process by which performance accomplishments increase self-efficacy beliefs.

According to Bandura (1977a), the impact of information from performance accomplishments on efficacy expectations is mediated by the individual's cognitive appraisals of the information. Causal attributions for performance are one example of such cognitive appraisals. Literature in the area of attribution theory suggests that causal attributions for success and failure experiences have important consequences for subsequent feelings, expectancies, and behavior (Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971). For example, failure attributed to internal, stable factors is hypothesized to lead to negative affect, expectations of future failures, and performance deficits. Failure attributed to external, unstable causes should result in less negative affect, unchanged or increased expectations of success, and constant or improved performance.
Self-efficacy theory predicts that success is more likely to enhance self-efficacy and failure to produce reductions in self-efficacy when performance is perceived to be the result of internal factors as opposed to external factors. However, even under conditions of perceived internal causation, the impact of performance accomplishments on self-efficacy beliefs will be dependent upon (a) whether performance is attributed mainly to ability or effort, (b) the level of task difficulty, and (c) the rate and pattern of attainment. Bandura (1977a) proposed that: (a) successes attained with minimal effort foster ability attributions and a strong sense of self-efficacy, whereas successes attained with a high expenditure of effort foster attributions to lack of ability and a weak sense of self-efficacy, (b) successes at difficult, complex tasks enhance self-efficacy more than successes at easy, simple tasks, and (c) people who experience failure but detect relative progress have higher self-efficacy expectations than people who experience success but see their performance leveling off compared to their prior rate of improvement.

Despite Bandura's (1977a, 1978) acknowledgement of the importance of causal attributions in mediating the effects of performance accomplishments on self-efficacy beliefs, little work has been done in this area. Hackett and Betz (1981), in their self-efficacy approach to women's career development, noted that sex differences in causal attributions for success and failure may lead to lower and weaker efficacy expectations among women. While Betz and Hackett (1981) did find significant and consistent sex differences in self-efficacy with regard to traditional and nontraditional occupations, no attributional analyses
were made. Keyser and Barling (1981) have conducted the only study to date which has attempted to assess directly the relationship between causal attributions and self-efficacy. In a study of the determinants of children's self-efficacy beliefs, they assessed the interactions of performance accomplishments and modeling with attributional style (internal or external) and found that children with an external attributional style were more susceptible to modeling effects. Unfortunately, there are several conceptual and methodological problems in this study which make interpretation of the results difficult.

Cognitive processing of efficacy information is a critical component of self-efficacy theory as it is presumed to account for the variance in self-efficacy beliefs among individuals exposed to the same information. Since performance accomplishments have been shown to be the most powerful and dependable sources of efficacy information and causal attributions for performance have been shown to affect people's feelings, expectations, and behavior, it seems important to understand the effects of people's causal attributions for performance on their self-efficacy beliefs.

The primary purpose of this study was to determine if causal attributions for performance mediate self-efficacy expectations. More specifically, part one of the study was designed to investigate whether individuals who differ in their self-efficacy beliefs also differ in their causal attributions for success and failure experiences. Part two of the study was designed to investigate the causal attributions made by low-assertive, low self-efficacy and high-assertive, high self-efficacy individuals.
CHAPTER II
REVIEW OF THE LITERATURE

Two disparate intra-individual responses, self-efficacy beliefs and causal attributions for performance, provided the focus in this research. More specifically, this research was designed to investigate causal attributions as mediators of self-efficacy beliefs. The first part of this review centers on self-efficacy theory, the body of research that supports the basic tenets of this theory, and applications of self-efficacy theory to a variety of behavioral domains. The second part of this review is focused on attribution theory. Topics such as basic attribution theory, dimensions of causality, the effects of attributions on emotions, expectancies, and performance, and sex differences in attributions will be discussed.

Self-efficacy Theory

Bandura (1977a, 1977b) proposed self-efficacy as a common cognitive mechanism that accounts for the effects of various psychological procedures. According to Bandura, all forms of counseling and psychotherapy serve to create and strengthen the client's expectations of personal effectiveness.

The concept of self-efficacy is based in Bandura's (1977b) social learning theory and was designed to provide a unifying mechanism for
two divergent trends in the field of behavioral change: (a) that cognitive processes play an important role in the acquisition and maintenance of behavior and (b) that performance-based treatment techniques were being shown to be more powerful and effective methods for producing behavior change than symbolically-based techniques. Self-efficacy theory postulates that cognitive processes mediate change but that cognitive events are best induced and altered by mastery experiences arising from effective performance.

Self-efficacy expectations, i.e. a person's beliefs that he or she can successfully execute the behaviors necessary to produce certain outcomes, are hypothesized to be major mediators of behavior and behavior change and to affect both the initiation and persistence of coping behavior. Efficacy expectations influence people's choices of activities and behavior settings, the amount of effort they will expend, and the length of time they will persist in the face of obstacles and aversive experiences. Efficacy expectations vary on dimensions of magnitude, strength, and generality. Magnitude refers to the level of difficulty of the tasks which an individual believes he or she can perform. On a hierarchy of events, for example, one person may believe that he or she can perform only easy or intermediate tasks while another person may believe that he or she can perform even the most difficult tasks. Strength refers to the level of confidence that an individual has in his or her ability to perform certain tasks and his or her perseverance in the face of disconfirming experiences. Generality refers to the degree to which efficacy expectations transfer to different behavioral domains. It is postulated that, once established, enhanced
self-efficacy beliefs will generalize to situations which are similar to and, less predictably, to situations different from those on which treatment was focused.

The differentiation of self-efficacy expectations and outcome expectations is an important aspect of self-efficacy theory. According to Bandura (1978), outcome expectations are judgments of the likely consequences of a behavior, whereas efficacy expectations are judgments about one's ability to execute successfully a certain behavior pattern. This distinction has been questioned by several authors (Borkovec, 1978; Kazdin, 1978; Teasdale, 1978). Borkovec questioned Bandura's (1977a) focus on performance incapability as the central contributor to anxiety and defensive behavior. He suggested that there are many cases in which individuals are capable of executing the required behaviors yet do not do so because of the expected aversive anxiety response. Kazdin stated that efficacy and outcome expectations appear to be closely related and of a reciprocal nature, i.e. increases in self-efficacy are likely to demonstrate that aversive consequences do not occur and demonstrations that aversive consequences do not occur are likely to increase self-efficacy. Teasdale suggested that Bandura's definition of self-efficacy expectations included both efficacy and outcome expectations and therefore was a potential source of confusion and ambiguity. Bandura (1978) contended that efficacy and outcome expectations have an interactive effect on behavioral and emotional reactions. He suggested that the outcomes that people expect derive largely from judgments of their ability to perform the required behaviors and that, in situations where both efficacy and outcome expectations
vary, behavior is best predicted by considering both types of expectancies.

Bandura (1977a, 1977b) proposed that efficacy expectations are acquired or altered through four major sources of information: (a) performance accomplishments, (b) vicarious experiences, (c) verbal persuasion, and (d) emotional arousal. Performance accomplishments are the most powerful and dependable sources of efficacy expectations because they are based on personal mastery experiences. They convey efficacy information by providing individuals with evidence of performance improvements and a generalized skill for coping with stressful situations. In general, success experiences increase feelings of self-efficacy, while failures lower efficacy expectations. After repeated success, however, occasional failures that are later overcome may serve to strengthen efficacy expectations as people learn that even difficult obstacles can be overcome by sustained effort. Vicarious experience, or observing others perform a behavior, can also enhance efficacy expectations by generating expectations of performance improvement, conveying information that threats are manageable, and teaching effective coping skills. Because vicarious experience relies on inferences from social comparison, however, it is a less powerful and dependable source of information than performance accomplishments. Verbal persuasion raises efficacy expectations by convincing people that they can successfully cope with situations which were previously overwhelming to them. Efficacy expectations gained in this manner can be easily extinguished by disconfirming experiences, however, unless the verbal persuasion is accompanied by opportunities for effective performance.
Finally, individuals are more likely to have high efficacy expectations under conditions of low emotional arousal than under conditions of high arousal. Therefore, treatments such as systematic desensitization that are aimed at reducing emotional arousal can enhance feelings of self-efficacy. Decreasing emotional arousal is not, however, usually sufficient to change behavior and should be accompanied by treatments utilizing other sources of efficacy information.

According to Bandura (1977a), there is a difference between the information contained in environmental events and the information as processed by an individual. The impact of the information from the four sources of efficacy expectations is mediated by the individual's cognitive appraisals of the information. Contextual variables, such as the social, situational, and temporal circumstances in which events occur, affect such appraisals. Causal attributions, discrimination processes, and perceived credibility of verbal persuaders are examples of cognitive appraisals that can mediate the effects of performance attainments, vicarious experience, verbal persuasion, and emotional arousal on self-efficacy.

Self-efficacy theory predicts that success is more likely to enhance self-efficacy and failure to produce reductions in self-efficacy when performance is perceived to be due to internal factors (e.g., ability or effort) as opposed to external factors (e.g., task difficulty or luck). However, even under conditions of perceived internal causation, the impact of performance attainments on self-efficacy will be dependent upon (a) whether performance is attributed mainly to ability or effort, (b) the level of task difficulty, and (c) the rate and pattern
of attainment. Bandura (1977a) proposed that: (a) successes attained with minimal effort foster ability attributions and a strong sense of self-efficacy, whereas successes attained with a high expenditure of effort foster attributions to lack of ability and a weak sense of self-efficacy, (b) successes at difficult, complex tasks enhance self-efficacy more than successes at easy, simple tasks, and (c) people who experience failure but detect relative progress have higher self-efficacy expectations than people who experience success but see their performance leveling off compared to their prior rate of improvement.

With regard to failure, Bandura (1978) proposed that, while repeated failure in itself does not produce performance deficits, failures that lower self-efficacy do debilitate performance. "It is attributions of the causes of outcomes to personal inefficacy that is most likely to undermine performance and cause despondency" (p. 239).

**Research**

Bandura and his colleagues originally applied the concept of self-efficacy to the treatment of simple avoidance behaviors, in particular, snake phobias. These initial studies were designed to test the basic tenets of self-efficacy theory.

Bandura (1977a) and Bandura, Adams, and Beyer (1977) reported the results of research in which 33 adult snake phobics were assigned to one of three groups: (a) participant modeling (performance accomplishment), (b) modeling (vicarious experience), and (c) no treatment control. Approach behavior, fear arousal accompanying approach, and level, strength, and generality of efficacy expectations were assessed before, immediately after, and one month following treatment. The
results indicated that subjects in both the participant modeling and modeling groups showed significant increases in level and strength of self-efficacy, significant increases in total approach behavior, and significant decreases in fear arousal as well as significant decreases in fear of and increased self-efficacy in coping with snakes in natural situations over those in the control group. Furthermore, subjects in the participant modeling group showed significant differences on all measures over subjects in the modeling group. These results were the same for both the test snake and the dissimilar snake (with the exception that subjects in the modeling group did not significantly differ from the controls in approach toward the dissimilar snake) indicating that generalization did occur. Finally, a microanalysis of the congruence between perceived self-efficacy and actual performance was conducted. This measure of congruence is obtained by computing the percentage of accurate correspondence between efficacy judgments and actual performance on individual tasks (Bandura, 1980). The results of this analysis indicated that self-efficacy was a uniformly accurate predictor of performance regardless of whether the changes in self-efficacy were produced through participant modeling or modeling.

Bandura and Adams (1977) reported two experimental tests of self-efficacy theory using severe snake phobics as subjects. In the first study, 10 subjects were treated using systematic desensitization. Pre- and posttests were the same as in the Bandura et al. (1977) study. While subjects receiving systematic desensitization showed significant changes in the predicted direction on all measures, only one subject was able to complete all of the approach behaviors in the posttest.
When the remaining subjects were treated using participant modeling, they showed marked improvement on all measures and all but one subject was able to complete all of the tasks in the posttest. In the second study, a microanalysis of the process of efficacy and behavioral changes during the course of participant modeling was performed. The subjects were six severe snake phobics. Subjects received treatment only for the blocks of items they had failed to perform in the behavioral avoidance pretest. The treatment approach was the same as that described in Bandura, Jeffery, and Wright (1974). The results indicated that efficacy judgments were better predictors of behavior than past performance.

Finally, Bandura, Adams, Hardy, and Howells (1980) presented two studies which further investigated the generality of self-efficacy theory across treatment modalities and behavioral domains. The purpose of the first study was to test the theory that cognitive (covert) modeling (Kazdin, 1973, 1974) alters coping behavior by increasing perceived self-efficacy. The subjects were 17 severe snake phobics. To control for the possibility that the act of making efficacy judgments affects performance through public commitment and pressures for consistency, 11 subjects received cognitive modeling with subsequent measurement of perceived efficacy while 6 subjects received treatment without subsequent measurement of efficacy. The method was the same as that used in the previously reported studies. The results were significant and in the predicted direction. Furthermore, it was found that the act of making efficacy judgments had no effect on any of the measures of approach behavior. Similar results have been found in other studies.
(Brown & Inouye, 1978; Gauthier & Ladouceur, 1981) designed to assess the effects of making efficacy judgments. Finally, in comparing the microanalyses of different treatment modalities, it was found that perceived self-efficacy is an equally accurate predictor of performance regardless of whether treatment is based on performance accomplishments, vicarious experience, reducing emotional arousal, or cognitive coping techniques. In the second study, 11 agoraphobics were given a performance-based treatment developed by Hardy (1976). Pre- and posttests included measures of the level and strength of self-efficacy, a behavioral test of coping behaviors, a measure of fear arousal accompanying coping responses, and a comprehensive fear survey to measure the generality of self-efficacy expectations. Level and strength of self-efficacy as well as coping behaviors were significantly increased and fear arousal was significantly decreased in the aggregate measure and in each of the different areas of functioning (traveling by automobile, walking alone, being in high places, going to restaurants, and using elevators and escalators). Also as predicted, microanalyses indicated that efficacy judgments were better predictors of performance attainments than past performance. Finally, subjects reported fewer fears and decreased intensity of fears of threats such as animals, physical injury, and interpersonal situations.

In summary, research has supported the basic hypotheses of self-efficacy theory. First, various psychological treatments (participant modeling, modeling, cognitive modeling, and systematic desensitization) have been shown to effect behavioral change by altering the level and strength of self-efficacy beliefs. Second, performance accomplishments
have been found to be more powerful and dependable sources of efficacy information than vicarious experience or reduction of emotional arousal. Third, enhanced efficacy expectations generalize to behavioral domains other than those on which treatment is focused. Fourth, efficacy judgments have proven to be better predictors of behavior than past performance.

More recently, research has shown the usefulness of a focus on self-efficacy expectations in areas such as assertiveness, smoking, women's career development, and sports psychology. Various therapeutic procedures have been shown to effect positive behavioral changes and increases in the level and strength of self-efficacy expectations in unassertive clients. Kazdin (1979) evaluated the effects of treatment for unassertiveness on self-efficacy beliefs. In this study, 48 subjects were randomly assigned to one of four conditions: (a) covert modeling alone, (b) covert modeling plus elaboration of imagery, (c) covert modeling plus yoked elaborations, and (d) a scene elaboration control group. The results indicated that subjects in the covert modeling plus elaboration and covert modeling alone groups were higher in level and strength of self-efficacy following treatment than subjects in the scene control group, with the exception that subjects in the covert modeling alone group did not significantly differ from scene control subjects on strength of self-efficacy. Changes in the level and strength of self-efficacy were significantly correlated with changes on behavioral and self-report measures of assertiveness. Hammer, Jacobs, Mayol, and Cochran (1980) investigated the effects of skills training (behavioral rehearsal) and a cognitive behavioral
treatment on the level and strength of efficacy expectations of 55 unassertive nonstudent adults with high or low levels of irrational beliefs. Participants in both treatment groups indicated that they felt they could handle an increased number of situations assertively and the level of improvement was equivalent for the two treatments. Furthermore, while both groups showed more confidence in their ability to handle situations assertively, this was especially true for persons in the skills training group and those with low levels of irrational beliefs.

DiClemente (1981) examined the relationship between strength of self-efficacy and successful avoidance of smoking over a 5-month period. Twenty-nine male and 34 female volunteers who had been 99% free of cigarette smoking for at least two weeks were recruited from three different smoking cessation procedures: (a) an aversion group, (b) a behavioral management group, and (c) self-quitters. All subjects completed a self-efficacy questionnaire within 7 weeks of their quitting and again 5 months later. Results indicated that individuals who remained 99% free of cigarette smoking at 5 months had significantly higher self-efficacy scores on the initial questionnaire than recidivists.

Hackett and Betz (1981) proposed a self-efficacy approach to the career development of women. They argued that women lack strong expectations of self-efficacy in relationship to many career-related behaviors (e.g. mathematical skills, decision-making skills, leadership skills) because of their sex-role socialization. Based on this proposal, Betz and Hackett (1981) investigated (a) the relationship between
occupationally-related efficacy expectations and perceived career options in 134 undergraduate women and 101 undergraduate men, (b) sex differences in efficacy expectations with regard to the educational requirements and job duties of 10 traditional (70% or more of the members were women) and 10 nontraditional (30% or less of the members were women) occupations, and (c) the relationship of ACT scores to self-efficacy expectations, sex differences in self-efficacy, and perceived range of career options. The results indicated that females reported a higher level and strength of self-efficacy than did males for both the educational requirements and job duties of traditional occupations, while males reported a greater efficacy for nontraditional occupations. Furthermore, self-efficacy expectations were found to be consistent predictors of perceived range of career options. Females reported consideration of a significantly greater number of traditional options than males, and males reported considering significantly more nontraditional options than females. Finally, correlations between ACT scores and self-efficacy were generally significant. For females, ACT scores were moderately related to the level of self-efficacy expectations with regard to both traditional and nontraditional occupations. For males, ACT scores were related to both the level and strength of self-efficacy expectations with regard to both traditional and nontraditional occupations.

Sport psychologists have been interested in the relationship between self-efficacy expectations and performance. Feltz, Landers, and Raeder (1979) investigated the effectiveness of participant, live, and videotape modeling on the learning of a high-avoidance springboard
diving task and the strength of 60 college females' self-efficacy expectations. The results supported the primacy of participant modeling vis-à-vis live or videotape modeling. Subjects in the participant modeling group produced more successful dives and had stronger self-efficacy expectations than subjects in the other two modeling groups.

Gould and Weiss (1981) studied the effects of model similarity (same-sex, same-age, similar ability vs. opposite-sex, older, superior ability) and model talk (positive efficacy statements, negative efficacy statements, irrelevant talk, or no self-statements) on 150 female student observers' self-efficacy expectations and performance on a muscular endurance task. The results indicated that the level and strength of efficacy expectations were significantly greater for the similar model subjects than for the dissimilar model subjects and for the irrelevant talk subjects than for the negative talk subjects. Significant correlations between efficacy expectations and performance were found for both level and strength of self-efficacy.

Weinberg, Gould, and Jackson (1979) and Weinberg, Yukelson, and Jackson (1980) studied the relationship between high and low self-efficacy expectations and persistence on a muscular endurance task. Level of self-efficacy was manipulated by telling the subjects that the confederate either had a strained knee ligament (high self-efficacy) or was a member of the college track team who lifted weights to increase leg strength (low self-efficacy). Because self-efficacy theory predicts that expectation-performance differences are maximized in the face of obstacles and aversive consequences, the competition was rigged so that the subject always lost. It was predicted that high
self-efficacy subjects would persist significantly longer on the task than low self-efficacy subjects. Weinberg et al. (1979) used a face-to-face competition. It was found that high self-efficacy subjects performed significantly better than low self-efficacy subjects. In addition, high self-efficacy subjects improved their performance from Trial 1 to Trial 2, whereas low self-efficacy subjects' performance deteriorated. Weinberg et al. (1980) attempted to replicate this study using back-to-back competition as they felt that subjects in face-to-face competition received confounding cues from the confederate concerning strategies for persisting at the task. As in the Weinberg et al. (1979) study, high self-efficacy subjects persisted longer than low self-efficacy subjects. In addition, however, a significant sex by efficacy interaction was found. High self-efficacy males persisted significantly longer than low self-efficacy males, whereas there were no significant differences in persistence between high and low self-efficacy females. The effect of public versus private efficacy expectations on performance was also investigated in this study, but no significant difference between groups was found.

In summary, research has shown the usefulness of a focus on self-efficacy expectations in areas other than simple avoidance behavior. Various therapeutic procedures, such as covert modeling (Kazdin, 1979), covert modeling plus elaboration (Kazdin, 1979), behavioral rehearsal (Hammen et al., 1980), and a cognitive behavioral treatment (Hammen et al., 1980), have been shown to effect positive behavioral changes and increases in the level and strength of self-efficacy expectations in unassertive clients. Efficacy judgments have proven to be accurate
predictors of behavior in studies of smoking cessation (DiClemente, 1981), a muscular endurance task (Gould & Weiss, 1981), and perceived range of career options (Betz & Hackett, 1981). Finally, Bandura's (1977a, 1977b) hypothesis that performance accomplishments are more powerful and dependable sources of efficacy expectations than vicarious experiences received support from the findings of Feltz et al. (1979) that participant modeling led to stronger self-efficacy expectations and better performance than either live or videotape modeling. In another study of the effects of modeling on efficacy judgments, Gould and Weiss (1981) found that subjects who observed a similar model had higher level and strength of self-efficacy and significantly differed from subjects who observed a dissimilar model.

Studies in which efficacy expectations were manipulated have found that high self-efficacy expectations are associated with increased persistence on task and better task performance, whereas low self-efficacy expectations are associated with decreased persistence and performance decrements (Brown & Inouye, 1978; Weinberg et al., 1979; Weinberg et al., 1980). These results support Bandura's (1977a, 1977b) hypothesis that efficacy expectations influence the amount of effort that people will expend and the length of time they will persist in the face of obstacles and aversive experiences.

While the self-efficacy research up to this time has generally supported several of Bandura's (1977a, 1977b) hypotheses, other aspects of the theory have yet to be empirically tested or have received minimal attention in the literature. One such area is the role of attributions in determining efficacy expectations.
Attribution Theory

Overview

Attribution theory is a cognitive approach to motivation that is concerned with people's perceptions of causality. Perceptions of causality are ascriptions that are constructed by the perceiver in an attempt to make the environment more meaningful. According to Forsyth (1980), attributions have four major functions. The first two functions are explanation and prediction. Belief that one understands the causes of behaviors and events reinforces a sense of personal control by fulfilling two interrelated functions: (a) providing explanations of behaviors and environmental events and (b) facilitating the prediction of behaviors and events. The third function of attributions is the egocentric function. Attributions fulfill an egocentric function when they are formulated to protect, maintain, or extend beliefs about the self or the environment. The last function of attributions is the interpersonal function. Attributions serve an interpersonal function when they are formulated to explain one's behavior to others. This is most common when motives for behavior are questioned, when actions lead to undesirable outcomes, or when a behavior is misunderstood by others.

The attributional approach to psychology received its impetus from the writings of Fritz Heider. Heider's (1958) work was concerned with "naïve" (or common-sense) psychology. According to Heider, the outcome of an action is a function of effective forces within the person as well as effective environmental forces. The effective personal forces are allocated to two factors, "can" (power, ability) and "try" (effort, motivation). The effective environmental forces are the ease
or difficulty of the task and, in certain situations, luck. Differential allocation of causality between personal and environmental forces results in disparate affective experiences, future expectancies, and behaviors.

There are numerous possible perceived causes of success and failure. Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) have suggested, however, that success and failure are primarily attributed to the four causal factors identified by Heider (1958). That is, they postulated that people use attributions to ability, effort, task difficulty, and luck both to interpret and predict the outcomes of achievement-related events.

Several studies using structured measures of causal attributions have supported the theory that ability, effort, task difficulty, and luck are used by people to explain outcomes. Frieze and Weiner (1971) gave an attribution questionnaire consisting of 27 different stimulus items to 34 subjects. Each item contained information about the percentages of past success or failure at the given task and similar tasks and the percentage of others succeeding or failing at the task. Half of the subjects received all success items, while the other subjects received all failure items. For each item, the subjects were asked to specify the extent to which the outcome was due to ability, effort, task difficulty, and luck. The results indicated that ability and effort were more salient determinants of success than failure, while task difficulty was perceived as a more significant cause of failure than of success. In a second experiment which was similar to the first, Frieze and Weiner (1971) gave 32 stimulus items with six informational cues:
outcome, percentage of past success/failure at the task, the percentage of others who succeeded/failed, time spent at the task (short or long), task structure (skill or luck), and other or self to 32 subjects. As in experiment one, attributions to ability and effort were significantly greater given success than failure and attributions to task difficulty were used more frequently for failure than success. Attributions to luck were used more frequently for success than failure.

In a study by Weiner and Kukla (1970), 71 male undergraduates were given a digit-guessing task in which they were asked to guess whether the next number on a list was 0 or 1. While the outcome was determined solely by chance, the instructions created an ambiguous situation that allowed for attributions to ability, effort, or luck. The results indicated that high achievement motivation subjects made more attributions to ability for success and to lack of effort for failure than low achievement motivation subjects. In failure situations, subjects low in achievement motivation made more attributions to lack of ability than subjects high in achievement motivation.

Kukla (1972) reported an experiment designed to determine whether individuals who are high or low in achievement motivation differ in their causal attributions for success and failure. In this experiment, 138 male undergraduates were given a digit-guessing task and then asked to complete independent rating scales of ability, effort, task difficulty, and luck. It was found that high achievers made more effort attributions for both success and failure than intermediate or low achievers. Subjects with intermediate achievement needs made more
attributions to luck than subjects who were either high or low in achievement needs. All groups considered ability to be a major determinant of their success or failure.

Meyer (1970) reported in Weiner, Heckhausen, Meyer, and Cook (1972) induced failure on a series of digit-symbol substitution tasks. After each trial, the subjects were asked to rate their attributions for ability, effort, task difficulty, and luck. The results indicated that individuals who were high in achievement motivation attributed their failure to lack of effort, whereas individuals who were low in achievement motivation attributed their failure to lack of ability.

Bar-Tal and Frieze (1977) had 60 male and 60 female undergraduates work on 25 anagrams. Half of the students succeeded and half failed. The students were then asked to complete 7-point independent rating scales of attributions to ability, effort, task difficulty, and luck. For success, high achievement students made more attributions to ability and ease of task than low achievement students. All of the students saw luck and task difficulty as important causes of their failure. Furthermore, attributions in the success condition (M=4.73) were higher than in the failure condition (M=3.26) and high achievement-motivated students (M=4.16) made higher attributional ratings than low achievement-motivated students (M=3.83).

Finally, Gilmor and Minton (1974) asked 80 male introductory psychology students to do 10 6-letter anagrams. Success and failure were determined by the students' actual performance. The students were then asked to complete 5-point rating scales of ability and luck. The results indicated that successful students made attributions to ability
and students who failed made attributions to luck. Contrary to the results of Bar-Tal and Frieze (1977), it was found that students who succeeded (M=2.75) made lower attributional ratings than students who failed (M=5.38).

While these experiments have shown that people do make use of the four causal elements proposed by Weiner et al. (1971) to explain the causes of their success and failure, they do not prove that these elements are the sole perceived causes of success and failure or even that they are the most salient. Frieze (1976) noted that, in the majority of studies on causal attributions for performance, the causal categories available to subjects were selected by the experimenter on theoretical grounds or personal intuition. She further noted that exclusive reliance on the four causal elements of ability, effort, task difficulty, and luck embodied assumptions that: (a) ability, effort, task difficulty, and luck are the only important causes for success and failure and (b) that the causes used to explain one achievement situation are the same as those used to explain all other achievement situations. To test these assumptions, Frieze (1976) asked 15 male and 36 female college students to list causal attributions for four of eight situations which varied according to outcome (success or failure), type of situation (academic or nonacademic), and person involved (self or other). The students' attributions were coded into categories of ability, immediate effort, task, luck, other people, stable effort, mood, fatigue, and other. The results indicated that attributions to effort were the most common overall. Attributions to ability were commonly used to explain success, while mood was often cited as a cause for
failure. Unclassifiable attributions were most common after failure and for nonacademic situations. In a second study, 29 college students responded to all of the eight stimuli used in the first experiment. The results of the first experiment were replicated. In addition, it was found that attributions to task difficulty were used more frequently in failure than success situations. Frieze concluded that, while attributions to ability, effort, task difficulty, and luck did account for the large majority of causal attributions made, especially in academic situations, mood attributions should be included in future studies as potential causes of failure.

Elig and Frieze (1975) also used an open-ended attribution questionnaire to investigate the causes used by individuals to explain success and failure. In their study, 71 special education teachers made attributions for the success or failure of an imagined student on a reading test and for their own success or failure at a party. The causal attributions employed by the teachers included ability, unusual effort, task difficulty, luck, stable effort, task interest, mood, and motivation. The general types of attributions made did not differ greatly across success and failure and across the different situations.

Finally, Bar-Tal and Darom (1979) had 103 male and 133 female fifth and sixth grade students evaluate the degree to which eight factors contributed to their success or failure on a classroom test. The eight factors (ability, interest in the subject matter, effort, preparation, difficulty of the subject matter, difficulty of the test, study conditions at home, and the teacher's explanation of the subject matter) had been derived from a pilot study in which 63 fifth grade
students were given an open-ended questionnaire and asked to list all of the causes which contributed to their grade on a test. The results of the study indicated that the students tended to attribute success to the teacher's explanation of the material, good home conditions, ease of the subject matter, ease of the test, and high interest in the subject matter. Failure tended to be attributed to insufficient preparation, low ability, lack of effort, difficulty of the subject matter, and difficulty of the test. They concluded that predetermined use of only four causes limited the understanding of the causal perception of success and failure in real situations.

In summary, studies that limited subjects' attributional choices to ability, effort, task difficulty, and luck have found that successful subjects tend to make internal attributions. That is, subjects who succeed tend to attribute their success to ability and effort. This is true for both high and low achievement-motivated individuals. For failure, high achievement-motivated individuals tend to make attributions to lack of effort (an internal, unstable factor), whereas low achievement-motivated individuals tend to make attributions to lack of ability (an internal, stable factor). Both high and low achievement-motivated individuals tend to attribute failure to task difficulty (an external factor). The body of research using open-ended measures of attribution, while supporting the importance of the four causes proposed by Weiner et al. (1971), suggests that there are other causes (e.g., mood and interest in task) which are important and need to be considered in future research. This appears to be especially true for research dealing with nonacademic situations. Research that utilizes
multiple attributional measures in a structured response format is needed in order to elucidate the perceived causes of success and failure in various situations and to further support or reject the primacy of attributions to ability, effort, task difficulty, and luck.

**Dimensions of Causality**

Identification of the dimensions of causality has been another area of much discussion and investigation. Dimensions of causality are second order concepts that are used by attribution theorists to organize the causal attributions made by individuals for their performance.

Rotter (1966) proposed a unidimensional classification system of causal attributions which he labeled locus of control. According to this system, causes were perceived to be either internal or external to the person. Causes such as ability, effort, and mood are internal, whereas task difficulty, luck, and other people are external causes. According to Rotter, the potential for a behavior to recur in the same or similar situations is strengthened when an individual perceives the reinforcement of that behavior as being under his or her control or contingent on his or her own behavior. Likewise, the potential for a behavior to recur is less likely to be strengthened when an individual perceives the reinforcement as being outside of his or her control or noncontingent on his or her own behavior.

A second dimension of causality, originally distinguished by Heider (1958), is the stable-unstable dimension. Stable factors such as ability and task difficulty are long-lived and recurrent, while unstable factors such as effort and luck are short-lived and intermittent.
Weiner et al. (1971) proposed a two-dimensional classification scheme for attributions using the dimensions of locus of control and stability. According to this scheme, ability is an internal-stable factor, effort is an internal-unstable factor, task difficulty is an external-stable factor, and luck is an external-unstable factor.

A third dimension of causality is controllability. This dimension also was identified by Heider (1958). Causes such as ability, task difficulty, and luck are not under an individual's volitional control, whereas causes such as effort and help from others are perceived to be controllable. Weiner (1979, 1980) proposed a three-dimensional taxonomy of causal attributions. According to this scheme, ability is an internal-stable-uncontrollable factor, typical effort is an internal-stable-controllable factor, immediate effort is an internal-unstable-controllable factor, task difficulty is an external-stable-uncontrollable factor, luck is an external-unstable-uncontrollable factor, mood is an internal-unstable-uncontrollable factor, teacher bias is an external-stable-controllable factor, and help from others is an external-unstable-controllable factor.

Finally, Abramson, Seligman, and Teasdale (1978) proposed a fourth dimension of causality, namely global-specific. Global factors such as general ability and typical effort affect a wide variety of outcomes, while specific factors such as mathematics ability and immediate effort do not.

While causes can be theoretically placed in certain categories (e.g. ability as an internal-stable-uncontrollable factor), Weiner (1979) cautioned that the actual taxonomic placement of a cause
depends on its subjective meaning to the individual in a specific situation at a specific time. Personal interpretations must be accounted for because of the fact that attribution theory is concerned with perceived rather than actual causality. Despite this caution, attributional studies to date have either asked subjects to attribute their performance to specific causes or have measured subjects' attributional style (e.g. internal or stable). There has been no research that has measured both specific attributions and attributional style so as to determine whether individuals place specific causes in the same categories as do the attribution theorists.

**Effects of Causal Attributions**

In their attributional model of achievement motivation, Weiner et al. (1971) suggested that causal attributions for success and failure have important consequences for subsequent feelings, expectancies, and behaviors. It was hypothesized that failure attributed to internal, stable factors would lead to negative affect, expectation of future failures, and performance deficits, whereas failure attributed to external, unstable factors would lead to less negative affect and would have minimal negative effects on expectations of success and performance. Similarly, Weiner (1980) proposed that the locus of control dimension related to self-esteem, the stability dimension related to expectancy changes, and the controllability dimension related to interpersonal evaluations and intrapersonal feeling states. With regard to the deficits of learned helplessness, Abramson et al. (1978) proposed that the internality dimension was related to self-esteem deficits, the stability dimension determined the chronicity of helplessness deficits,
and the globality dimension determined the generality of helplessness deficits.

Several studies designed to test these hypotheses have been reported in the literature. Forsyth and McMillan (1981) reported a study designed to assess the relationship between the attributions, affect, and expectations of college students following an examination. In this study, 144 female and 89 male college students enrolled in introductory psychology completed 9-point Likert-type measures of test performance, expectations, causal attributions, and affect after receiving their grades on a major course examination. It was found that students who made internal attributions for their success reported significantly more positive affect than those who made external attributions for their success. For failure, students who made internal attributions reported more negative affect than students who made external attributions. The most positive affect was reported by students who made attributions to internal, stable, controllable factors. With regard to expectations, students who failed expressed the most negative expectations when they attributed their performance to external, uncontrol­lable factors, whereas students who succeeded expressed more positive expectations when they made internal, controllable attributions.

In a study designed to measure children's causal attributions for positive and negative interpersonal outcomes, Ames, Ames, and Garrison (1977) asked 20 boys and 20 girls identified as being either high or low in social status to attribute causality for 12 self and 12 other interpersonal outcomes. The causal categories were internal, external, and mutual. The results indicated that negative outcomes were attributed more externally than positive outcomes. For negative outcomes,
children high in social status made more external attributions than children low in social status, whereas, for positive outcomes, children high in social status made more internal attributions than children low in social status.

Miller and Arkowitz (1977) were also interested in causal attributions for social outcomes. In their first study, 64 male undergraduates were assigned to one of two conditions, expect-acceptance or expect-rejection. Within each of these conditions, half of the subjects interacted with a confederate who behaved warmly (success) and half interacted with a confederate who behaved coldly (failure). All subjects then interacted with a warm confederate. Following each interaction, the subjects rated their attributions for the outcome on 7-point bipolar rating scales anchored with ability and luck at the extremes and with 50% ability, 50% luck in the middle. Contrary to the experimental hypotheses, subjects in the expect-acceptance group made more external attributions than subjects in the expect-rejection group and subjects in the receive-rejection group made more external attributions than subjects in the receive-acceptance group after the first interaction. After the second interaction, however, there was a nonsignificant trend for subjects in the expect-rejection/receive-acceptance and expect-acceptance/receive rejection groups to attribute more internally than subjects in the other two groups. In a second study, which was identical to the first with the exception that subjects were selected on the basis of being high or low in social anxiety, the same results were found.
Andrews and Debus (1978) reported a study designed to examine the relationship between causal attributions for performance and persistence at an achievement task. In this study, 71 female and 87 male sixth grade children were administered the Intellectual Achievement Responsibility Scale (Crandall, Katkovsky, & Crandall, 1965) and the Effort Attribution Scale, which was devised as a measure of the tendency to attribute both success and failure to effort. In addition, the children were given a circle design task in which success or failure was manipulated by the experimenter. After each of the six trials, the children were asked to rate the extent to which the outcome was caused by ability, effort, task difficulty, and luck or any combination of the four causes. The persistence task used in the study was a modification of the Perceptual Reasoning Test (Feather, 1961, 1963). Two measures of persistence, total time spent on the insoluble item and number of trials taken at the insoluble item, were taken. The results indicated that attribution of failure to insufficient effort was positively related to persistence, whereas attribution of failure to lack of ability or task difficulty was negatively related to persistence.

Other tests of these hypotheses are found in the learned helplessness literature. Dweck and Reppucci (1973) studied the relationship between learned helplessness and internal versus external causal attributions. In this study, 20 male and 20 female fifth-graders were given soluble block designs by one experimenter and insoluble block designs by another experimenter. Trials from each were randomly interspersed. At a specified time, the failure experimenter administered soluble
problems to the children. Expectancies and performance were monitored throughout the study. The results indicated that, following failure, the performance of some children deteriorated while the performance of others did not. An analysis of the Intellectual Achievement Responsibility Scale (Crandall et al., 1965) profiles of the two groups of children revealed that the helpless children, as compared to the persistent children, took less personal responsibility for their successes and failures, and, to the extent that they did take responsibility, they tended to attribute outcomes to ability rather than effort.

Dweck (1975) attempted to determine whether a treatment that altered attributions for failure would enable learned helpless children to deal more effectively with failure experiences. Twelve learned helpless children were randomly assigned to either a success only treatment or an attribution retraining treatment. Following training, children in the attribution retraining treatment were able to handle failure more adaptively (i.e. persist after failure) and showed a significant increase in the degree to which they attributed failure to insufficient effort rather than lack of ability. Children in the success only treatment, however, continued to show a marked deterioration in performance following failure and to attribute failure to lack of ability.

In a study comparing the nature, timing, and frequency of achievement-related cognitions of learned helpless and mastery-oriented fifth grade students, Diener and Dweck (1978) continuously monitored the children's verbalizations following failure. It was found that the helpless children attributed their failure to lack of ability, used
ineffectual hypothesis-testing strategies following failure, and made statements of negative affect. On the other hand, mastery-oriented children made few attributional statements, engaged in self-monitoring and self-instruction, maintained or improved their hypothesis-testing strategies, and expressed positive affect and prognosis for performance after failure. It was concluded that helpless children focused on the cause of failure, whereas mastery-oriented children focused on remedies for failure. In a related study, Diener and Dweck (1980) investigated the differences between helpless and mastery-oriented children in their perception of success. Compared to mastery-oriented children, helpless children underestimated the number of successes, overestimated the number of failures, did not perceive successes as indicative of ability, did not expect future successes, and devalued their successful performances following failure.

In summary, the results of studies that have measured causal attributions and correlated them with measures of expectancy, feeling, and/or performance deficits appear to support the proposed consequences of various attributions on subsequent expectancies, feelings, and behaviors. However, these studies fall prey to the problem noted in the section on dimensions of causality. That is, the studies reported have not checked out the assumptions regarding the taxonomy of specific attributions by asking the subjects to place their own causes in dimensional categories. When the subjective meaning of an attribution is not taken into account, the results must be interpreted with caution.

The results of studies in which attributions were manipulated and the learned helplessness deficits predicted have been mixed. Klein,
Fencil-Morse, and Seligman (1976) assigned 80 depressed and nondepressed subjects to one of five treatments: (a) soluble problems, (b) control, (c) insoluble problems with no attribution of failure instructions, (d) insoluble problems with internal attribution of failure instructions, and (e) insoluble problems with external attribution of failure instructions. After experience with soluble, insoluble, or no discrimination problems, all subjects were tested on a series of anagrams. For nondepressed subjects given insoluble problems, anagram performance was the same regardless of the instructional set. For depressed subjects, however, helplessness deficits were evident for the internal attribution and no attribution groups but were eliminated when subjects were instructed that their prior failure was due to task difficulty (external attribution) not lack of ability (internal attribution).

Tennen and Eller (1977) attempted to manipulate attributions by giving subjects insoluble problems that were labeled either progressively easier (lack of ability attribution) or progressively more difficult (task difficulty attribution). Following this manipulation, the subjects were tested on an anagram task which they believed to be a second, unrelated experiment. It was found that subjects who were given an internal, stable, and global attribution (inability) showed performance deficits on the anagram task, whereas performance was facilitated for subjects given an external, unstable, and specific attribution (task difficulty).

Hanusa and Schulz (1977) assigned 42 male and 23 female college students to one of six experimental groups: a no-training group, a
contingent-reinforcement training group, and four noncontingent-reinforcement training groups. Three of these noncontingent groups received attributional information indicating that their failure was caused by lack of ability, lack of effort, or task difficulty. The fourth group received no attributional information. After completing the training task which consisted of three computerized concept formation problems, the subjects were tested for persistence and performance deficits on a maze-solving task. It was found that subjects in the ability attribution group performed better than subjects in any of the other groups. Persistence on the test task was not affected by the experimental manipulations.

Wortman, Panciera, Shusterman, and Hibscher (1976) assigned 42 undergraduate females to one of four experimental groups: (a) no perceived control-incompetence, (b) no perceived control-no information, (c) no perceived control-situation, and (d) perceived control. The subjects were given a problem-solving task and were told that they could prevent aversive noise bursts by correctly solving the problems. After receiving false feedback on their performance, they were given the attributional information and were asked to do another problem-solving task then a puzzle task. It was found that subjects who attributed their failure to lack of ability made fewer errors on the problem-solving task and solved more puzzles than subjects in the other groups. However, subjects who made attributions to lack of ability reported more stress than subjects who made situational attributions.

In summary, Klein et al. (1976) and Tennen and Eller (1977) found that subjects who attributed failure to lack of ability exhibited
helplessness deficits, whereas subjects who attributed failure to task difficulty exhibited either an absence of helplessness deficits or facilitated performance. Contrary to these results, Hanusa and Schulz (1977) and Wortman et al. (1976) failed to find performance deficits in either personally helpless (internal attribution) or universally helpless (external attribution) subjects. They found that subjects who attributed failure to internal, stable factors (lack of ability) performed better than subjects who attributed failure to situational factors (task difficulty) or internal, unstable factors (lack of effort). Interestingly, however, subjects who made internal, stable attributions reported experiencing more stress than subjects who made external, stable or internal, unstable attributions. These results have been explained in terms of Wortman and Brehm's (1975) suggestion that, if people originally expect control over an outcome that is important to them, a small amount of helplessness training will threaten their freedom and motivate them to perform better. Unfortunately, however, it is not clear what constitutes an "important" outcome nor has the optimal amount of helplessness training been determined.

Causal Attributions and Expectancy of Success

Research has shown that causal attributions following success and failure are functions of an individual's initial expectations of success at the task. This body of research seems particularly relevant to a study of causal attributions as mediators of self-efficacy beliefs.

Feather and Simon have reported a series of studies designed to investigate the relationship between initial confidence and causal attributions for performance. In the initial study, Feather (1969) asked 89 male and 78 female introductory psychology students to rate how
confident they were that they could pass an anagrams test before they began working on 10 6-letter anagrams. After completing and scoring the test, the students were asked to complete a 5-point bipolar rating scale of attribution with luck and ability at the extremes and 50% luck, 50% ability in the middle. It was found that subjects who succeeded showed more attributions to luck when they were initially unconfident than when they were initially confident. Conversely, subjects who failed showed more attributions to luck when they were initially confident than when they were initially unconfident. Furthermore, subjects who were initially confident and passed attributed their success to ability. Subjects who were initially unconfident and failed attributed their failure to lack of ability. In summary, unexpected success or failure was more often attributed to luck than expected success or failure. Initially confident subjects tended to attribute success to ability and failure to bad luck, whereas initially unconfident subjects tended to attribute success to good luck and failure to lack of ability.

In the second study, Feather and Simon (1971a) had 66 male and 64 female introductory psychology students work five practice anagrams and 15 test anagrams in like-sex pairs. The difficulty level of the anagrams was manipulated so that half of the subjects passed and half failed. Before beginning to work on the test problems, the subjects announced their scores on the practice problems and rated their degree of confidence about passing the test both for themselves and for their partners. After receiving their scores on the test problems, the subjects rated the degree to which they felt that their performance and
their partner's performance was due to ability or luck. The attribution measure was the same as that used in Feather (1969). Consistent with the previous results, unexpected success and failure were more often attributed to luck than expected success and failure for both self and other. Contrary to previous findings, there was little difference in attribution ratings for one's own success and failure when initial confidence was high. When initial confidence was low, however, one's own success was attributed to good luck and failure to lack of ability.

In a third study, Feather and Simon (1971b) assigned 85 male high school students to one of two experimental conditions: (a) selective control and (b) manipulative control. In the selective control condition, subjects were asked to rate their initial confidence before beginning to work on a 10-item anagrams test. In the manipulative control condition, differences in initial confidence were achieved by manipulating patterns of success and failure on a practice test of three anagrams before the subjects began to work on the actual 10-item anagrams test. After completing and scoring the test, all subjects completed an attribution questionnaire which consisted of 5-point Likert-type scales measuring ability, effort, task difficulty, and luck. Each scale was anchored by "Not a Cause" and "Very Much a Cause" at the extremes with "Somewhat a Cause" in the middle. The results of this study replicated the results obtained by Feather (1969) regardless of experimental condition. Furthermore, subjects in both conditions saw task difficulty and effort as more important causes of success than failure.
Feather and Simon (1972) conducted a field replication of their previous laboratory studies. In this study, 124 male and 99 female introductory psychology students were asked to rate how confident they were that they could pass their first examination. The students then completed 8-point Likert-type measures of ability, effort, task difficulty, and luck with "Not Important at All as a Cause" and "Very Important as a Cause" at the extremes immediately after taking the test and again after receiving their grades. As previously found (Feather, 1969; Feather & Simon, 1971a, 1971b), unexpected outcomes were more often attributed to luck than expected outcomes. Contrary to previous results, however, there was no tendency for subjects to attribute expected outcomes to the ability factor. There were no significant effects involving task difficulty or effort.

Finally, Simon and Feather (1973) had 118 male and 95 female first year psychology students and 31 male and 52 female second year psychology students rate their initial confidence before a major examination and their causal attributions following receipt of their grades on the examination. The attribution measure consisted of 8-point Likert-type measures of ability, luck, knowledge, and task difficulty. The results indicated that unexpected outcomes were more often attributed to luck than expected outcomes, whereas expected outcomes were more often attributed to knowledge than unexpected outcomes.

McMahan (1973) reported the results of a study designed to determine whether expectancy disconfirmation was related to the attributional dimension of stability or locus of control. Fifty-three male and 56 female sixth grade students, 44 male and 37 female tenth grade students,
and 66 male and 80 female college students were asked to rate their confidence in reaching the correct solution before attempting to solve each of five 5-letter anagrams. Following each trial, the students were asked to attribute causality for their success or failure by means of sets of six paired-comparison questions using all possible pairings of ability, effort, task difficulty, and luck. The results indicated that unexpected success and failure were more often attributed to effort and luck and less often to ability than expected success and failure. Contrary to the experimental hypothesis, the interaction of expectancy and outcome had no significant effect on task difficulty scores. Furthermore, it was found that attributions to ability and task difficulty were associated with high expectancies following success and with low expectancies following failure, whereas attributions to effort and luck were associated with low expectancies following success and with high expectancies following failure. McMahan concluded that, while the results of his study did not contradict earlier findings (Feather, 1969) seen as evidence of the role of locus of control in achievement behavior, they did suggest that the stability dimension is more salient.

Weiner, Mierenberg, and Goldstein (1976) further investigated the relationship of the stability and locus of control dimensions of causal attributions to expectancy of success. In this study, 126 male undergraduates were randomly assigned to one of six conditions: 0, 1, 2, 3, 4, or 5 successes on a block design test. The subjects stated their expectancy of success prior to working on each of the 10 block designs and completed an attribution questionnaire after each trial. Attributions were measured using four 15-point bipolar rating scales that were
identical with respect to either the locus of control or the stability dimensional anchors, but which differed along the remaining dimension. It was found that within both the internal and external causes, the expectancy of success was directly related to the stability of the perceived cause of the previous positive outcomes.

Finally, Gilmor and Minton (1974) gave the I-E Scale (Rotter, 1966) to 250 male introductory psychology students. Forty internal and 40 external subjects were randomly selected from a pool of subjects with extreme scores. These subjects rated their initial confidence, worked on 10 6-letter anagrams, then completed an attribution questionnaire (Feather, 1969). As did Feather (1969), Gilmor and Minton found that, under failure, initially confident subjects made attributions to luck, whereas initially unconfident subjects made attributions to lack of ability. Under success, there was a trend for initially confident subjects to make more attributions to ability than initially unconfident subjects. Unlike Feather's finding, this trend was not significant. In addition, it was found that successful subjects attributed their performance to ability, whereas subjects who failed attributed their performance to luck. Overall, successful subjects had lower attribution scores than subjects who failed.

In summary, research in the area of causal attributions and expectancy of success has shown that unexpected success or failure is more often attributed to luck than expected success or failure, whereas expected outcomes are more often attributed to ability. Initially confident subjects tend to attribute success to ability and failure to bad luck, whereas initially unconfident subjects tend to attribute success
to good luck and failure to lack of ability. Although it was originally believed that these results indicated a relationship between the locus of control dimension of causal attributions and expectancy of success, more recent research has shown that it is the stability dimension that is more salient.

Sex Differences in Causal Attributions

A number of studies have reported differences in the categories of causes used by females and males to explain their successes and failures. For example, Bar-Tal and Darom (1979) found that girls tended to attribute their outcomes to preparation and conditions at home more than boys, whereas boys tended to attribute their successes to ability more than girls. Feather (1969) found that females were more likely than males to attribute success and failure to luck. Similarly, Simon and Feather (1973) found that females saw both luck and task difficulty (external factors) as more important causes of their performance than did males. There was a nonsignificant trend for males to make higher attributions to ability and knowledge (internal factors) than did females. However, neither Feather and Simon (1971a) nor Feather and Simon (1972) found significant effects for sex. Finally, Weiner and Potepean (1970), in a study of the personality characteristics of students who were either successful or failing, found that successful male students were lower in test anxiety, higher in achievement orientation, more likely to attribute success to ability and effort, and less likely to attribute failure to lack of ability than failing male students. There were, however, no significant differences found between successful and failing females.
Results such as these prompted research specifically concerned with sex differences in attributions. Nicholls (1975) gave 48 male and 48 female fourth grade students an angle-matching task. All subjects had both a practice session and a test session. Causal attributions were measured after both sessions by means of a pie graph which the children could adjust to show the relative importance of ability, effort, task difficulty, and luck to their scores. For the practice session, it was found that (a) girls, but not boys, attributed failure to lack of ability more than success to ability, (b) boys, but not girls, had higher attributions to luck after failure than after success, and (c) boys attributed failure to bad luck more than did girls. For the test sessions, there was a marginal tendency for girls to attribute failure to lack of ability more than did boys.

Bar-Tal and Frieze (1977) explored the attributional patterns of high and low achievement-motivated males and females. The subjects were 60 male and 60 female college students. The subjects were given a set of 25 anagrams whose level of difficulty was experimentally manipulated so as to create success and failure conditions. Upon completion of the anagrams test, the students completed 7-point Likert-type scales of ability, effort, task difficulty, and luck. The results indicated that females more than males made attributions to luck for their performance. This is consistent with previous findings. Furthermore, (a) high achievement-motivated males made more attributions to ability than any other group, (b) high achievement-motivated females saw effort as an important determinant of their success, and (c) high achievement-motivated females tended to make more external attributions.
for success than did high achievement-motivated males.

In summary, significant sex differences in causal attributions have been found. In general, it appears that females make more external attributions (particularly to luck) for their performance than do males. Because of these findings, sex should be considered as an independent variable in attributional research.

**Causal Attributions and Self-efficacy**

Despite Bandura's (1977a, 1977b) discussion of the importance of causal attributions in mediating the effects of performance attainments on self-efficacy beliefs, little work has been done in this area. Hackett and Betz (1981), in their self-efficacy approach to women's career development, noted that sex differences in causal attributions for success and failure may lead to lower and weaker efficacy expectations among women. While Betz and Hackett (1981) did find significant and consistent sex differences in self-efficacy with regard to traditional and nontraditional occupations, no attributional analyses were made. Keyser and Barling (1981), in a study of the determinants of children's self-efficacy beliefs, assessed the interactions of performance accomplishments and modeling with attributional style (internal or external) as measured by the Intellectual Achievement Responsibility Scale (Crandall et al., 1965) for 504 sixth grade students. The results indicated that the performance accomplishments X attributional style interaction was not significant, but the modeling X attributional style interaction was significant, suggesting that children with an external attributional style were more susceptible to modeling effects. These results were consistent with the major finding of the study that
modeling was a better predictor of self-efficacy than performance accomplishments. The results of this study, however, must be interpreted with caution due to conceptual and methodological problems. First, Keyser and Barling did not accept Bandura's (1977a) distinction between efficacy and outcome expectations. They assumed that efficacy expectations (anticipated mastery) and outcome expectations (incentive to perform) interact multiplicatively to produce perceived self-efficacy. Second, modeling was provided by establishing the self-efficacy of the teachers involved in the study rather than by having the children actually observe another person perform the test task. Third, the subjects were sixth grade students. Keyser and Barling suggested that younger children rely more on modeling as a source of information regarding self-efficacy beliefs, whereas performance accomplishments are more influential as children become older.

Finally, the body of research dealing with causal attributions and expectancy of success indicates a definite relationship between these two concepts. Since self-efficacy is highly related to the concept of expectancy of success, it is reasonable to believe that a relationship between causal attributions and self-efficacy expectations will be found.
CHAPTER III

METHOD

The purpose of this research study was to determine if individuals who differ in their self-efficacy beliefs also differ in their causal attributions for success and failure experiences. This appears to be a necessary first step in determining if causal attributions mediate self-efficacy beliefs. The purpose was accomplished by looking at self-efficacy beliefs and causal attributions in two behavioral settings, an achievement situation and situations requiring assertive behavior.

Experiment 1

In Experiment 1, subjects were asked to make self-efficacy judgments about their ability to pass an anagrams test and to give causal attributions for their success or failure at the task. Success and failure were manipulated by the experimenter by varying the level of difficulty of the anagrams.

Subjects

The subjects were 186 students (101 males and 85 females) enrolled in the introductory psychology course at The Ohio State University during winter quarter, 1982. Subjects were solicited by sign-up sheets and received course credit for their participation.
Instruments

Self-efficacy expectations were assessed by asking the subjects how confident they were that they could pass the anagrams test. The 6-point rating scale was anchored with "Not Confident at All" at one extreme and with "Very Confident" at the other extreme.

Causal attributions for performance were assessed by using seven 6-point independent rating scales anchored with "Not a Cause" and "Very Much a Cause" at the extremes and "Somewhat a Cause" in the middle. The subjects were instructed to indicate the degree to which each of the seven attributions caused their success or failure. The seven attributions measured in this study were: (a) ability, (b) task difficulty, (c) stable effort, (d) interest in the task, (e) immediate effort, (f) mood, and (g) motivation. Different rating scales were used for the Success Condition and the Failure Condition. The rating scales used to measure attributions for success worded the attributions positively, e.g. "Your ability", "Your desire to do well in everything you do". Conversely, the rating scales measuring attributions for failure utilized negative wording, e.g. "Your lack of ability", "Your lack of desire to do well in everything you do". Because of the differential wording, the rating scales for both success and failure were scored in the same direction with scores of 1 and 2 indicating "Not a Cause", scores of 3 and 4 indicating "Somewhat a Cause", and scores of 5 and 6 indicating "Very Much a Cause".

The choice of the independent rating scale was based on the results of a study by Elig and Frieze (1979) in which they compared three methods of measuring attributions: open-ended measures, percentage
measures, and independent rating scales. They found that independent rating scales have moderately good intermethod correlations with percentage measures, do not force intercorrelations among attributions, have good face validity, and provide generally better support for some of the basic theoretical relationships between causal attributions and future expectancies and affect than the percentage or open-ended measures. They concluded that the independent rating scale is a clearly superior method, at least for college students solving anagrams or doing similar tasks in which the basic causal categories are well understood.

In addition to completing the seven rating scales, the subjects were asked to state which of the seven causes contributed most to their passing (or failing) the anagrams test and to answer four questions about this cause. These four questions were based on an attributional style questionnaire developed by Seligman, Abramson, Semmel, and von Baeyer (1979) and were designed to measure the internality, controllability, stability, and generality of the attribution. Initial studies using this scale have found that the dimensional bipolar scales are accurate measures of conceptually meaningful dimensions (Forsyth & McMillan, 1981). Coefficient alphas for the composite index were .72 for negative outcomes and .75 for positive outcomes. The corresponding coefficient alphas for the individual dimensions ranged from .46 to .69 for negative outcomes and from .44 to .58 for positive outcomes (Metalsky & Abramson, 1981). Finally, the subjects were asked to state which of the seven causes contributed least to their passing (or failing the anagrams test. The rating scales used in this study can be
found in Appendix A.

Procedure

Subjects were tested in 12 groups of 15-20 subjects each. Half of the male subjects and half of the female subjects in each group were randomly assigned to the Success Condition. The remaining subjects in each group were assigned to the Failure Condition. The Success Condition consisted of 20 "easy" anagrams, all of which had a median solution time of less than 10 seconds. The Failure Condition consisted of 20 "difficult" anagrams, all of which had a median solution time of more than 150 seconds (Tresselt & Mayzner, 1966). Lists of the anagrams, their solutions, and their median solution times can be found in Appendix B.

As suggested by Bandura (1977a), a detailed description of the task was given to the subjects prior to their being asked to rate their self-efficacy beliefs with regard to the anagrams task. The verbal instructions to the subjects were as follows:

In a few minutes you will be asked to do a task consisting of 20 5-letter anagrams. An anagram is a group of scrambled letters that can be unscrambled to form a word. The anagrams that you are being asked to solve range from easy to difficult. All of the anagrams can be solved and there is only one correct answer for each anagram. A group of introductory psychology students who took this same test last quarter received scores ranging from 0 to 20 with a mean score of 10. Fifty-one percent of the students passed the test and 49 percent of them failed.
After all of the subjects had answered the question regarding their self-efficacy beliefs, they were instructed to begin working on the anagrams test. At the end of 10 minutes, the subjects were asked to give their test booklets to the experimenter for scoring. The test was scored by adding the number of correct solutions. Therefore, scores ranged from 0 to 20. The number of correct solutions and the word "Pass" or "Fail" were written on the front of the test booklet. The criterion for "Pass" was 10 or more correct solutions. Subjects who got 9 or fewer anagrams correct received a "Fail". The booklets were returned to the subjects along with the attribution questionnaires. Subjects were asked to complete the questionnaires and return all materials to the experimenter.

Debriefing

After all of the subjects completed the attribution questionnaires and returned all materials to the experimenter, they were debriefed as to the purpose of the experiment, the hypotheses under investigation, and the manipulation used by the experimenter to create the Success and Failure Conditions. The subjects were also asked to share their interpretations of and reactions to the procedures and were given a brief explanation of self-efficacy theory and attribution theory.

Hypotheses

The hypotheses formulated for this study were as follows:

1. High self-efficacy subjects will attribute success to ability more than low self-efficacy subjects.

2. High self-efficacy subjects will attribute success to stable effort more than low self-efficacy subjects.
3. High self-efficacy subjects will attribute failure to lack of effort more than low self-efficacy subjects.

4. High self-efficacy subjects will attribute failure to task difficulty more than low self-efficacy subjects.

5. Low self-efficacy subjects will attribute success to task difficulty more than high self-efficacy subjects.

6. Low self-efficacy subjects will attribute failure to lack of ability more than high self-efficacy subjects.

7. High self-efficacy subjects will see the causes of their success as more internal, controllable, stable, and general than low self-efficacy subjects.

8. High self-efficacy subjects will see the causes of their failure as more external, uncontrollable, unstable, and specific than low self-efficacy subjects.

9. Female subjects will make more external attributions than male subjects.

Analysis

The data from Experiment 1 were analyzed using two three-way (outcome X sex X self-efficacy) multivariate analyses of variance. This statistical method was chosen because of the large number of dependent variables in this study and to control for Type I errors. The first multivariate analysis of variance used outcome (success or failure), sex (male or female), and self-efficacy (high or low) as the independent variables with the seven attributional measures of ability, task difficulty, stable effort, interest in the task, immediate effort, mood, and motivation as the dependent variables. The second multivari-
ate analysis of variance used outcome, sex, and self-efficacy as the independent variables and internality, controllability, stability, and generality as the dependent variables.

**Experiment 2**

In Experiment 2, subjects were identified as either high-assertive or low-assertive. All subjects were asked to make self-efficacy judgments with regard to a number of assertive behaviors and also were asked to give causal attributions for their anticipated performance or nonperformance of each of the assertive behaviors.

**Subjects**

The subjects were 187 students (68 males and 119 females) enrolled in the introductory psychology course at The Ohio State University during winter quarter, 1982. Subjects who considered themselves to be either high-assertive or low-assertive were solicited by sign-up sheets. All subjects received course credit for their participation.

**Instruments**

The College Self-Expression Scale (Galassi, DeLo, Galassi, & Bastien, 1974) was used to classify subjects as high-assertive or low-assertive. Adaptations of the items from the Gambrill-Richey Assertion Inventory (Gambrill & Richey, 1975) were used as the stimuli for subjects' ratings of their self-efficacy beliefs and causal attributions for performance.

**College Self-Expression Scale.** The College Self-Expression Scale (Galassi et al., 1974) is a 50-item, self-report measure which utilizes a 5-point Likert format. The scale was designed to measure three dimensions of assertiveness: (a) positive assertiveness, (b) negative
assertiveness, and (c) self-denial. Positive assertiveness is defined as expressing feelings of love, affection, admiration, approval, and agreement. Negative assertiveness consists of expressions of justified anger, disagreement, dissatisfaction, and annoyance. Self-denial includes overapologizing, excessive interpersonal anxiety, and exaggerated concern for others' feelings. The scale measures these three dimensions in a variety of interpersonal contexts, including family, strangers, business relations, authority figures, same-sex peers, and opposite-sex peers.

The scale consists of 21 positively worded items and 29 negatively worded items. Scoring is accomplished by summing all positively worded items and reverse scoring and summing all negatively worded items. High scores indicate an assertive response pattern; low scores indicate a nonassertive response pattern.

The scale was normed on four separate samples: (a) 91 students enrolled in an introductory psychology course, (b) 47 upper division undergraduate and beginning graduate students, (c) 41 elementary school student teachers, and (d) 82 secondary school student teachers. Test-retest reliability coefficients of .89 and .90 were obtained for the first two samples over a 2-week period (Galassi et al., 1974).

Construct validity was established by correlating the scores of college students on the College Self-Expression Scale with their scores on the Adjective Check List (Gough & Heilbrun, 1965). It was found that the College Self-Expression Scale scores correlated positively with scores on the Number Checked, Defensiveness, Favorable, Self-Confidence, Achievement, Dominance, Intracception, Heterosexuality,
Exhibition, Autonomy, and Change Scales and correlated negatively with scores on the Unfavorable, Succorance, Abasement, Deference, and Counseling Readiness Scales (Galassi et al., 1974). Further evidence of construct validity was obtained by correlating scores on the College Self-Expression Scale with scores on the aggression-hostility scales of the Buss-Durkee Inventory (Buss, 1961). As expected, the total aggression-hostility scale was unrelated to the assertiveness scale for both males and females. The only significant and positive correlation was between the assertiveness scale and the verbal aggression scale for the female sample (Galassi & Galassi, 1975).

Concurrent validity has been established by correlating the College Self-Expression Scale scores of student teachers with ratings of assertiveness by their supervisors (Galassi et al., 1974) and of dormitory residents with ratings by their residence hall counselors (Galassi & Galassi, 1974). Significant correlations of .19 and .33 respectively were obtained. Validation using the method of contrasted groups indicated that students who sought personal adjustment counseling were significantly less assertive than students who sought vocational-educational counseling only and students who did not seek counseling (Galassi & Galassi, 1974).

Finally, Galassi, Hollansworth, Radecki, Gay, Howe, and Evans (1976) found that the College Self-Expression Scale was able to differentiate low-assertive students from both high-assertive students and a combined group of moderate- and high-assertive students on a behavioral performance test of assertiveness. Low-assertive students were differentiated from both groups on assertive content, percentage of eye
contact, and subjective feelings of anxiety. There were no significant differences in response latency between groups.

Gambrill-Richey Assertion Inventory. The Gambrill-Richey Assertion Inventory (Gambrill & Richey, 1975) is a 40-item, self-report measure that was designed to measure (a) the probability of engaging in a given assertive behavior, (b) the level of anticipated discomfort or anxiety while engaging in that behavior, and (c) the situations in which the individual would like to be more assertive. The items represent eight categories of assertive behavior: (a) turning down requests, (b) expressing personal limitations, (c) initiating social contacts, (d) expressing positive feelings, (e) handling criticism, (f) differing with others, (g) assertion in service situations, and (h) giving negative feedback. Dividing discomfort and response probability into high and low values generates four profiles: (a) high discomfort-low assertion (unassertive), (b) high discomfort-high assertion (anxious performer), (c) low discomfort-low assertion (doesn't care), and (d) low discomfort-high assertion (assertive).

Normative data were collected from three samples of male and female undergraduate students (N=313, N=295, N=49) and 19 women participating in a 6-week assertion training program. The test-retest reliability coefficients for the sample of 49 undergraduates were .87 for discomfort and .81 for response probability over a 5-week period (Gambrill & Richey, 1975).

Validity was assessed by comparing the clinical and undergraduate samples (Gambrill & Richey, 1975). The mean discomfort score for the 19 women before training was significantly higher than the mean
discomfort score for the undergraduates. There were no significant
differences between groups for the response probability scores. After
training, however, the clinical group decreased significantly in both
discomfort and response probability scores, whereas no change occurred
in the reliability sample.

In this study, adaptations of the 40 items from the Gambrill-Rich­
ey Assertion Inventory were used as the stimuli for subjects' ratings
of their self-efficacy beliefs and causal attributions for performance.
The items were adapted by adding contextual information to each item
so as to enhance the subjects' ability to make self-efficacy judgments.
For example, "Ask a favor of someone" was rewritten as "Ask a class­
mate whom you don't know very well if you can borrow his or her class
notes because you missed the last lecture". According to Bandura
(1977a), expectations of self-efficacy are situation-specific rather
than dispositional. Therefore, it is important that individuals asked
to make efficacy judgments be given as much information as possible
about the expected behavior and the circumstances in which the beha­
vior is to be performed.

Self-efficacy was rated on the same rating scale as that used in
Experiment 1. Because causal attributions for assertive behavior have
not previously been measured, attributions were assessed by focusing
on causal dimensions rather than unitary causes. As noted by previous
researchers (Abramson et al., 1978; Elig & Frieze, 1979; Forsyth &
McMillan, 1981; Ross, 1977), traditional measures of causal attribu­
tions have several methodological problems, especially when used to de­
termine the causal attributions people make in new situations. First,
structured measures limit the subjects' responses to those causes that the researcher anticipates and includes in the measure. Second, open-ended measures are time-consuming, require the use of trained coders, and have poor intertest reliability and validity. Third, coding attributions into abstract attributional dimensions may depend more on the grammatical form of the attribution than on its actual meaning. Fourth, using specific cause ratings to make inferences about dimensions is problematic since specific causes (e.g. ability, effort) do not directly map onto dimensions (e.g. internality, stability). To circumvent these difficulties, causal attributions for the subjects' anticipated performance or nonperformance of each assertive behavior were assessed using a technique developed by Seligman et al., (1979). In this technique, individuals are asked to imagine themselves in the given situation, write one major cause of their behavior in a free-choice format, and rate the cause on four Likert-type scales measuring internality, controllability, stability, and generality.

Copies of the College Self-Expression Scale, the adapted items from the Gambrill-Richey Assertion Inventory, written instructions to the subjects for rating their self-efficacy and making causal attributions for performance, and the rating scales used in this experiment can be found in Appendix C.

Procedure

Subjects were tested in groups of 25-30. Upon arriving at the experiment, each subject was given copies of the College Self-Expression Scale and the adapted items from the Gambrill-Richey Assertion Inventory as well as answer sheets on which to record their answers to the
College Self-Expression Scale items and their ratings of self-efficacy and causal attributions in response to the adapted items from the Gambrill-Richey Assertion Inventory.

The subjects were asked to read carefully the instructions for both of the questionnaires and were told that they could ask questions about completion of the questionnaires at any time during the testing session. They were instructed to give all materials to the experimenter when they had completed both questionnaires. Upon returning all materials to the experimenter, each subject was given a brief written explanation of self-efficacy theory, attribution theory, and the purpose of the experiment. A copy of this explanation can be found in Appendix C.

Hypotheses

The hypotheses formulated for this study were as follows:

1. High self-efficacy subjects will differ from low self-efficacy subjects in the causal attributions they make for performance/nonperformance of assertive behaviors.

2. High-assertive subjects will differ from low-assertive subjects in the causal attributions they make for performance/nonperformance of assertive behaviors.

3. High-assertive subjects will have higher self-efficacy than low-assertive subjects.

Due to the exploratory nature of this study, it is not possible to predict empirically the exact attributional dimensions that will be used by high-assertive versus low-assertive and high self-efficacy versus low self-efficacy subjects to classify the causal attribution they
made for their anticipated performance/nonperformance of assertive behaviors. However, based on theoretical knowledge and assumptions about assertiveness and self-efficacy, the following hypotheses were formulated:

4. High-assertive and high self-efficacy subjects will be more internal in their attributions than low-assertive and low self-efficacy subjects.

5. High-assertive and high self-efficacy subjects will see the causes of their behavior as being more controllable than will low-assertive and low self-efficacy subjects.

6. High-assertive and high self-efficacy subjects will see the causes of their behavior as being more stable than will low-assertive and low self-efficacy subjects.

7. High-assertive and high self-efficacy subjects will see the causes of their behavior as being more general than will low-assertive and low self-efficacy subjects.

Analysis

The data from Experiment 2 were analyzed using a three-way (assertiveness X sex X self-efficacy) multivariate analysis of variance. This statistical method was chosen because of the use of multiple dependent variables and to control for Type I errors. The multivariate analysis of variance used assertiveness (high or low), sex (male or female), and self-efficacy (high or low) as the independent variables with internality, controllability, stability, and generality as the dependent variables.
CHAPTER IV

RESULTS

The results from this study will be considered in two parts. Part one will consider the results of Experiment 1, in which subjects made causal attributions for their success or failure on an anagrams task. These data include the results from the multivariate analysis of variance on the specific causal attributions of ability, task difficulty, stable effort, interest in task, immediate effort, mood, and motivation as well as the results from the multivariate analysis of variance on the causal dimensions of internality, controllability, stability, and generality.

The second part of the results section will consider the data from Experiment 2, in which subjects rated their self-efficacy with regard to a number of assertive behaviors and made causal attributions for their anticipated performance or nonperformance of these behaviors. These data include the results from the multivariate analysis of variance on the causal dimensions of internality, controllability, stability, and generality.

Experiment 1
Specific Attributions

Two subjects failed to complete the self-efficacy question and were therefore deleted from the study. Both of these subjects were female. One of the subjects had been assigned to the Success Condition;
the other was in the Failure Condition. Since the multivariate analysis of variance (MANOVA) procedure does not use observations with missing values, only 184 observations were used in the analysis. The number of subjects in each experimental group is shown in Table 1.

In preparing the data for analysis, subjects were classified as either high or low in self-efficacy on the basis of their answers to the question concerning their level of confidence in their ability to solve the anagrams correctly. Subjects with scores of 4, 5, or 6 were classified as high in self-efficacy; subjects with scores of 1, 2, or 3 were classified as low in self-efficacy. This system of classification was used due to the small number of subjects who were in the extreme groups. Only 14 subjects (7.6% of the sample) rated themselves as "Not Confident at All" (1 or 2) and 47 subjects (25.5% of the sample) rated themselves as "Very Confident" (5 or 6). On the other hand, 123 subjects (66.9% of the sample) rated themselves as somewhat confident (3 or 4). A frequency distribution of the self-efficacy scores is shown in Table 2.

To test the hypotheses (1-6) that individuals who are high in self-efficacy differ from those who are low in self-efficacy in their causal attributions for success and failure, the data were subjected to a three-way (outcome X sex X self-efficacy) multivariate analysis of variance (MANOVA). The MANOVA is summarized in Table 3. This analysis yielded a significant main effect for outcome (F=100.52, p < .0001). No other main effects or interactions were significant. Thus, the hypothesized differences in causal attributions between individuals high and low in self-efficacy were not supported.
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<thead>
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<th>Success Condition</th>
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<th>Failure Condition</th>
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<td></td>
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<td>Female</td>
<td>Male</td>
<td>Female</td>
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<td>30</td>
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<tr>
<td>Low Self-efficacy</td>
<td>10</td>
<td>19</td>
<td>15</td>
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Table 2
Distribution of Self-efficacy Scores

<table>
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<th>% of Total N</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>1.6</td>
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<tr>
<td>2</td>
<td>11</td>
<td>6.0</td>
</tr>
<tr>
<td>3</td>
<td>42</td>
<td>22.9</td>
</tr>
<tr>
<td>4</td>
<td>81</td>
<td>44.0</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
<td>17.9</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>7.6</td>
</tr>
</tbody>
</table>
Table 3
Multivariate Analysis of Variance on the Specific Attribution Measures (Outcome X Sex X Self-efficacy)

<table>
<thead>
<tr>
<th>Effects</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome (A)</td>
<td>100.52</td>
<td>.0001</td>
</tr>
<tr>
<td>Sex (B)</td>
<td>.89</td>
<td>.5173</td>
</tr>
<tr>
<td>Self-efficacy (C)</td>
<td>.49</td>
<td>.8408</td>
</tr>
<tr>
<td>A X B</td>
<td>1.53</td>
<td>.1583</td>
</tr>
<tr>
<td>A X C</td>
<td>1.39</td>
<td>.2106</td>
</tr>
<tr>
<td>B X C</td>
<td>.77</td>
<td>.6159</td>
</tr>
<tr>
<td>A X B X C</td>
<td>1.65</td>
<td>.1234</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 7, 170.
Given the significant multivariate main effect for outcome, the univariate analyses were examined for each dependent variable (ability, task difficulty, stable effort, interest in task, immediate effort, mood, and motivation). It was found that the main effect for outcome was significant for each of the seven dependent variables. The results of these analyses are summarized in Table 4.

Due to the failure to obtain a significant multivariate effect for sex, the data were collapsed across sex and subjected to a two-way (outcome X self-efficacy) MANOVA. The results of the MANOVA are summarized in Table 5. As in the three-way MANOVA, only the main effect for outcome was significant ($F=107.93$, $p<.0001$). The main effect for self-efficacy and the outcome X self-efficacy interaction were not significant. Examination of the univariate analyses for each of the dependent variables revealed that the main effect for outcome was significant for all seven attributions. The results of these analyses are summarized in Table 6.

The data were sorted by outcome (success and failure) and the means and standard deviations for each attribution were computed. The means and standard deviations are presented in Table 7. High scores (5 and 6) indicate that the attribution was "Very Much a Cause" of the outcome, whereas low scores (1 and 2) indicate that the attribution was "Not a Cause" of the outcome. Scores of 3 and 4 indicate that the subjects saw the attribution as being "Somewhat a Cause" of their performance. The means for subjects in the Success Condition range from 3.47 for mood to 4.87 for motivation. For subjects in the Failure Condition, the means range from 1.30 for motivation to 3.87 for task
Table 4
Univariate Analyses of Variance on the Main Effect of Outcome for the Outcome X Sex X Self-efficacy MANOVA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>69.75</td>
<td>50.47</td>
<td>.0001</td>
</tr>
<tr>
<td>Task Difficulty</td>
<td>10.35</td>
<td>6.37</td>
<td>.0125</td>
</tr>
<tr>
<td>Stable Effort</td>
<td>256.65</td>
<td>227.39</td>
<td>.0001</td>
</tr>
<tr>
<td>Interest in Task</td>
<td>76.48</td>
<td>39.44</td>
<td>.0001</td>
</tr>
<tr>
<td>Immediate Effort</td>
<td>126.13</td>
<td>69.91</td>
<td>.0001</td>
</tr>
<tr>
<td>Mood</td>
<td>53.18</td>
<td>23.10</td>
<td>.0001</td>
</tr>
<tr>
<td>Motivation</td>
<td>460.47</td>
<td>664.11</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 1, 176.
Table 5
Multivariate Analysis of Variance on the Specific Attribution Measures
(Outcome X Self-efficacy)

<table>
<thead>
<tr>
<th>Effects</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome (A)</td>
<td>107.93</td>
<td>.0001</td>
</tr>
<tr>
<td>Self-efficacy (B)</td>
<td>.59</td>
<td>.7695</td>
</tr>
<tr>
<td>A X B</td>
<td>1.19</td>
<td>.3086</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 7, 174.
Table 6
Univariate Analyses of Variance on the
Main Effect of Outcome for the Outcome X Self-efficacy MANOVA

| Variable          | Mean Square | F    | p <  
|-------------------|-------------|------|------
| Ability           | 78.57       | 56.76| .0001|
| Task Difficulty   | 9.18        | 5.46 | .0206|
| Stable Effort     | 279.75      | 245.95| .0001|
| Interest in Task  | 85.09       | 44.25| .0001|
| Immediate Effort  | 137.39      | 76.37| .0001|
| Mood              | 56.79       | 24.14| .0001|
| Motivation        | 493.85      | 711.09| .0001|

Note: The degrees of freedom for all tests were 1, 180.
Table 7
Means and Standard Deviations of the
Specific Attribution Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Success Condition</th>
<th>Failure Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Ability</td>
<td>92</td>
<td>4.59</td>
</tr>
<tr>
<td>Task Difficulty</td>
<td>91</td>
<td>4.38</td>
</tr>
<tr>
<td>Stable Effort</td>
<td>92</td>
<td>4.42</td>
</tr>
<tr>
<td>Interest in Task</td>
<td>92</td>
<td>4.07</td>
</tr>
<tr>
<td>Immediate Effort</td>
<td>92</td>
<td>4.50</td>
</tr>
<tr>
<td>Mood</td>
<td>92</td>
<td>3.47</td>
</tr>
<tr>
<td>Motivation</td>
<td>92</td>
<td>4.87</td>
</tr>
</tbody>
</table>
Examination of the means revealed that the subjects in the Success Condition made higher attributional ratings than subjects in the Failure Condition on all of the attributional measures. Subjects in the Success Condition saw all of the attributions as being "Somewhat a Cause" of their performance. The attributions to motivation (M=4.87), ability (M=4.58), and immediate effort (M=4.50) approached being considered "Very Much a Cause" of the successful subjects' performance. Subjects in the Failure Condition saw ability and task difficulty as being "Somewhat a Cause" of their performance, whereas stable effort, interest in the task, immediate effort, mood, and motivation were considered "Not a Cause" of their performance. However, interest in the task (M=2.60) and immediate effort (M=2.63) approached being considered as "Somewhat a Cause" for the failing subjects. All of the standard deviations were relatively small (1.58 or less), indicating that the individual scores of subjects within each condition tended to be similar.

Attributional Dimensions

To test the hypotheses (7-9) that high self-efficacy subjects differ from low self-efficacy subjects in their causal attributions for success and failure and that females are more external in their attributions than males, the data were subjected to a three-way (outcome X sex X self-efficacy) MANOVA. Two subjects failed to complete all four attributional measures and were excluded from the analysis. One of these subjects was a female in the Failure Condition; the other was a male in the Failure Condition. Thus, the MANOVA was conducted on 184
observations. The results of this MANOVA are summarized in Table 8. This analysis yielded a significant main effect for outcome \((F=40.50, p<.0001)\). No other main effects or interactions were significant, although the outcome \(\times\) sex interaction approached significance \((F=2.11, p<.0819)\). Thus, none of the hypothesized differences between groups were supported.

Due to the significant multivariate main effect for outcome, the univariate analyses were examined for each dependent variable (internality, controllability, stability, and generality). Although significant by multivariate analysis, the main effect for outcome reached univariate significance on only three attributional dimensions: (a) controllability \((F=9.13, p<.0029)\), (b) stability \((F=48.74, p<.0001)\), and (c) generality \((F=126.27, p<.0001)\). The main effect for outcome for the dependent variable of internality was not significant \((F=.62, p<.4326)\). The results of the univariate analyses are summarized in Table 9.

Due to the failure to obtain a significant multivariate effect for sex, the data were collapsed across sex and subjected to a two-way (outcome \(\times\) self-efficacy) MANOVA. The results of this MANOVA are summarized in Table 10. As in the three-way MANOVA, only the main effect for outcome was significant \((F=42.73, p<.0001)\). Neither the main effect for self-efficacy nor the outcome \(\times\) self-efficacy interaction approached significance. Examination of the univariate analyses for each of the dependent variables revealed that the main effect for outcome was significant for the attributional dimensions of controllability \((F=11.92, p<.0007)\), stability \((F=49.14, p<.0001)\), and generality
Table 8
Multivariate Analysis of Variance on the Attributional Dimension Measures
(Outcome X Sex X Self-efficacy)

<table>
<thead>
<tr>
<th>Effects</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome (A)</td>
<td>40.50</td>
<td>.0001</td>
</tr>
<tr>
<td>Sex (B)</td>
<td>.89</td>
<td>.4731</td>
</tr>
<tr>
<td>Self-efficacy (C)</td>
<td>.84</td>
<td>.5046</td>
</tr>
<tr>
<td>A X B</td>
<td>2.11</td>
<td>.0819</td>
</tr>
<tr>
<td>A X C</td>
<td>.41</td>
<td>.8043</td>
</tr>
<tr>
<td>B X C</td>
<td>.53</td>
<td>.7123</td>
</tr>
<tr>
<td>A X B X C</td>
<td>.70</td>
<td>.5923</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 4, 173.
Table 9
Univariate Analyses of Variance on the Main Effect of Outcome for the Outcome X Sex X Self-efficacy MANOVA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internality</td>
<td>1.09</td>
<td>.62</td>
<td>.4326</td>
</tr>
<tr>
<td>Controllability</td>
<td>17.97</td>
<td>9.13</td>
<td>.0001</td>
</tr>
<tr>
<td>Stability</td>
<td>65.18</td>
<td>48.74</td>
<td>.0029</td>
</tr>
<tr>
<td>Generality</td>
<td>222.69</td>
<td>126.27</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 1, 176.
Table 10
Multivariate Analysis of Variance on the Attributional Dimension Measures
(Outcome X Self-efficacy)

<table>
<thead>
<tr>
<th>Effect</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome (A)</td>
<td>42.73</td>
<td>.0001</td>
</tr>
<tr>
<td>Self-efficacy (B)</td>
<td>1.07</td>
<td>.3728</td>
</tr>
<tr>
<td>A X B</td>
<td>.59</td>
<td>.6711</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 4, 177.
(F=132.80, p<.0001). The outcome main effect for internality was not significant (F=1.11, p<.2941). The results of these univariate analyses are summarized in Table 11.

The data were sorted by outcome (success and failure) and the means and standard deviations for each attributional dimension were computed. The means and standard deviations are presented in Table 12. High scores indicate greater internality, controllability, stability, and generality; low scores indicate greater externality, uncontrollability, instability, and specificity. Examination of the means revealed that subjects in the Success Condition made significantly more attributions to controllable, stable, and general causes than subjects in the Failure Condition. Furthermore, subjects in the Success Condition tended to be more internal in their attributions. Although this trend was not significant, it was in the predicted direction. All of the standard deviations were relatively small (1.51 or less), indicating that the individual scores of subjects within each conditions tended to be similar.

Summary

None of the hypotheses made for Experiment 1 were supported. Neither the main effects for self-efficacy and sex nor the outcome X self-efficacy interaction effects were significant in any of the MANOVAs. Due to the failure to obtain significant multivariate effects, the effects were not discussed univariately. In summary, high self-efficacy subjects did not attribute their success or failure on the anagrams test significantly different from low self-efficacy subjects and females were not more external in their attributions than males.
Table 11
Univariate Analyses of Variance on the Main Effect of Outcome for the Outcome X Self-efficacy MANOVA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internality</td>
<td>2.01</td>
<td>1.11</td>
<td>.2941</td>
</tr>
<tr>
<td>Controllability</td>
<td>23.44</td>
<td>11.92</td>
<td>.0007</td>
</tr>
<tr>
<td>Stability</td>
<td>65.73</td>
<td>49.14</td>
<td>.0001</td>
</tr>
<tr>
<td>Generality</td>
<td>235.56</td>
<td>132.80</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 1, 180.
Table 12
Means and Standard Deviations of the Attributional Dimension Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Success Condition</th>
<th>Failure Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Internality</td>
<td>92</td>
<td>4.40</td>
</tr>
<tr>
<td>Controllability</td>
<td>92</td>
<td>4.52</td>
</tr>
<tr>
<td>Stability</td>
<td>92</td>
<td>5.09</td>
</tr>
<tr>
<td>Generality</td>
<td>92</td>
<td>4.72</td>
</tr>
</tbody>
</table>
The main effect for outcome was, however, significant in all of the MANOVAs. Due to the finding of highly significant multivariate effects, the effects were examined and discussed univariately. Results of the univariate analyses revealed that subjects in the Success Condition significantly differed from subjects in the Failure Condition on all of the specific attributional measures (ability, task difficulty, stable effort, interest in the task, immediate effort, mood, and motivation) and on three of the four attributional dimensions (controllability, stability, and generality). Success and failure subjects did not significantly differ on the attributional dimension of internality. Examination of the means of the specific attribution measures showed that subjects in the Success Condition made higher attributional ratings than subjects in the Failure Condition. Subjects in the Success Condition saw all of the attributions as being "Somewhat a Cause" of their success. Subjects in the Failure Condition saw ability and task difficulty as being "Somewhat a Cause" of their failure, whereas stable effort, interest in task, immediate effort, mood, and motivation were not seen as causes of their performance on the anagrams test.

**Experiment 2**

**College Self-Expression Scale**

For purposes of analysis, subjects were classified as either high-assertive or low-assertive on the basis of their scores on the College Self-Expression Scale. This was done in order to use the assertiveness variable as an independent variable in the MANOVA. The dichotomization was accomplished by means of a median split. Descriptive statistics for the subjects' College Self-Expression Scale scores are summarized in Table 13.
Table 13

Descriptive Statistics for the Assertiveness Variable

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>184</td>
</tr>
<tr>
<td>Mean</td>
<td>126.64</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>22.42</td>
</tr>
<tr>
<td>Median</td>
<td>128.00</td>
</tr>
<tr>
<td>Mode</td>
<td>128.00</td>
</tr>
<tr>
<td>Smallest Value</td>
<td>62.00</td>
</tr>
<tr>
<td>Largest Value</td>
<td>172.00</td>
</tr>
</tbody>
</table>
Subjects who had scores above the median (Mdn=128) were classified as high-assertive and subjects who had scores at or below the median were classified as low-assertive. Once dichotomized, the assertiveness measure was used as one of the classification variables in a 2 (assertiveness: high versus low) X 2 (sex: male versus female) X 2 (self-efficacy: high versus low) MANOVA.

Multivariate Analysis of Variance

Thirty subjects failed to complete all of the attributional measures for the adapted items from the Gambrill-Richey Assertion Inventory. Since the MANOVA procedure does not use observations with missing values, only 154 observations were used in the analysis.

For purposes of analysis, subjects were classified as high-assertive or low-assertive on the basis of their scores on the College Self-Expression Scale. This procedure has been previously discussed. Subjects were classified as either high or low in self-efficacy on the basis of their answers to the question "How confident are you that you can successfully perform this behavior?". Since the purpose of this study was to examine between-groups differences, the mean self-efficacy score for each subject was computed and used to classify the subject as either high or low in self-efficacy. Subjects with scores of 4, 5, or 6 were classified as high in self-efficacy; subjects with scores of 1, 2, or 3 were classified as low in self-efficacy.

The scores on the four attributional measures (internality, controllability, stability, and generality) were treated in the same manner as the self-efficacy scores. That is, in order to facilitate between-groups comparisons, the mean score for each attributional measure
was computed for each subject and the mean scores were used as the dependent variables in the analysis.

An attempt to do the three-way (assertiveness X sex X self-efficacy) MANOVA indicated that all of the subjects were classified as high in self-efficacy. Therefore, self-efficacy could not be used as an independent variable in the analysis and the hypotheses (1, 4, 5, 6, and 7) concerning differences in attributions between subjects high in self-efficacy and subjects low in self-efficacy could not be tested. Furthermore, the hypothesis (3) that high-assertive subjects would be higher in self-efficacy than low-assertive subjects was not supported.

In order to test the hypotheses (2, 4, 5, 6, and 7) concerning differences in attributions between high-assertive and low-assertive subjects, the data were subjected to a two-way (assertiveness X sex) MANOVA. The results of this MANOVA are summarized in Table 14. The analysis yielded a significant main effect for assertiveness ($F=4.23$, $p<.0028$). Neither the main effect for sex nor the assertiveness X sex interaction were significant.

Due to the significant multivariate main effect for assertiveness, the univariate analyses were examined for each attributional dimension (internality, controllability, stability, and generality). It was found that the main effect for assertiveness was significant for each of the dependent variables. The results of the univariate analyses are summarized in Table 15.

In order to determine the direction of the differences in attributions of high-assertive and low-assertive subjects, the data were sorted by assertiveness (high and low) and the means and standard
Table 14
Multivariate Analysis of Variance on the Attributional Dimension Measures
(Assertiveness X Sex)

<table>
<thead>
<tr>
<th>Effect</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertiveness (A)</td>
<td>4.23</td>
<td>.0028</td>
</tr>
<tr>
<td>Sex (B)</td>
<td>.45</td>
<td>.7691</td>
</tr>
<tr>
<td>A X B</td>
<td>.30</td>
<td>.8760</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 4, 147.
Table 15
Univariate Analyses of Variance on the
Main Effect of Assertiveness for the
Assertiveness X Sex MANOVA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internality</td>
<td>5.09</td>
<td>11.62</td>
<td>.0008</td>
</tr>
<tr>
<td>Controllability</td>
<td>4.96</td>
<td>10.84</td>
<td>.0012</td>
</tr>
<tr>
<td>Stability</td>
<td>4.33</td>
<td>13.37</td>
<td>.0004</td>
</tr>
<tr>
<td>Generality</td>
<td>4.11</td>
<td>5.93</td>
<td>.0161</td>
</tr>
</tbody>
</table>

Note: The degrees of freedom for all tests were 1, 150.
deviations are presented in Table 16. High scores indicate greater internality, controllability, stability, and generality; low scores indicate greater externality, uncontrollability, instability, and specificity. Examination of the means revealed that high-assertive subjects made significantly more internal, controllable, stable, and general attributions than low-assertive subjects. All of the standard deviations were relatively small (.92 or less), indicating that the individual scores of subjects within each group tended to be similar.

Summary

Due to the fact that all of the subjects classified themselves as high in self-efficacy, hypothesis 1, that high self-efficacy subjects would differ from low self-efficacy subjects in the causal attributions made for performance/nonperformance of assertive behaviors could not be tested. Hypothesis 3, that high-assertive subjects would be higher in self-efficacy than low-assertive subjects, was not supported.

Hypothesis 2, that high-assertive subjects would differ from low-assertive subjects in the causal attributions made for performance/nonperformance of assertive behaviors, was supported. Furthermore, hypotheses 4 through 7, that high-assertive and high self-efficacy subjects would see the causes of their behavior as being more internal, controllable, stable, and general than low-assertive and low self-efficacy subjects, were partially supported. Examination of the multivariate and univariate analyses indicated that high-assertive subjects significantly differed from low-assertive subjects on the attributional dimensions of internality, controllability, stability, and generality.
Table 16
Means and Standard Deviation of the
Attributional Dimension Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Assertiveness</th>
<th>Low Assertiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Internality</td>
<td>88</td>
<td>4.61</td>
</tr>
<tr>
<td>Controllability</td>
<td>88</td>
<td>4.78</td>
</tr>
<tr>
<td>Stability</td>
<td>88</td>
<td>4.99</td>
</tr>
<tr>
<td>Generality</td>
<td>88</td>
<td>4.30</td>
</tr>
</tbody>
</table>
Examination of the mean scores for each group on these four dimensions revealed that high-assertive subjects made attributions to more internal, controllable, stable, and general causes than low-assertive subjects. Conversely, low-assertive subjects made attributions to more external, uncontrollable, unstable, and specific causes than high-assertive subjects. The hypothesized differences between high and low self-efficacy subjects could not be tested due to the fact that all of the subjects classified themselves as high in self-efficacy.
CHAPTER V

DISCUSSION

The discussion is focused on three major areas. First, the results of this study are summarized and interpreted. Second, the methodological limitations of this study are pointed out and discussed. Third, implications for counseling and future research are outlined.

Summary and Interpretation of the Results

Experiment 1

According to the present findings, neither self-efficacy nor sex affected the subjects' causal attributions for their success or failure on the anagrams test. However, outcome (success or failure) had a highly significant effect on the subjects' subsequent causal attributions for their performance. Examination of the univariate analyses of variance indicated that outcome had a significant effect on each of the specific attributional measures (ability, task difficulty, stable effort, interest in the task, immediate effort, mood, and motivation) as well as three of the four measures of attributional dimensions (controllability, stability, and generality).

Self-efficacy. Hypotheses 1 through 6 predicted that high self-efficacy subjects would attribute their performance to different specific attributional factors than would low self-efficacy subjects. More specifically, it was hypothesized that high self-efficacy subjects
would attribute their success to ability and stable effort and their failure to lack of effort and task difficulty, whereas low self-efficacy subjects would attribute their success to task ease and their failure to lack of ability. Furthermore, hypotheses 7 and 8 predicted that high self-efficacy subjects would see the causes of their success as more internal, controllable, stable, and general and the causes of their failure as more external, uncontrollable, unstable, and specific than would low self-efficacy subjects.

These hypotheses had been formulated based on Bandura's (1977a) discussion of the effects of an individual's cognitive appraisals for performance, including causal attributions, on self-efficacy expectations. Bandura postulated that success was more likely to enhance self-efficacy and failure to reduce self-efficacy when performance was attributed to internal factors (e.g. ability and effort) as opposed to external factors (e.g. task difficulty). It would seem that the reverse would also hold true. That is, if attributions for success and failure to internal versus external factors differentially affect subsequent self-efficacy expectations, then it would be expected that individuals with differing self-efficacy expectations would attribute their success or failure to different causes. The present study, however, indicated that individuals whose self-efficacy expectations differed with regard to an achievement task did not make differential attributions for their success or failure.

Because there is no previous research on the relationship between causal attributions and self-efficacy expectations, it is difficult to determine if the present findings reflect methodological or theoretical
limitations. Since the methodological limitations of this study will be discussed later in this discussion, the present focus will be on possible theoretical limitations. First, it is possible that there is no relationship between causal attributions for performance and self-efficacy beliefs. Second, it may be that causal attributions affect subsequent self-efficacy expectations but that prior self-efficacy expectations do not affect subsequent causal attributions for performance.

The literature dealing with causal attributions and expectancy of success, however, suggests that there should exist a relationship between causal attributions and self-efficacy beliefs and that this relationship should be bidirectional. Although, theoretically, expectancy of success is a global concept and self-efficacy is situation-specific, the research on causal attributions and expectancy of success has utilized a situation-specific measure of expectancy of success. That is, they have asked subjects to rate how confident they were that they could successfully complete a certain task (e.g. pass an anagrams test, pass a college course examination). The results of these studies consistently have shown that initially confident subjects attribute success to ability and failure to bad luck, whereas initially unconfident subjects attribute success to good luck and failure to lack of ability. Furthermore, this body of research has indicated that there is a relationship between the attributional dimension of stability and expectancy of success. In summary, the hypothesized relationship between causal attributions and self-efficacy appears to be theoretically sound and the failure to obtain evidence of this relationship in the present study may be due to methodological problems.
Sex. Hypothesis 9 predicted that females would be more external in their attributions than males. In the present study, males and females did not differentially attribute the causes of their success and failure on the anagrams test. Previous research in this area has had mixed results. While several researchers (Bar-Tal & Darom, 1979; Bar-Tal & Frieze, 1977; Feather, 1969; Nicholls, 1975; Simon & Feather, 1973) found significant sex differences in attributions, others (Feather & Simon, 1971a, 1972) did not. These conflicting results may be due to such factors as the specific sample of subjects used in the experiment and the nature of the experimental task.

Outcome. The results of this study indicated that subjects in the Success Condition and subjects in the Failure Condition made significantly different attributions for their performance. Successful subjects saw motivation, ability, and immediate effort as being the primary causes of their success and lack of ability and task difficulty as the primary causes of their failure. While the current findings support the primacy of ability, task difficulty, and effort as causal attributions for performance (Weiner et al., 1971), they also suggest that motivation is considered as an important cause of success, at least for college students doing an anagrams test.

With regard to attributional dimensions, successful subjects saw the causes of their performance as being significantly more controllable, stable, and general than did subjects who failed. Success and failure subjects did not significantly differ on the internal-external dimension. Taken together with the results concerning specific attributions, these results shed some light on the subjective meaning of
the attributions for the subjects in this experiment. More specifically, the subjects in this experiment saw motivation, ability, and immediate effort as controllable, stable, and general causes, whereas they considered lack of ability and task difficulty to be uncontrollable, unstable, and specific.

Finally, examination of the means for all 11 of the attributional measures showed that subjects in the Success Condition (M=4.46) made higher attributional ratings than subjects in the Failure Condition (M=2.86). That is, subjects in the Success Condition saw the majority of the attributions as being "Somewhat a Cause" of their performance, whereas subjects in the Failure Condition saw the majority of the attributions as being "Not a Cause" of their performance. This is consistent with the findings of Bar-Tal and Frieze (1977) but contrary to the findings of Gilmor and Minton (1974) who found that subjects who succeeded on an achievement task made lower attributional ratings than subjects who failed.

**Experiment 2**

Due to the fact that all subjects rated themselves as being high in self-efficacy, self-efficacy could not be used as an independent variable and hypothesis 1 could not be tested. Hypothesis 1 predicted that high self-efficacy subjects would attribute their anticipated performance or nonperformance of assertive behaviors differently than low self-efficacy subjects. Hypothesis 3, which stated that high-assertive subjects would have higher self-efficacy than low-assertive subjects, was not supported by the results of this study.
The results of the two-way (assertiveness X sex) MANOVA indicated that high-assertive subjects and low-assertive subjects significantly differed in the attributions made for their anticipated performance/nonperformance of assertive behaviors and examination of the univariate analyses indicated that this was true for all of the attributorial dimensions measured (internality, controllability, stability, and generality). Neither sex nor the assertiveness X sex interaction were significant, indicating that males and females make similar attributions for their assertive and nonassertive behaviors.

**Assertiveness.** Hypothesis 2, which stated that high-assertive subjects would differ from low-assertive subjects in their causal attributions for assertive behaviors, was supported. Hypotheses 4, 5, 6, and 7, which predicted that high-assertive and high self-efficacy subjects would see the causes of their behavior as more internal, controllable, stable, and general, were partially supported. That is, the results indicated that high-assertive subjects saw the causes of their behavior as more internal, controllable, stable, and general than did low-assertive subjects.

The results of the present study lend support to the theory that unassertiveness, at least for college students, may involve cognitive factors. Schwartz and Gottman (1976) found that low-assertive subjects made fewer positive and more negative self-statements than moderate- and high-assertive subjects despite the fact that the groups did not differ in their knowledge of an appropriate assertive response or in their hypothetical delivery of assertive responses. However, Bruch (1981) found that only high-assertive subjects were competent in
knowledge of content and informal delivery of refusal responses. In support of Schwartz and Gottman, Lange and Jakubowski (1976) suggested that individuals who endorse Ellis' (1962) irrational beliefs, especially "I must be loved and approved of by significant others in my life", "I must be completely competent at everything I attempt", and "It is terrible when things do not go the way I want them to go", are low in assertiveness.

Alden and Safran (1978) found that subjects who endorsed Ellis' irrational beliefs were less assertive and reported greater anxiety during the role-playing of assertive situations. Similarly, Alden and Cappe (1981) found that unassertive subjects were more likely to endorse Ellis' irrational beliefs and rated themselves as less assertive, less effective, and more anxious in role-play situations than high-assertive subjects. The high- and low-assertive subjects did not, however, differ in their behavioral competence while role-playing. Finally, Derry and Stone (1979) found that treatment of unassertiveness by Cognitive Self-Statement Training was associated with fewer irrational beliefs, an internal locus of control, and increased self-reported assertiveness. The present findings indicate that high-assertive subjects attribute the causes of their assertive behavior to internal, controllable, stable, and general factors, whereas low-assertive subjects attribute the causes of their behavior to external, uncontrollable, unstable, and specific factors.

Sex. The present study failed to find significant differences between males and females in their causal attributions for assertive behaviors. This finding suggests that high- and low-assertive people make similar attributions for their behavior regardless of their sex.
Self-efficacy. In the present study, all of the subjects classified themselves as high in self-efficacy. Therefore, the hypothesized differences between high self-efficacy subjects and low self-efficacy subjects could not be evaluated.

Alden, Safran, and Weideman (1978) reported that many of the unassertive subjects in their study initially reported a sense of personal helplessness or powerlessness (lack of self-efficacy) in assertion situations. These reports decreased following assertion training. They suggested that assertion training provided clients with skills to use in awkward situation, thereby increasing their sense of control over the situation. The results of the present study, however, indicate that both high- and low-assertive individuals feel confident in their ability to behave assertively in a variety of situations. Therefore, differences in assertiveness cannot be accounted for by differences in self-efficacy expectations. It may be that, while both high- and low-assertive individuals feel confident in their ability to behave assertively, low-assertive individuals fail to actually behave assertively due to cognitive factors (e.g. irrational beliefs, attributions for performance, negative self-statements) that block effective performance or a skills deficit.

Methodological Limitations

In this section, the methodological limitations of this study will be discussed. The discussion will focus on three areas: (a) the sample of subjects, (b) the instrumentation, and (c) the data analysis.
Sample

It has already been noted that a majority of subjects in Experiment 1 (69.5%) and all of the subjects in Experiment 2 were classified as being high in self-efficacy. In Experiment 1, this occurred due to the large number of subjects (66.9% of the sample) who rated themselves as somewhat confident in their ability to pass the anagrams test. Therefore, it was decided to include this group of subjects in the analysis. Including these subjects, however, may have concealed differences between the extreme groups in their causal attributions for success and failure. The fact that all of the subjects in Experiment 2 were classified as high in self-efficacy precluded any examination of differences between individuals high and low in self-efficacy in their causal attributions for the performance/nonperformance of assertive behaviors.

There are several possible reasons for the subjects' ratings of their self-efficacy beliefs obtained in the present study. First, subjects may not have been given enough information about the anagrams task or the assertion situations to make meaningful self-efficacy ratings. Bandura (1977a) stated that individuals asked to make efficacy judgments need to be given as much information as possible about the expected behavior and the circumstances in which the behavior is to be performed. In Experiment 1, it is possible that the subjects may have had little previous experience with solving anagrams and did not receive enough detailed information about the task from the experimenter to be able to rate themselves as either "Very Confident" or "Not Confident at All" in their ability to pass the test. It may have been
helpful to give the subjects a practice set of anagrams prior to the test anagrams. In Experiment 2, a lack of detailed information about each assertion situation may have affected the subjects' ability to make meaningful self-efficacy judgments.

Second, college students may be higher in self-efficacy than individuals in the general population. It may be that nonstudents would be more differentiated in their self-efficacy expectations, particularly with regard to their ability to perform assertively.

Third, college students who sign up for psychological experiments at the beginning of the quarter may be higher in self-efficacy than college students in general. Samples of students taken at the middle or end of the quarter may be more differentiated in their self-efficacy expectations.

**Instrumentation**

**Self-efficacy ratings.** Previous self-efficacy research has utilized a 10-point rating scale on which subjects make their self-efficacy judgments. The use of a 6-point scale in the present study may not have given the subjects an adequate range of choices with regard to their self-efficacy beliefs. Perhaps the use of a 10-point scale would have more clearly differentiated high and low self-efficacy subjects.

**Gambrill-Richey Assertion Inventory.** The 40 items from the Gambrill-Richey Assertion Inventory were adapted for use in this study by adding contextual information to each item. This was done to facilitate the subjects' making of self-efficacy judgments. As noted earlier, however, the subjects may have needed even more information in order to make meaningful self-efficacy judgments. Furthermore, subjects
may not have been able to visualize themselves in the specific situations and were therefore unable to give meaningful responses to the self-efficacy and attributional questions.

Data Analysis

Dichotimization of subjects into high and low self-efficacy groups was accomplished by classifying subjects with scores of 3 or less as low in self-efficacy and subjects with scores of 4 or higher as high in self-efficacy. The lack of extreme groups may have obscured differences between the groups in Experiment 1. However, due to the small number of subjects in the extreme groups, any analyses utilizing these groups would have been problematic.

Another criticism of this study is the failure to map the specific attributions made by the subjects onto the attributional dimensions. In Experiment 1, it was found that successful subjects attributed their performance primarily to motivation, ability, and immediate effort and saw the causes of their success as controllable, stable, and general. On the other hand, subjects who failed attributed their performance primarily to lack of ability and task difficulty and saw the causes of their failure as uncontrollable, unstable, and specific. The failure to further analyze the personal interpretations of the specific attributions may well be cited as a conceptual limitation rather than a methodological one.

Implications for Counseling and Future Research

Counseling

The results of this study indicated that the subjects who succeeded at the anagrams test made different causal attributions for their
performance than did subjects who failed and that high-assertive subjects made different causal attributions for their performance than did low-assertive subjects. While these data do not directly lead to any implications for counseling nor lend support to any particular counseling technique, it is possible that reattribution training may be a useful counseling technique for clients with poor academic performance and unassertive clients.

In Experiment 1, successful subjects attributed their performance to motivation, ability, and immediate effort, whereas subjects who failed attributed their performance to lack of ability and task difficulty. Furthermore, successful subjects saw the causes of their performance as more controllable, stable, and general than did subjects who failed. It may be that clients with poor academic performance attribute their failure to lack of ability and task difficulty and their successes to ability and ease of task. Helping these clients to reattribute their failure to low motivation and/or lack of effort and their successes to high motivation and/or high effort may give them more of a feeling of control over their academic performance and consequently help them to improve their performance. Previous studies (Andrews & Debus, 1978; Dweck, 1975) using attribution retraining in achievement situations have found that subjects trained to attribute their failure to insufficient effort subsequently exhibited improved performance (e.g. greater persistence on task).

In Experiment 2, it was found that high-assertive subjects saw the causes of their performance in assertion situations as more internal, controllable, stable, and general than did low-assertive subjects.
Derry and Stone (1979) reported a study in which unassertive clients were trained to attribute their behavior to personal (internal) rather than situational (external) factors. The results indicated that this training was not effective in helping clients to acquire and/or maintain assertive behaviors. Derry and Stone concluded that either the attribution training procedures were not effective or the measurement of attributions in the study was not sufficiently sensitive. Despite the failure of Derry and Stone to find significant increases in assertive behavior in subjects given attribution training, it is suggested that additional outcome studies using attribution retraining as a treatment for unassertiveness be conducted. Given the finding in the present study that high-assertive and low-assertive subjects differed on all four attributional dimensions measured, future research on attribution retraining as a treatment for unassertiveness should focus on training unassertive clients to attribute their behavior to more internal, controllable, stable, and general causes.

**Future Research**

Due to the failure to obtain a significant main effect for self-efficacy or significant self-efficacy interaction effects in Experiment 1, it is suggested that a systematic program of research be conducted to test the hypothesized relationship between causal attributions and self-efficacy expectations. Bandura (1977a) postulated that causal attributions for success or failure on a particular task to internal versus external factors differentially affect subsequent self-efficacy expectations with regard to that task. It is suggested that future research initially focus on the effects of causal attributions
on self-efficacy expectations as proposed by Bandura before attempting to examine the effects of self-efficacy beliefs on causal attributions as was done in the present study. Such a program of research could begin with studies designed to determine if attributions for success and failure to internal versus external factors differentially affect subsequent self-efficacy expectations. Additional studies could then examine: (a) differences in self-efficacy expectations generated by attributions to effort versus attributions to ability, (b) differences in self-efficacy expectations generated by attributions for success to task difficulty versus attributions to task ease, and (c) differences in self-efficacy expectations generated by attributions for success to high effort versus low effort.

Another area in which further research seems warranted is the examination of attributional differences between high-assertive and low-assertive individuals. The results of the present study indicated that high-assertive individuals make attributions to internal, controllable, stable, and general factors, whereas low-assertive individuals make attributions to external, uncontrollable, unstable, and specific factors. Initially, studies using open-ended response measures of attributions should be conducted in order to identify the specific causal attributions used by assertive and unassertive individuals to explain their behavior in assertion situations. After a number of specific attributions have been identified, studies using structured response measures of attributions should be conducted to determine the primary attributions used by assertive and unassertive individuals to explain their behavior. With regard to the finding that both high- and low-assertive
subjects were high in self-efficacy, further research is needed to determine why some people who are confident in their ability to perform assertive behaviors do perform them while others do not.

Finally, further research is needed to determine the accuracy of the theoretical placement of specific attributions in certain attributional dimensions. Questions such as: Is ability really seen by individuals as an internal-stable-uncontrollable-general factor? Is task difficulty seen as an external-stable-uncontrollable-specific factor? Is ability in an achievement situation interpreted differently than ability in a social situation? Is ability in a language-oriented achievement situation interpreted the same as ability in a mathematics-oriented achievement situation? need to be answered.
APPENDIX A

RATING SCALES FOR

LEVEL AND STRENGTH OF SELF-EFFICACY

AND

CAUSAL ATTRIBUTIONS FOR PERFORMANCE
Based on the information that you have just been given about this anagram test and any other information that you have about your ability to solve such problems, please indicate on the scale below how confident you are that you will pass this test.

<table>
<thead>
<tr>
<th>NOT CONFIDENT AT ALL</th>
<th>VERY CONFIDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
Please rate the extent to which each of the following factors caused you to pass the anagram test. Circle the number of the answer that best describes how you feel about each cause.

1. **YOUR ABILITY**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

2. **THE EASE OF THE TASK**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

3. **THE AMOUNT OF EFFORT YOU PUT FORTH IN EVERYTHING YOU DO**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

4. **YOUR INTEREST IN THE TASK**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

5. **THE AMOUNT OF EFFORT YOU PUT FORTH IN DOING THIS PARTICULAR TASK**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

6. **YOUR GOOD MOOD**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

7. **YOUR DESIRE TO DO WELL IN EVERYTHING YOU DO**
   
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6
1. Which of the seven causes contributed most to your passing this test?

   a. Is this cause of your success due to something about you or something about other people or circumstances?

      TOTALLY DUE TO
      OTHER PEOPLE OR 1  2  3  4  5  6 TO ME
      CIRCUMSTANCES

   b. Is this cause of your success something you can control or something over which you have no control?

      TOTALLY NOT
      UNDER MY 1  2  3  4  5  6 MY CONTROL

   c. If you took a test like this one in the future, would this cause again be present?

      WILL NEVER
      AGAIN BE 1  2  3  4  5  6 BE PRESENT

   d. Is this cause of your success something that affects only your performance on this or similar tasks or does it influence other areas in your life?

      INFLUENCES ONLY
      THIS PARTICULAR 1  2  3  4  5  6 AREAS IN MY LIFE
      SITUATION

2. Which of the seven causes contributed least to your passing this test?

3. Please write a short statement concerning your ideas about the purpose of this experiment and any other comments you may have about this experiment. Thank you for participating in this experiment!
Please rate the extent to which each of the following factors caused you to fail the anagram test. Circle the number of the answer that best describes how you feel about each cause.

1. YOUR LACK OF ABILITY
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

2. THE DIFFICULTY OF THE TASK
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

3. THE LACK OF EFFORT YOU PUT FORTH IN EVERYTHING YOU DO
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

4. YOUR LACK OF INTEREST IN THE TASK
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

5. THE LACK OF EFFORT YOU PUT FORTH IN DOING THIS PARTICULAR TASK
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

6. YOUR BAD MOOD
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6

7. YOUR LACK OF DESIRE TO DO WELL IN EVERYTHING YOU DO
   Not A  Somewhat  Very Much
   Cause  A Cause  A Cause
   1  2  3  4  5  6
1. Which of the seven causes contributed *most* to your failing this test? ____________________________________________________________

a. Is this cause of your failure due to something about you or something about other people or circumstances?
   
   
   TOTALLY DUE TO
   
   OTHER PEOPLE OR 1  2  3  4  5  6 TO ME
   
   CIRCUMSTANCES

b. Is this cause of your failure something you can control or something over which you have no control?

   
   
   TOTALLY NOT
   
   UNDER MY 1  2  3  4  5  6 MY CONTROL
   
   CONTROL

c. If you took a test like this one in the future, would this cause again be present?

   
   
   WILL NEVER
   
   AGAIN BE 1  2  3  4  5  6 BE PRESENT
   
   PRESENT

d. Is this cause of your failure something that affects only your performance on this or similar tasks or does it influence other areas in your life?

   
   
   INFLUENCES ONLY
   
   THIS PARTICULAR 1  2  3  4  5  6 AREAS IN MY LIFE
   
   SITUATION

2. Which of the seven causes contributed *least* to your failing this test? ____________________________________________________________

3. Please write a short statement concerning your ideas about the purpose of this experiment and any other comments you may have about this experiment. Thank you for participating in this experiment!
APPENDIX B

ANAGRAMS, SOLUTIONS, AND MEDIAN SOLUTION TIMES
<table>
<thead>
<tr>
<th>Success</th>
<th>ANAGRAM</th>
<th>SOLUTION</th>
<th>MEDIAN SOLUTION TIME IN SECONDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>egujd</td>
<td>judge</td>
<td>3.0</td>
</tr>
<tr>
<td>2.</td>
<td>aewtr</td>
<td>water</td>
<td>3.0</td>
</tr>
<tr>
<td>3.</td>
<td>beahc</td>
<td>beach</td>
<td>3.0</td>
</tr>
<tr>
<td>4.</td>
<td>ifnlg</td>
<td>fling</td>
<td>3.5</td>
</tr>
<tr>
<td>5.</td>
<td>eocvi</td>
<td>voice</td>
<td>4.0</td>
</tr>
<tr>
<td>6.</td>
<td>odelm</td>
<td>model</td>
<td>4.5</td>
</tr>
<tr>
<td>7.</td>
<td>ntrai</td>
<td>train</td>
<td>5.0</td>
</tr>
<tr>
<td>8.</td>
<td>orlab</td>
<td>labor</td>
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</tr>
<tr>
<td>9.</td>
<td>ntjau</td>
<td>jaunt</td>
<td>5.0</td>
</tr>
<tr>
<td>10.</td>
<td>adtri</td>
<td>triad</td>
<td>5.0</td>
</tr>
<tr>
<td>11.</td>
<td>euohs</td>
<td>house</td>
<td>6.0</td>
</tr>
<tr>
<td>12.</td>
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<td>drink</td>
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</tr>
<tr>
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<td>iuegd</td>
<td>guide</td>
<td>7.0</td>
</tr>
<tr>
<td>14.</td>
<td>ultfa</td>
<td>fault</td>
<td>7.0</td>
</tr>
<tr>
<td>15.</td>
<td>milbc</td>
<td>climb</td>
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<td>16.</td>
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<td>giant</td>
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<td>ihrca</td>
<td>chair</td>
<td>8.5</td>
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<td>18.</td>
<td>lcoht</td>
<td>cloth</td>
<td>9.0</td>
</tr>
<tr>
<td>19.</td>
<td>tonba</td>
<td>baton</td>
<td>9.5</td>
</tr>
<tr>
<td>20.</td>
<td>hroac</td>
<td>roach</td>
<td>9.5</td>
</tr>
<tr>
<td>ANAGRAM</td>
<td>SOLUTION</td>
<td>MEDIAN SOLUTION TIME IN SECONDS</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>1. glaei</td>
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</tr>
<tr>
<td>2. nrcui</td>
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<tr>
<td>3. aebrl</td>
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</tr>
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<td></td>
</tr>
<tr>
<td>11. gtnao</td>
<td>tango</td>
<td>240.0</td>
<td></td>
</tr>
<tr>
<td>12. rigon</td>
<td>groin</td>
<td>240.0</td>
<td></td>
</tr>
<tr>
<td>13. aitop</td>
<td>patio</td>
<td>218.0</td>
<td></td>
</tr>
<tr>
<td>14. hugol</td>
<td>ghoul</td>
<td>240.0</td>
<td></td>
</tr>
<tr>
<td>15. yenpo</td>
<td>peony</td>
<td>240.0</td>
<td></td>
</tr>
<tr>
<td>16. gsrua</td>
<td>sugar</td>
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<tr>
<td>17. tanbo</td>
<td>baton</td>
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<td>18. tinga</td>
<td>giant</td>
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<td>19. jutan</td>
<td>jaunt</td>
<td>240.0</td>
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</tr>
<tr>
<td>20. datir</td>
<td>triad</td>
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</table>
APPENDIX C

COLLEGE SELF-EXPRESSION SCALE

GAMBRILL-RICHEY ASSERTION INVENTORY

RATING SCALES FOR SELF-EFFICACY AND ATTRIBUTIONS

DEBRIEFING
PLEASE NOTE:

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These consist of pages:

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Instructions for Rating Self-efficacy and Making Causal Attributions

Please try to vividly imagine yourself performing each of the assertive behaviors that follow. Next, answer each of the following questions for each behavior. Please record your answers on the rating scales that are on your answer sheets. Do not write on the questionnaire.

a. How confident are you that you can successfully perform this behavior? Circle the appropriate number.

<table>
<thead>
<tr>
<th>NOT CONFIDENT AT ALL</th>
<th>VERY CONFIDENT</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

b. What is the one major cause of your behavior in this situation? That is, why are you able (or not able) to perform this behavior? Write the one major cause of your behavior here. _______________

c. Is the cause of your behavior in this situation due to something about you or something about the other person or circumstances?

TOTALLY DUE TO THE OTHER PERSON OR 1 2 3 4 5 6 TOTALLY DUE TO ME CIRCUMSTANCES

d. Is the cause of your behavior in this situation something that will change or something that will not change?

WILL CHANGE 1 2 3 4 5 6 WILL NOT CHANGE

e. Is the cause of your behavior in this situation something you can control or something you cannot control?

TOTALLY NOT UNDER MY CONTROL 1 2 3 4 5 6 TOTALLY UNDER MY CONTROL

f. Is the cause of your behavior in this situation something that just affects you in this and similar situations or does it also influence other areas of your life?

INFLUENCES JUST THIS PARTICULAR SITUATION 1 2 3 4 5 6 INFLUENCES ALL SITUATIONS IN MY LIFE

Please refer back to these questions as often as necessary when completing the rating scales on your answer sheet.
Debriefing

This experiment was based on two psychological theories: (a) self-efficacy theory and (b) attribution theory. Self-efficacy theory is concerned with people's beliefs that they can successfully perform the behaviors necessary to produce the outcomes that they desire. For specific tasks for which people expect positive outcomes and have the appropriate skills, self-efficacy beliefs are hypothesized as the major determinants of people's choice of activities and behavior settings, the amount of effort they will expend, and the length of time they will persist on a task.

Attribution theory is concerned with people's perceptions of the causes of their behavior. Research has shown that causal attributions for behavior have important consequences for people's feelings, expectations, and behavior.

The purpose of this experiment is to explore the effects of people's causal attributions for behavior on their self-efficacy beliefs. More specifically, I am interested in determining if high self-efficacy, high-assertive people make different causal attributions than low self-efficacy, low-assertive people for their behavior in situations requiring assertive responses.

Thank you for participating in this experiment!!!
LIST OF REFERENCES


Feather, N.T., & Simon, J.G. Causal attributions for success and failure in relation to expectations of success based upon selective or manipulative control. *Journal of Personality*, 1971, 39, 527-541. (b)


