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**LA THÈSE A ÉTÉ
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THE MANAGEMENT OF ABILITY ATTRIBUTIONS
VIA DEFENSIVE AND COUNTERDEFENSIVE
ATTRIBUTIONAL STRATEGIES

by

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Thesis presented to the School of
Graduate Studies of the University
of Ottawa as partial fulfilment of
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ABSTRACT

Two studies designed to examine the management of ability attributions via defensive and counterdefensive attributional strategies were undertaken. The first study, based on the concept that perceptions of causality may often be modified through the operation of self-serving biases, investigated the impact of present and possible future evaluation on causal attributions. It was predicted that future evaluation by others of the subjects' performance and attributions would attenuate the self-enhancing and self-protective tendencies of subjects. To test these predictions, 80 female high school students were divided into four groups, each of which completed a set of Success or Failure anagrams under one of four experimental situations; 1. Success; 2. Success with future evaluations; 3. Failure; 4. Failure with future evaluation. In condition 2, subjects assigned less credit to themselves by attributing significantly less responsibility for their effort, but not for their ability. Also, as predicted, they attributed their success more to luck than task difficulty. In condition 4, as predicted, they attributed their failure significantly less to task difficulty than to luck. However, the subjects failed to attribute their failure to lack of ability or lack of effort.

The second study investigated the impact of experimental modifications of individuals' self-esteem via feedback from a Social Perceptiveness Task provided to them subsequent to their success or failure on a skill-oriented anagram task. It was predicted that the tendency of individuals to self-enhance/self-protect themselves under success/failure conditions can be moderated via ego-related feedback concerning important previous success/failure outcomes. To test these predictions, one hundred and twenty female high school students were divided into four experimental and two control groups. All groups completed a Social Perceptiveness Task. Out of the four experimental groups, two groups completed a simple anagram task which guaranteed success, while the remaining two groups completed a difficult anagram task which produced failure. One experimental group each from the success and failure conditions was provided with feedback to the effect that their previous performance on the Social Perceptiveness Task had been successful, while the remaining two groups were informed that their previous performance had been a failure. Of the two control groups, one group completed the success anagram task, while the other completed the anagrams which produced failure. These two groups did not participate in further experimental manipulations. As predicted, the success

group who received ego-enhancing feedback attributed significantly less responsibility to Internal Factors (Ability and Effort) than those who received ego-diminishing feedback. Also, as predicted, the failure group who received ego-enhancing feedback attributed significantly less responsibility to External Factors (Luck and Task Difficulty) than those who received ego-diminishing feedback. The ego-enhancing feedback groups under success and failure conditions, as per predictions, assigned significantly less attributions than the ego-diminishing feedback groups.

In combination, the results of the two studies provided support for the operation of motivationally based self-serving biases in causal attributions.

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INTRODUCTION

The manner in which individuals attribute the cause for their success and failure is receiving increasing attention. Although attribution theorists have affirmed that the inference process is frequently logical and objective, they have also noted that perceptions of causality may often be modified through the operation of self-serving biases. These biases may perform at least two functions: an ego-enhancing function when an individual takes credit for success, and an ego-protective function when an individual denies responsibility for failure.

While some experimenters have noted a tendency for individuals to make self-attributions for their own behaviours when they result in positive outcomes, and external attributions for their own behaviours when they result in negative outcomes, some investigators have obtained results directly opposite to those predicted by a defensive attributional analysis.

An attempt is made in this present study to investigate whether this evidence may be explicable in terms of a broadened self-serving bias formulation. In other words, it is suggested that self-serving attributions frequently may be viewed as public self-presentations designed to maximize public esteem, and that under certain circumstances

such esteem needs may be best served by accepting more responsibility for negative outcomes, and less responsibility for positive outcomes.

While some research attention has already been devoted to this proposition, results have been unclear. Thus, this study is an attempt to bridge the gaps in the literature in this area.

The present thesis consists of two studies. The first study, whose main purpose is to examine the role of the impact of evaluation apprehension on attributions of responsibility, is presented in chapters I to IV. Chapter I presents the review of the literature, chapter II describes the experimental procedures of the study, chapter III presents the results, and chapter IV discusses them and presents recommendations for future research.

Because the findings of the first study were only partially supportive of the theoretical model on which it was based, a second study was undertaken whose principal objective was to replicate certain aspects of the first study and, in addition, to examine the impact of ego-related feedback conditions on subjects' causal attributions.

Chapter V presents the rationale and hypotheses of the second study, chapter VI the experimental procedures, chapter VII the results, and chapter VIII the discussion of results.

CHAPTER I

REVIEW OF THE LITERATURE

Attribution theory deals with the information people use in making causal inferences, and with what they do with this information to answer causal questions.

The theory has developed within social psychology primarily as a means of dealing with questions of social perception. The theory also deals with questions of self-perception. But it will also be clear that attribution theory is relevant to other fields of psychology, particularly those in which self-concepts are regarded as important.

"One is inclined to attribute to oneself good things, but one suffers when one has to attribute to oneself something that is not so good" (Harvey, Ickes, & Kidd, 1976, p.16). The principle described in the foregoing observation has received considerable attention in attribution research. There is a lot of evidence that individuals tend to see themselves as being more "personally" responsible for their success than their failures, and to view "external" factors such as luck or task difficulty as being more responsible for their failures. By taking credit for their successes and denying responsibility for failures, individuals can bolster and protect their

ego or self-esteem (Arkin, Gleason, & Johnston, 1976; Miller, 1976; Snyder, Stephen & Rosenfield, 1976; Wortmen, Costanzo & Witt, 1973).

While most discussions on perception of causality have assumed the existence of self-serving biases, some authors have questioned the principle's theoretical and empirical underpinnings, e.g., Bem, 1972; Kelly, 1971. In a review of self-serving biases in causal attribution, Miller & Ross (1975) have suggested that individuals who tend to explain success and failure differently may not necessarily reflect the influence of motivationally based "self-serving" biases. Instead, they argued that the existing data are as easily interpreted within a rational, information-processing framework. More specifically, they contend that three factors operating in isolation or in combination may cause individuals to take more personal responsibility for success than failure. First, individuals are more likely to accept responsibility for expected outcomes than unexpected outcomes and, in general, people expect success and not failure. Second, individuals discern a closer covariation between behaviour and outcomes in the case of increasing success than in the case of constant failure. Third, individuals tend to hold an erroneous conception of contingency, which lead them to associate control primarily with the occurrence of the desired outcome (i.e., success) rather

than any actual degree of contingency.

Nevertheless, in concluding their review they have stated that:

"It would be clearly premature, however, to deny the possibility of self-serving causal attributions . . . for it is too intuitively appealing to be summarily abandoned. The challenge remains for future researchers to assess the relative explanatory values of the motivational and non-motivational interpretations of asymmetrical causal attributions."
(Miller & Ross, 1975, p. 224)

Since the publication of Miller & Ross's (1975) review, a considerable amount of new research has appeared, and much of these studies appear to challenge Miller & Ross's (1975) alternative non-motivational re-interpretations, and provides evidence regarding the influence of motivational biases in the causal inference process. The nature of this challenge will be detailed further on in this thesis via discussion of the works of Harvey, Arkin, Gleason & Johnston (1974), Luginbuhl, Crowe & Kahan (1975), Arkin, Gleason & Johnston (1976), Snyder, Stephen & Rosenfield (1976), Miller (1976), and Sicoly & Ross (1977).

The empirical data that are often cited in discussions of self-serving attributional biases come from two general traditions. The first is from a series of interpersonal influence studies which examined the relationship between causal ascription and the success of influence

attempts. Studies of the relationship between causal ascriptions and outcomes in skill-oriented performance tasks provide the second source of relevant data. The following review of literature will critically examine the experimental evidence from research on interpersonal influence and skill-oriented task performance that is consistent with an interpretation in terms of self-serving biases in causal attributions.

Interpersonal Influence Research

In interpersonal influence studies, subjects are asked to instruct a target person on how to perform some task. Following their influence attempts, subjects are informed that the individual they have been advising has either succeeded or failed, and are asked to judge how much of the observed change in the other's behaviour is due to the influence attempt. The subjects' perceptions of the target persons' performance are then assessed.

Harvey, Arkin, Gleason & Johnston (1974) had college students serve as therapists or as observers in a study "concerned with the ability of the ordinary person to give therapy to another person having a minor phobia." Based on the self-esteem model, Harvey et al. (1974) predicted that therapist subjects would show a greater tendency to accept responsibility for positive than for negative

outcomes, regardless of expected outcome.

The data indicated that when a positive outcome was expected, therapist subjects tended to make greater self-attributions of responsibility for positive than for negative therapy outcomes; however, when a negative outcome was expected, therapist subjects' self-attributions did not differ as a function of the observed therapy outcomes. In accounting for their failure to find any evidence for self-esteem biases in the negative expectancy condition, Harvey et al. suggested that since a negative outcome was expected, therapist subjects might have felt little or no threat to their self-concepts. In addition, Harvey et al. pointed out that subjects in all conditions might not have felt personally responsible for the outcome since they had no choice in determining the type of therapy given; consequently, any threat to subjects' self-esteem may have been diminished.

Arkin et al. (1976), using a procedure similar to that of Harvey et al. (1974), manipulated therapist subjects' perceptions of expected (positive or negative) and actual (positive or negative) therapy outcomes. In addition, after reading brief descriptions of four types of therapy, subjects were:

- a) allowed to choose which therapeutic outline they wanted to use and thought would be most

effective (high choice) or

- b) merely asked to use one of the four conditions (low choice).

In fact, the actual content of the outline was identical for all subjects.

As predicted from a self-esteem model of responsibility attribution, subjects in the positive outcome conditions accepted personal responsibility for the outcome regardless of perceived choice or expectancy. Furthermore, in the negative outcome conditions subjects attributed relatively little responsibility to themselves for the outcome, except when there were no plausible alternative causal explanations, that is, except in the high perceived choice-positive expectancy condition. These results are consistent with Heider's (1958) proposition that in choosing an acceptable attribution, the attributor must take two factors into account: "(1) the reason has to fit the wishes of the person, and (2) the datum has to be plausibly derived from the reason." (p. 172)

Using a procedure similar to that employed by Harvey et al. (1974), Federoff and Harvey (1976) examined the effects of objective self-awareness and expected (positive or negative) and observed (positive or negative) therapy outcomes on causal interpretations. In this study, subjects delivered the therapeutic instructions in the

presence (high objective self-awareness) or absence (low objective self-awareness) of a camera.

Federoff and Harvey (1976) reported that in high objective self-awareness conditions, subjects' self-attributions of causality were greater for positive than for negative observed therapy outcomes. In the low objective self-awareness conditions, subjects' self-attributions did not differ as a function of expected or observed outcome. In discussing their findings, Federoff and Harvey suggested that high self-awareness may have exaggerated the arousal of self-esteem motives produced by the observed outcome manipulation. As a consequence, subjects in a state of high self-awareness accepted more credit for a positive than for a negative outcome, while "these tendencies may have been much less pronounced when subjects experienced a state of low self-awareness" (Federoff & Harvey, 1976, p. 344).

Studies which are not considered in Miller and Ross's (1975) review provide evidence concerning the possible operation of self-esteem biases in the causal inference process. From the preceding discussion it would appear that the studies by Harvey et al. (1974), Arkin et al. (1976) and Federoff & Harvey (1976) provided results consistent with the proposition that under certain conditions, people do make self-serving attributions.

It is, therefore, difficult to understand how the results of these three studies could be accounted for by Miller & Ross's (1975) alternative nonmotivational re-interpretations. For example, while subjects were encouraged to adapt the therapeutic outlines to their own styles of presentation, Harvey et al. (1974) and Federoff & Harvey (1976) reported that subjects' ratings of perceived effort on the task did not differ across conditions. It is, therefore, difficult to make a compelling reinterpretation of the data of these two studies in terms of a response-outcome covariation. Besides, the peculiar experimental task used by Harvey et al. (1974), Arkin et al. (1976) and Federoff & Harvey (1976) precluded the possibility that subjects' causal attributions would be influenced by previous experiences. Also, evidence gathered indicated that expectancies about the outcome of therapy were successfully manipulated in all three studies. It, therefore, seems unlikely that prior experiences, expectations, or the perceived covariation between response and outcome could account for the pattern of results shown by these studies.

In an investigation of self-serving biases, Beckman (1973) randomly assigned education students to the roles of participant, teachers, or observers. Beckman (1973) assumed that causal attributions for a student's performance made by uninvolved observers would not be ego biased and

would, therefore, serve as a baseline against which to compare the possible self-serving attributions made by involved participant teachers. On open-ended dependent variable measures, it was found that teachers, particularly in the repetitively low performance condition, were more likely to attribute the student's low performance to situational factors, than were observers. Beckman viewed this result as support for a self-serving attribution hypothesis. However, Beckman (1973) also found that teachers and observers in the improved performance condition did not differ in their assignments of causality to the teacher or student, rather than to the situation. In addition, teachers were more likely to accept responsibility for the student's consistently low performance (i.e., were more likely to make counter-defensive attributions); observers showed no such difference.

Since teachers accepted more responsibility for failure than for success, Miller & Ross (1975) cited Beckman's (1973) results as evidence against defensive attributional process. However, an examination of the stimulus conditions created in Beckman's (1973) study suggests two variables, viz., perception of one's own performance as the primary object of study, and the potential for public invalidation of one's self-presentation; these together might account for the results. That is, the study

focused explicitly on the instructors' ability to present the material to the student, and all subjects rated the instructors' performance after each of three trials. Since teachers knew the experimenter would likely compare their trial-by-trial performance ratings with those made by observers, it is possible that the teachers may have made modest, socially acceptable self-attributions.

Ross, Bierbrauer & Polly (1974) reported results consistent with that of Beckman's (1973) findings. These investigators also examined the causal attributions made by teachers and observers, following a student's successful or unsuccessful performance. Ross et al.'s study differed from the Beckman (1973) study in two important ways. First, teachers were told their performances were being taped for later evaluation. Second, the attributions made by professional teachers and undergraduate students with no teaching experience were compared; the authors reasoned that a teaching task should be more ego involving for professional teachers than for inexperienced undergraduate students. Accordingly, the causal attributions for educational outcomes made by professional teachers should be more subject to self-serving biases than should the attributions made by college students.

The results indicated that all subjects made greater attributions to teacher factors in the failure as compared

to the success conditions, but perceived student factors as more important in the success than in the failure conditions. These data appear to challenge the existence of motivational biases in the attribution of causality for success and failure outcomes. However, as in Beckman's (1973) study, the public nature and possible future invalidation of the instructors' self-presentations by others may have prevented subjects from taking too much credit for success or denying blame for failure." Also, the instructors' knowledge that their teaching methods were the focus of study may have contributed to this same moderating effect. In fact, Ross et al. (1974) noted:

"He (the instructor) perceived himself to be the object of study and was aware that his performance was being taped for subsequent use and evaluation. Furthermore, he knew that his learner's could be evaluated relative to that achieved by other learners and instructors. These features threatened the defensive attributor with the possibility that other evaluators would be less charitable."
(p. 618)

The above explanation of Ross et al.'s data is strengthened by the fact that professional teachers, for whom the teaching task supposedly was more ego involving, made more pronounced counterdefensive attributions than did nonprofessional, inexperienced college students.

From the preceding discussion on interpersonal influence research, it is noted that the studies by Harvey

et al. (1974), Arkin et al. (1976), Federoff & Harvey (1976) all provided results consistent with the proposition that under certain conditions, people do make self-serving attributions. In general, these investigations indicated that when concerns for self-esteem were likely to be aroused, individuals tended to accept responsibility for positive outcomes and, when possible, to deny responsibility for negative outcomes.

Skill-oriented Task Performance

Do people take responsibility for their success at a skill task, while attributing their failures to external factors such as bad luck, other persons, or the difficulty of the task itself? Much recent research has addressed itself to this question. In the studies reviewed in this section, subjects themselves performed some task and received feedback indicating that they had either succeeded or failed on a skill task; they were then asked to assign causality for their performances.

In two separate studies, Luginbuhl, Crowe & Kahan (1975) asked subjects to perform a task analogous to that of a radar operator who must discriminate among objects such as airplanes, birds, and clouds which appear on the screen. After each of 30 trials, the experimenter gave subjects bogus feedback indicating their responses were

correct or incorrect. Following the experimental task, subjects assigned causality for their performance to the four factors of ability, effort, task difficulty and luck. In addition to the attribution of causality measure, subjects were asked to rate the percentage of their total effort which was spent on the first 10 trials, the second 10 trials, and the final 10 trials. The latter measure did not reveal any significant difference between each other. However, the results of both studies indicated that on the attribution of causality measures, subjects attributed success more than failure to internal factors (ability and effort) and to unstable factors (effort and luck). Subjects also saw effort as the major internal factor responsible for success, and saw lack of ability as the major internal factor responsible for failure. In explaining success and failure subjects' differential attributions to internal factors, Luginbuhl et al. (1975) suggested that in making attributions, individuals are influenced by their desire to maximize positive and to minimize negative present or future outcomes. They also suggested that attributions for performances depend upon the importance of the task to the individual.

Some amount of concern for self-esteem might have been aroused in the experimental situation, since the task was represented as requiring skill and also since subjects

gave their responses to and received success or failure feedback directly from the experimenter. In summary, then, the two studies performed by Luginbuhl et al. (1975) generally provide support for a defensive attributional process.

Recently, two studies (Miller, 1976; Sicoly & Ross, 1977) attempted to examine the operation of self-esteem motives in the causal inference process while attempting to control the alternative causal factors suggested by Miller & Ross (1975). The results of this study indicated that successful outcomes were attributed more to internal factors, and unsuccessful outcomes more to external factors. Further, self-protective and self-enhancing tendencies were greater under high than low ego involvement. That is, high involvement failure subjects made greater attributions for their performance to luck and less to ability and effort than did low involvement failure subjects. In addition, high-involvement success subjects attributed more responsibility for their performance to ability than did low involvement success subjects. Since the ego-involvement manipulation occurred after the experimental task was completed, the phenomenon of greater expectancy of success than failure, or the mis-construal of contingency for the success-failure difference appears unable to explain the effect of involvement.

Sicoly & Ross (1977) performed a second study specifically designed to control the alternative causal factors proposed by Miller & Ross (1975). In this study, Sicoly & Ross examined the occurrence of defensive attributions and evaluations of the accuracy of self-serving observer feedback (i.e., feedback assigning more personal responsibility for success or less personal responsibility for failure than the subject had given himself). Consistent with self-esteem predictions, Sicoly & Ross found that subjects assigned more personal responsibility to themselves for success than for failure outcomes. In addition, subjects assigned inflated accuracy ratings to the confederate when given more personal responsibility for success (self-enhancing distortion), and less personal responsibility for failure (self-protective distortion). In this study, comparisons were made within both success and failure conditions, where subjects' expectations, concepts of contingency, and perceptions of response-outcome covariation would not be expected to differ. Consequently, these factors could not be invoked as feasible explanations for the predicted effects.

Miller & Ross (1975) suggested that ego-biased attributions, though widely accepted, have an equivocal empirical foundation. The above study has confirmed the existence of both self-enhancing and self-protective biases

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while apparently circumventing alternative, nonmotivational reinterpretations.

Stevens & Jones (1976) used Kelley's attributional model (1967) to examine the relative influence of cognitive and motivational factors on causal attributions for positive and negative outcomes. Following completion of the task, subjects were asked to assign causal responsibility for their performance on that task to the four factors of ability, effort, task difficulty, and luck. The results showed that successful subjects made more internal and fewer external attributions than failing subjects. In general, subjects became less "logical" and more defensive the more unrelieved their failure. Luck was the main resort as a failure explanation. From these findings, the authors concluded:

"There is little question that the attributions for a failing performance are heavily influenced by the apparent need to defend self-esteem . . . Subjects confronting the worst circumstances are the most defensive." (Stevens & Jones, 1976, p. 818)

In two separate studies, Wolosin, Sherman, & Till (1973) had pairs of subjects perform a cooperative (Experiment 1) or competitive (Experiment 2) decision-making task, and then gave subjects feedback indicating their performance exceeded an expected outcome level (success outcome), met the level (neutral outcome), or failed to meet it

(failure outcome). The results indicated that under cooperative conditions, the subjects assigned more causal responsibility to self for success than for neutral or failure outcomes, while the partner was assigned more responsibility for failure than for success outcomes. In a competitive situation, self-attributions were significantly greater under success than under failure conditions; further, the situation was seen as most responsible for failure outcomes.

Miller & Ross (1975) suggested that the self-enhancing effect (i.e., greater self-attributions for success than for failure) found by Wolosin et al. (1973) could have been due to differences in perceived response-outcome covariation rather than to motivational biases. They argued that "constant failure may be less likely to be self-attributed because the response-outcome covariation may be less apparent" (Miller & Ross, 1975, p. 222). Although such an explanation of the results of these studies cannot be ruled out completely, it does not seem to be a very plausible alternative interpretation since participants' outcomes (both successful and unsuccessful) presumably depended not only on their own responses, but also on their partners' responses. These studies, therefore, appear to provide relatively strong support for self-serving biases in causal attributions.

Snyder, Stephan & Rosenfield (1976) also presented data consistent with an interpretation in terms of self-serving attributional biases. In their study, each subject competed against a fictitious opponent in a competitive game matrix and then received false feedback indicating either that he had won or lost. Following the game, each subject assigned responsibility for his own and his opponent's outcomes. In this way, winner and loser served as both actor and observer depending on whose outcome was being evaluated. It was predicted that the actor would take credit for success and deny responsibility for failure, while the observer would deny him credit for success and blame him for failure.

The results supported these predictions. The loser (actor) attributed his own outcome more to bad luck and less to lack of skill than did his winning opponent (observer), while the winner (actor) attributed his own outcome more to skill and less to luck than did his losing opponent (observer).

Feather and Simon (1971) in a study supposedly investigating the performance of students under test conditions, had pairs of subjects work independently and simultaneously on several practice and 15 test anagrams. Subjects' expectations of performance outcomes (success and failure) were experimentally manipulated by varying

the degree of difficulty of the practice and test items, respectively. The results of practice and test items were announced publicly by the experimenter. Also, when the test items were completed, the experimenter announced whether each of the two participants had succeeded or failed on the overall test. Subjects then were asked to rate the degree to which their own and the other participants' performances were due to ability or to luck. The results indicated that for both self and other-ratings, expected outcomes were ascribed to an internal factor (ability) and unexpected outcomes to an external factor (luck). An interesting finding was that subjects also were more likely to attribute another's success to internal factors than their own success, and another's failure to external factors than their own failure.

Although not consistent with the causal asymmetry usually cited as evidence for defensive attributional process, Feather & Simon's (1971) results, like those of Beckman (1973) and Ross et al. (1974), may have been due to features of the experimental situation. That is, subjects were conscious that their test behaviour was being evaluated by the experimenter and that it was the major focus of study. Besides, each subject's performance on practice and test items was publicly announced in the presence of another subject by the experimenter. Also, after

the test, each subject assigned causal responsibility for the performance outcomes of both self and other. Given these features and the subjects' possible beliefs that the experimenter would probably compare their causal attributions with those made by the other subject, it may be argued that the subjects tended to respond in ways that they thought would be socially acceptable to the experimenter.

It has been argued that the potential for present and future invalidation of individuals' self-presentations tends to make them more modest about their own abilities and attributes. In a study reported by Wortman, Costanzo, & Witt (1973), subjects and fictitious partners worked on a bogus social perceptiveness test and subsequently received feedback indicating they either had done well or poorly on the overall test. Next, half of the subjects were led to believe that they would be answering more test questions (anticipation group), while the other half were told they had completed the test (non-anticipation group). Subjects then were asked to make attributions for their own and partner's (always successful) performance.

Consistent with a defensive attributional interpretation, Wortman et al. (1973) reported that subjects who received failure feedback attributed more causality to an external factor (luck) than subjects given successful

feedback. Furthermore, failure subjects saw the task as more difficult than success subjects. The results also indicated that subjects who anticipated future performance attributed less ability and more luck to themselves than subjects who did not. Subjects who expected to complete more questions also attributed more ability to their successful partner than to themselves, and attributed their own performances more to luck. Miller & Ross (1975) cited these later findings as evidence against the existence of self-serving biases. These results, however, are consistent with the notion that possible invalidation of their self-presentations by future performance makes individuals more modest about their abilities. That is, the results suggest that when faced with future performance where failure is possible, individuals will make seemingly counter-defensive attributions (i.e., underestimate their ability) in an attempt to avoid the embarrassment resulting from the public invalidation of a positive self-presentation.

Overall, the skill-oriented task performance studies provided strong support for the proposition that self-serving biases often emerge in causal attributions for success and failure. In addition, several investigations discussed earlier, which have appeared since Miller & Ross's (1975) review, have yielded evidence consistent with the notion that people attempt to avoid blame for their

own negative outcomes by attributing responsibility to external factors.

In a review article, Bradley (1978) examined the empirical evidence from research as it related to the notion of self-serving biases in attribution of causality. The studies reviewed found strong support for the causal asymmetry generally cited as evidence for self-serving biases: that is, individuals tended to accept responsibility for positive behavioural outcomes and to deny responsibility for negative behavioural outcomes.

The review also presented a broadened self-serving bias formulation to account for seemingly counterdefensive attributions. That is, an individual might not want to accept undue credit for positive outcomes and deny credit for negative outcomes, if he knows that his unrealistically positive self-presentation could be invalidated by his own subsequent behaviour, or by others' present/future assessment of his behaviour. The embarrassment resulting from such public invalidation would likely threaten the individual's positive public image. Interpreted in this way, attributions that appear to be both defensive and counterdefensive (i.e., underestimating the subject's ability) could reflect a self-serving attributional tendency.

Resume of Literature

From the above reviewed literature, it is evident that the concept of self-serving biases in the attribution of causality is a rather complex phenomenon. A characteristic feature of attribution theories, guided by the notion of the interdependence of motivation and cognition, has demonstrated that perceptions of causality may often be modified through the operation of self-serving biases. These biases may perform two functions: an ego protective function when an individual denies responsibility for failure, and an ego-enhancing function when an individual takes credit for success (Arkin, Gleason & Johnston, 1976; Miller, 1976; Federoff & Harvey, 1976; Snyder, Stephan & Rosenfield, 1976).

However, some of the studies reviewed have not adopted such a view, and have attempted to explain other conditions that influence the causal inference process. Although the results of the above studies were intuitively appealing, Miller & Ross (1975) carried out a comprehensive analysis of the research relevant to self-serving biases and concluded that the data do not unequivocally demonstrate the presence of motivated distortions in the attribution process. Nevertheless, much of the new research that had emerged since their review provided evidence regarding the influence of motivational biases in the causal

inference process (Arkin, et al. 1976; Federoff & Harvey, 1976; Luginbuhl et al. 1975; Miller, 1976; Sicoly & Ross, 1977; Stevens & Jones, 1976; Snyder et al. 1976).

Studies of evaluation apprehension (Rosenberg, 1969) have indicated that experimental subjects want very much to appear intelligent in the eyes of the experimenter. Moreover, it has been argued that this evaluation apprehension causes one to present oneself in such a way as to assure that the esteem in which he is held by others (and probably which he feels for himself) will be maximal. It should be noted that in all of the studies that provided support for defensive attributional processes, the subjects' performance and outcomes on the experimental tasks were observed by the experimenter and, consequently, the subjects may have ascribed causality for positive and negative outcomes associated with their behaviour in an exaggerated way that would avoid embarrassment and/or approval.

Studies carried out by Feather & Simon, 1971; Beckman, 1973; Wortman, Costanzo, & Witt, 1973; and Ross, Bierbrauer, & Polly, 1974 apparently found evidence against defensive attributional process. However, these authors theorized that the public nature and possible future invalidation of the subjects' self-presentations by others may have prevented them from taking too much credit for their success, or denying blame for their failure, thus toning

down the attributional asymmetries.

While it seems reasonable to speculate that the nature of the evaluation and interpretive activities may prompt individuals' tendencies to make self-serving causal attributions, the empirical tests have not been unequivocally demonstrated. The past research in this area appears to be vulnerable to rival interpretations, and it would appear that a more explicit examination of the impact of evaluation on causal attributions is needed. This study will, therefore, examine the impact of evaluation by others of individuals' causal attributions in a skill-oriented task performance.

Purpose of the Study

Based on the literature which has been reviewed, it was decided first to conduct a study which investigated the impact of present and future evaluation on causal attributions. This study, which is henceforth referred to as Study I of the thesis, was intended to be the first of two studies. Its rationale and hypotheses are presented in the paragraphs that follow. The specific rationale of the second study, intended to flow from the findings of the first, is presented in Chapter V.

Rationale and Hypotheses - Study I

The goal of this study was to investigate the impact of present and future evaluation on causal attributions.

Usually, when subjects participate in research, they are given anonymity when the data are gathered, and told that the experimenter is the only person who will be evaluating the data. Therefore, the possibility of the experimenter or anyone else disconfirming the subjects' attributions does not exist, or is minimal at most. However, the evaluation apprehension (i.e., the propensity for experimental subjects to appear intelligent in the eyes of the examiner), to the extent it is part of the demand characteristics, may prompt the subjects to boost their self-esteem by taking credit for their success and self-protect themselves by avoiding responsibility for their failure.

However, it is predicted that if the subject is explicitly told that his performance will be evaluated by others in the future, that is, if there is a possibility for future evaluation and future disconfirmatory evidence about his attributions of responsibility, then that expectancy or anticipation should pose a potential threat (of being wrong or making invalid attributions), leading to an affective state (anxiety or fear) against which the

subject would attempt to defend himself by counterdefensive attributions. The embarrassment resulting from the possible invalidation of his performance would threaten the individuals' positive public image and result in disapproval from others. This should prompt the subjects to give less emphasis to internal factors in success situations.

It is, therefore, predicted that the possibility of future evaluation of the subject's performance and attributions would tend to make him more modest about his own abilities and self-attributions. That is, in having succeeded in a task in a context where future attempts may result in failure and possible invalidation of internal attributions that have just been made, the subject should make seemingly counterdefensive attributions (i.e., underestimate his ability), in an attempt to avoid the embarrassment resulting from invalidation of a self-presentation that is too positive. Similarly, in having failed in a task in a context where future attempt may result in success and the invalidation of their external attributions, the subject should make counterdefensive attributions in an attempt to avoid future embarrassment.

Path Diagrams of outcome effects on causal attributions under Success and Failure conditions of low and high evaluation apprehension are given on page 29 and 30. In the diagrams, LOW EVALUATION means 'With no possibility

of future evaluation', and HIGH EVALUATION means 'With possibility of future evaluation.'

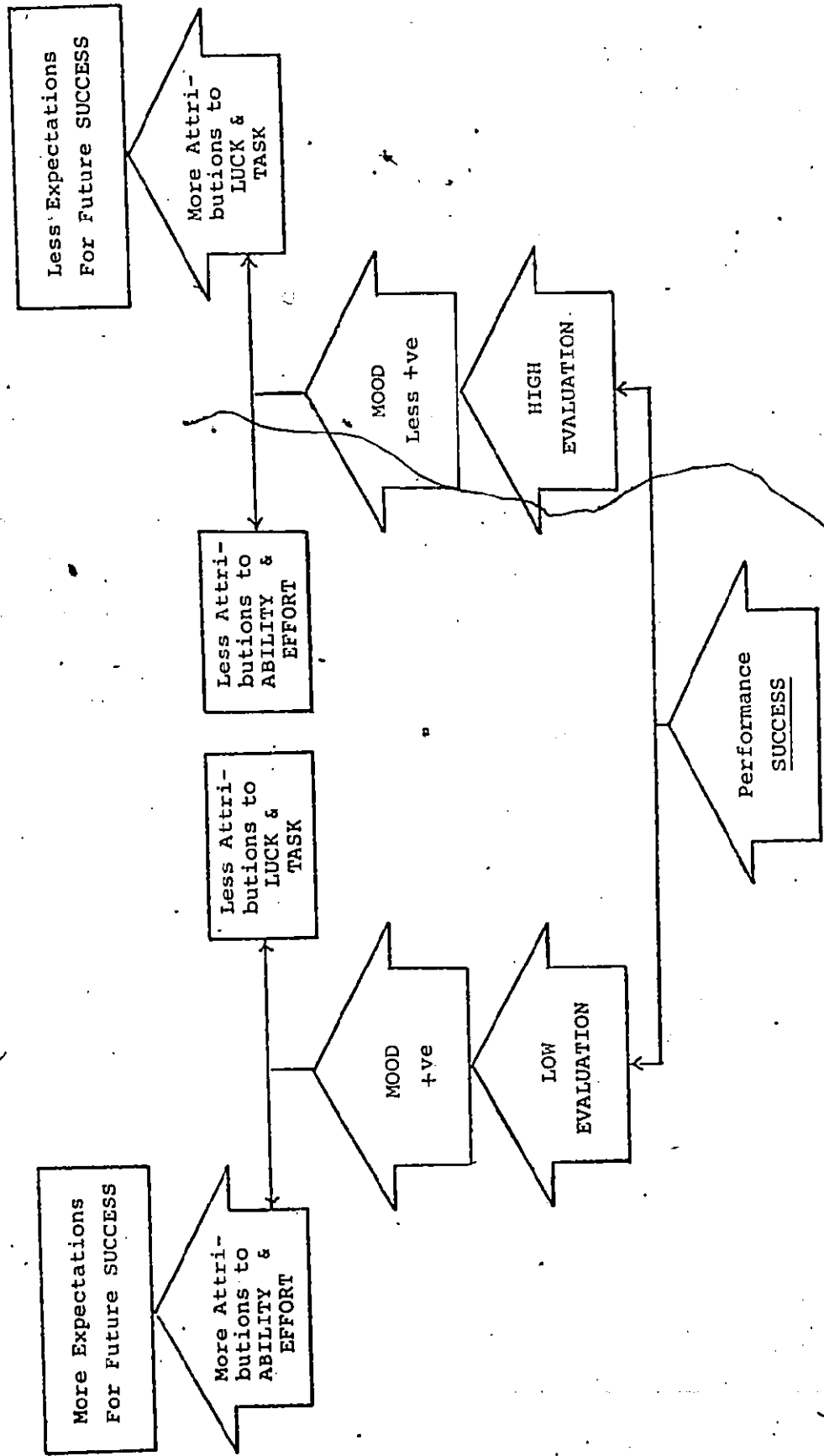


Figure 1. Path Diagram of Outcome Effects on Causal Attributions (Ability, Effort, Luck, & Task), Affect and Expectations for Future Success, under SUCCESS Conditions of Low and High Evaluation on Apprehension

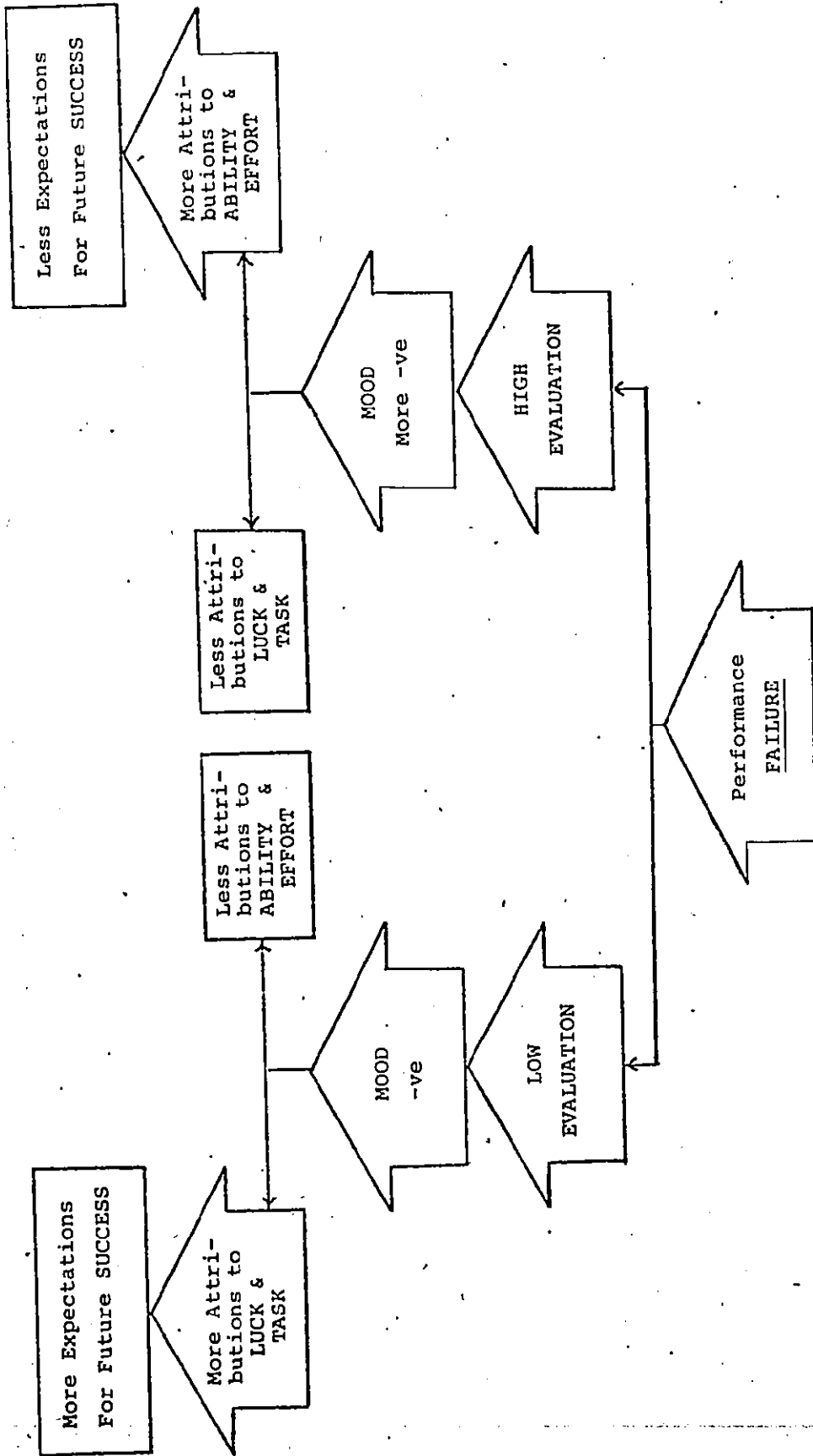


Figure 2. Path Diagram of Outcome Effects on Causal Attributions (Ability, Effort, Luck, & Task), Affect and Expectations for Future Success, under FAILURE Conditions of Low and High Evaluation Apprehension

Hypotheses - Study I

The following hypotheses are based on evidence from the studies reviewed which showed that people attribute responsibility for their success to ability and effort, and failure to luck and task difficulty. They are also based upon the concept that when people are apprehensive of future evaluation of their performance and attributions, the impact of evaluation apprehension would reduce the asymmetry in attributional judgment in order to preserve self-esteem in the long run. The specific hypotheses are that if the subjects are explicitly told that their performance and attributions will be evaluated by others in the future:

- 1) subjects who succeed in their performance will attribute less credit for their success to ability and effort, and will assign significantly more credit to luck and easiness of the task
- 2) subjects who fail in their performance will attribute less responsibility for their failure to luck and task difficulty, and assign significantly more responsibility to themselves for their lack of ability and lack of effort.

CHAPTER II

EXPERIMENTAL PROCEDURES - STUDY I

The purpose of this chapter is to present the procedures used to test the experimental hypotheses of the first study. The information is presented in four sections. First, the selection procedures for the subjects and the description of the sample are given. Second, details of manipulation of independent variables are presented. The third section deals with data collection, while the fourth section describes the measurement devices used in the experiment.

Subjects

Subjects in this study were 80 female students (between the ages of 16 and 18 years) enrolled in the Smiths Falls District Collegiate Institute, Smiths Falls, during the 1978-1979 school year. It was decided to use only subjects of the same sex, as some studies have found sex differences in the causal explanations for attribution of responsibility (for example, Walster, 1966; Feather, 1969; Hochreich, 1972; Hill, 1975; Shaw & McMartin, 1975). Female subjects were used in the present study since they were more easily available than males. In order to obtain

sufficient number of subjects for the study, it was necessary to use students from three grades, namely, grades 10, 11 and 12. All the subjects were white Caucasian Anglophones.

As an incentive for the subjects' involvement in the study, all subjects were paid a dollar each for their participation. Besides, a cash prize of \$3.00 and \$2.00 was offered to two people in each class who completed the task in the shortest time.

The subjects ranged in age from 16 to 18 years, the mean age for the entire sample being 17.06 years. In the experiment, the 80 subjects were randomly assigned to four groups of 20 subjects per group. Each group of subjects was placed in one of the four experimental groups as shown below:

	No Future Evaluation	Future Evaluation
Success	20	20
Failure	20	20

Manipulation of Independent Variables

Two sets of anagrams were used in this study. One was a set of 10 anagrams, the success rate of which was pretested and found to be 80.4%. The other was another set of 10 anagrams, the failure rate of which was determined to be 79.2% by pretesting. The pretesting of these anagrams were done among female students from the same school and grade level from where the subjects for this study were drawn. The subjects who completed the pretests were not allowed to participate in the experiment, and had been asked not to discuss the project.

In order to test the effects of the independent variables, subjects in this study were placed in four groups of 20 subjects per group as described earlier. Success and failure conditions were manipulated by administering success anagrams to two groups of subjects, and failure anagrams to the remaining two groups. Evaluation apprehension was manipulated by giving instructions to one success and one failure group that their performance and reasoning would be compared with other students, and that they would be required to complete another set of anagrams, shortly (see Appendices 2 & 4).

Data Collection

The experimenter informed the students that he was investigating the verbal problem-solving ability of students in the Smiths Falls area. To do this, he would be giving them a set of scrambled words. There is evidence that their success in solving these anagrams was generally highly related to their problem-solving ability. After completing the anagrams they would be asked to complete three questionnaires of short duration. They were informed that after completion of their participation in the study, they would receive an explanation of the project, after which they could ask any questions they had about the nature of the research.

The completion of the anagrams and questionnaire and collection of data were done in groups of 20 subjects. Each group listened to an introductory speech (see Appendices 1, 2, 3 and 4) that explained the nature of the experiment and the procedures the students were to follow.

The "Success with no future evaluation" group completed the Success Anagrams and Failure Anagrams, respectively (see Appendices 5 and 6). No attempt was made to create an atmosphere of concern about the possibility that the performance of these two groups would be evaluated in the future (see Appendices 1 & 3).

On the other hand, the "Success with future

evaluation" group and the "Failure with future evaluation" group, besides completing the success anagrams and failure anagrams, respectively, were also told that their performance on the anagrams and their reasoning for the factors that were responsible for their success or failure would be compared with that of other Ontario High School students. In addition, they were informed that they would be required to complete another set of similar anagrams shortly, and that their future performance and reasoning will be compared with that of their present performance and reasoning (see Appendices 2 & 4).

The subjects then completed the anagrams and the three questionnaires. When all the subjects had returned their anagrams and questionnaires to the experimenter who checked to verify that all items were completed, they were debriefed by giving a short explanation about the nature of the experiment. They were free at that time to ask any questions they wanted. Everybody was paid a dollar each for their participation, as promised, and the two prizes of \$3.00 and \$2.00 were paid later after verification of data, to two subjects in each group who completed the maximum number of anagrams in the shortest time.

Before dismissing the group, the experimenter thanked the subjects for their participation in the study and asked them not to discuss their knowledge of the study

with other students or friends. These group meetings generally lasted for about an hour.

Measurement Devices

The dependent variable, attribution of responsibility was measured in terms of four factors: Ability, Effort, Luck and Task Difficulty. A 9-point Likert Scale item that ranged from "No extent" (Value 1) to "Extremely high extent" (Value 9) was used to measure the prominence of each factor as influencing the subject's performance (see Appendices 7 & 8). Subjects were asked to rate all the four factors appropriately by placing a circle around the number they wished to indicate.

After the subjects had completed the above rating scale, they were asked to complete a Semantic Differential Check List to measure how they felt about their performance. This consisted of a list of 8 bi-polar adjectives at the end of seven point scales (see Appendix 9). The subjects were asked to describe what their mood was at that time, by indicating a check mark at the appropriate space in the questionnaire.

It was felt that success or failure on the experimental task represented affectively significant events for the subjects, and that success would result in increased positive affect, and failure would result in increased

negative affect. It was further felt that the positive and negative affective states produced by success and failure, respectively, would mediate the subjects' causal attributions for the outcomes of their performance.

The next questionnaire was designed to find out from the subjects, just after they had succeeded or failed, what their expectations were for future success, if ten similar anagrams were given to them in the future. Ten numerals (zero to 10) were indicated in this questionnaire in an ascending order, and the subjects were asked to circle whichever numeral they wished to indicate (see Appendix 10).

It was expected that the evaluation apprehension would significantly reduce the subjects' expectations for future success in both conditions.

CHAPTER III

PRESENTATION OF RESULTS - STUDY I

In this chapter, the statistical procedures used to analyze the data are presented. The chapter consists of two sections. Section one describes the manipulation checks of the independent variables. The second section presents analysis of variance procedures and post hoc methods used to measure the results of the manipulation of independent variables, and other related questionnaires. Alpha level for all analyses was set at .05.

Checks of Manipulation of Independent Variables

Before the actual data were collected, it was necessary to find out whether the success and failure anagrams actually prompted 80% success or failure outcomes with the participants. To accomplish this, 50 female volunteer subjects were recruited from the same classes as subjects for the main study were selected, and were randomly assigned to two equal groups. One group completed a set of success anagrams, the mean success rate of which was found to be 80.4%. The other group completed a set of failure anagrams, and the mean failure rate was 79.2%. These tests established that the success and the failure anagrams brought about the desired success and failure conditions in the test situation.

Analysis of Attribution of Responsibility

As shown in Table 1, page 41, there was no main effect for internal factors (Ability + Effort) for evaluation apprehension. That is, when success and failure experiences under "No future evaluation" conditions were combined and compared with success and failure experiences under "Future evaluation" conditions, there was no significant difference. This meant that there was no overall effect for the manipulation of evaluation apprehension on both internal factors combined.

However, success-failure conditions showed a main effect for internal factors (Ability + Effort), ($F(1, 76) = 97.67, p < .001$). This is in support of previous studies which have shown that when people succeed in their performance, they attribute significantly more responsibility to internal factors, namely, ability and effort.

However, this was not an unqualified finding. The significant success-failure outcome x evaluation apprehension interaction effect for internal factors (Ability + Effort) ($F(1, 76) = 10.62, p < .001$) suggested that the effect of success-failure was not a uniform one, but was affected by the conditions of evaluation apprehension. The interaction showed that the effect of evaluation apprehension was pronounced for the success conditions (see

Table 1

Analysis of Variance of the Rated Importance of Internal Factors (ABILITY + EFFORT) as a Function of Outcome and Expectation of Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation Apprehension (A)	1.51	1	1.51	.34
Success-Failure (B)	427.81	1	427.81	97.67*
A x B	46.52	1	46.52	10.62*
Within groups	<u>333.14</u>	<u>76</u>	4.38	
Total	808.98	79		

*p < .001

Figure 3, p. 43). Within the success condition, attribution of responsibility for internal factors (Ability + Effort) decreased significantly from "No future evaluation" to "Future evaluation" (Success with "No future evaluation" $\bar{X} = 13.6$; Success with "Future evaluation" $\bar{X} = 11.8$). Whereas, within the failure conditions, attribution of responsibility did not increase significantly from "No future evaluation" to "Future evaluation" (Failure with "No future evaluation" $\bar{X} = 7.45$; Failure with "Future evaluation" $\bar{X} = 8.7$). These findings are in partial support of the hypotheses.

Next, Ability and Effort were analyzed separately. Analysis of variance of internal factor "Ability" did not show any main effect for the evaluation apprehension factor (see Table 2, p. 44).

There was a main effect for success-failure conditions ($F(1, 76) = 19.47, p < .001$), but there was no significant interaction effect.

Separate analysis of internal factor "Effort" did not show any main effect for the evaluation apprehension factor. However, there was a significant main effect for the success-failure factor ($F(1, 76) = 119.29, p < .001$) (see Table 3, p. 45).

Also, there was a significant interaction between success-failure and evaluation apprehension for the internal

Table 1a

Simple Main Effects: Effects of Success-Failure and
Evaluation Apprehension Interaction on Attribution
of Responsibility, for the Internal Factors
(ABILITY + EFFORT)

N = 80

Source of Variation	SS	df	MS	F
Evaluation Apprehension (A)	1.51	1	1.51	.34
A at b ₁	32		32	7.30*
A at b ₂	16		16	3.65
Success-Failure (B)	427.81	1	427.81	97.67**
B at a ₁	378.22		378.22	86.35**
B at a ₂	96.1		96.1	21.94**
A x B	46.52	1	46.52	10.62*
MS within	<u>333.14</u>	<u>76</u>	4.38	
Total	808.98	79		

*p < .01

**p < .001

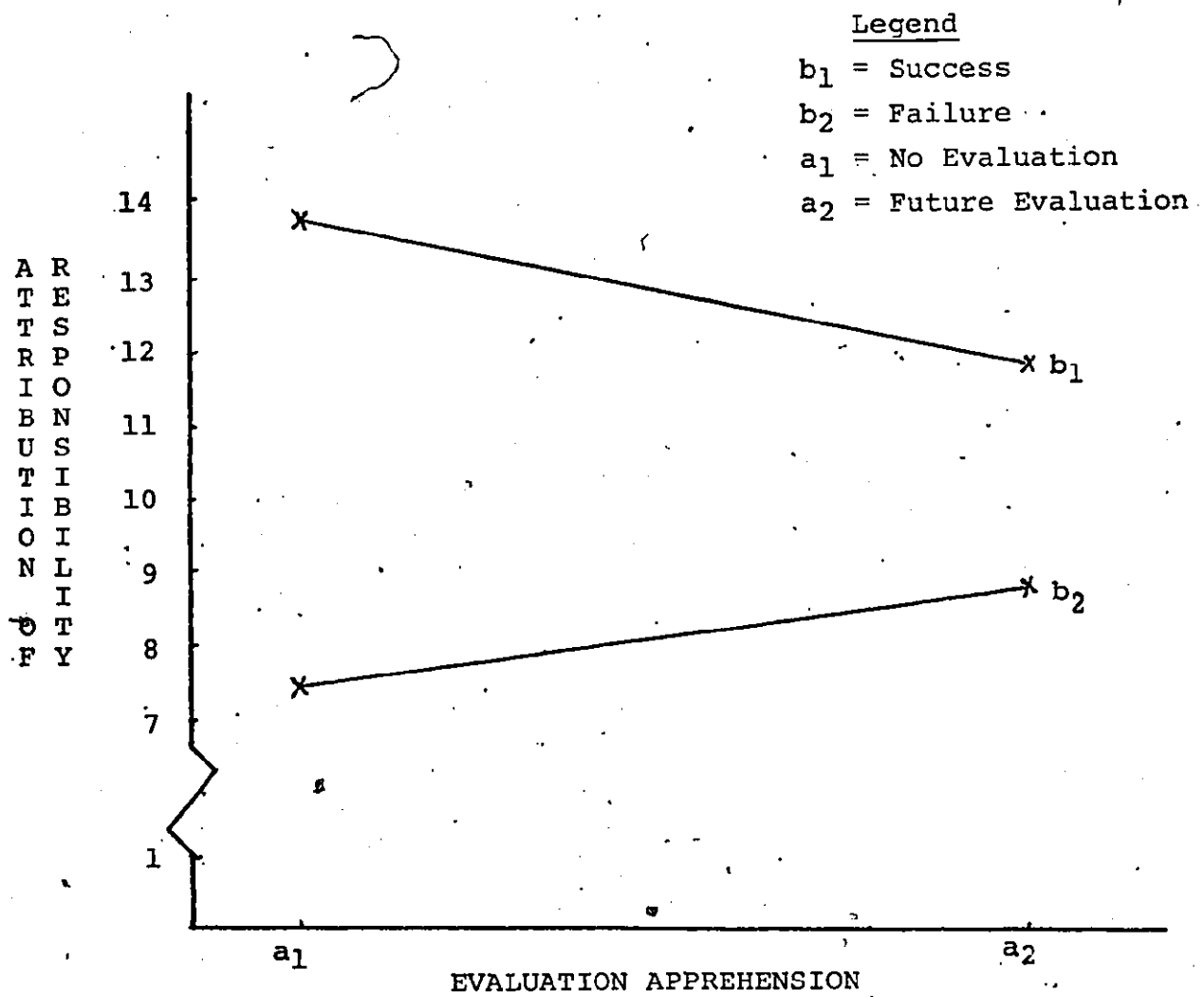


Figure 3. Graph Showing Interaction Effects of Success-Failure Conditions and Evaluation Apprehension, for Internal Factors (ABILITY + EFFORT)

Table 2

Analysis of Variance of the Rated Importance of Internal Factor (ABILITY) as a Function of Outcome and Expectation of Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation apprehension (A)	.45	1	.45	.2
Success-failure (B)	42.05	1	42.05	19.47*
A x B	4.05	1	4.05	1.87
Within groups	<u>164.20</u>	<u>76</u>	2.16	
Total	210.75	79		

* p < .001

Table 3

Analysis of Variance of the Rated Importance of Internal
Factor (EFFORT) as a Function of Outcome and
Expectation of Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation apprehension (A)	3.61	1	3.61	2.13
Success-failure (B)	201.61	1	201.61	119.29*
A x B	23.12	1	23.12	13.68*
Within groups	<u>128.64</u>	<u>76</u>	1.69	
Total	356.98	79		

*p < .001

factor "Effort" ($F(1, 76) = 13.68, p < .001$). The interaction showed that the evaluation apprehension was more pronounced for the success condition than for failure (see Figure 4, p. 47). Within the success condition, attribution of responsibility decreased significantly from "No future evaluation" to with "Future evaluation" (Success with "No future evaluation" $\bar{X} = 7.35$; Success with "Future evaluation" $\bar{X} = 5.85$). However, within the failure condition, the attribution of responsibility did not increase significantly from "No future evaluation" to with "Future evaluation" (Failure with "No future evaluation" $\bar{X} = 3.1$; Failure with "Future evaluation" $\bar{X} = 3.75$). These results are in partial support of the hypotheses.

For external factors (Luck + Task Difficulty), there was no main effect for evaluation apprehension (see Table 4, p. 48). That is, when success and failure scores under "No future evaluation" condition were compared with success and failure scores under "Future evaluation" condition, there was no significant effect on attributions to external factors.

However, there was a main effect for success-failure conditions on attributions to external factors (Luck + Task Difficulty) ($F(1, 76) = 12.91, p < .001$). What happened here was a significant effect between "Success vs "Failure", which is a standard replication of previous

Table 3a

Simple Main Effects: Effects of Success-Failure and Evaluation Apprehension Interaction on Attribution of Responsibility, for the Internal Factor, EFFORT

N = 80

Source of Variation	SS	df	MS	F
Evaluation Apprehension (A)	3.61	1	3.61	2.13
A at b ₁	22.50		22.50	13.31*
A at b ₂	4.22		4.22	2.50
Success-Failure (B)	201.61	1	201.61	119.29*
B at a ₁	180.62		180.62	106.88*
B at a ₂	44.10		44.10	26.99*
A x B	23.12	1	23.12	13.68*
MS within	<u>128.64</u>	<u>76</u>	1.69	
Total	356.98	79		

*p < .001

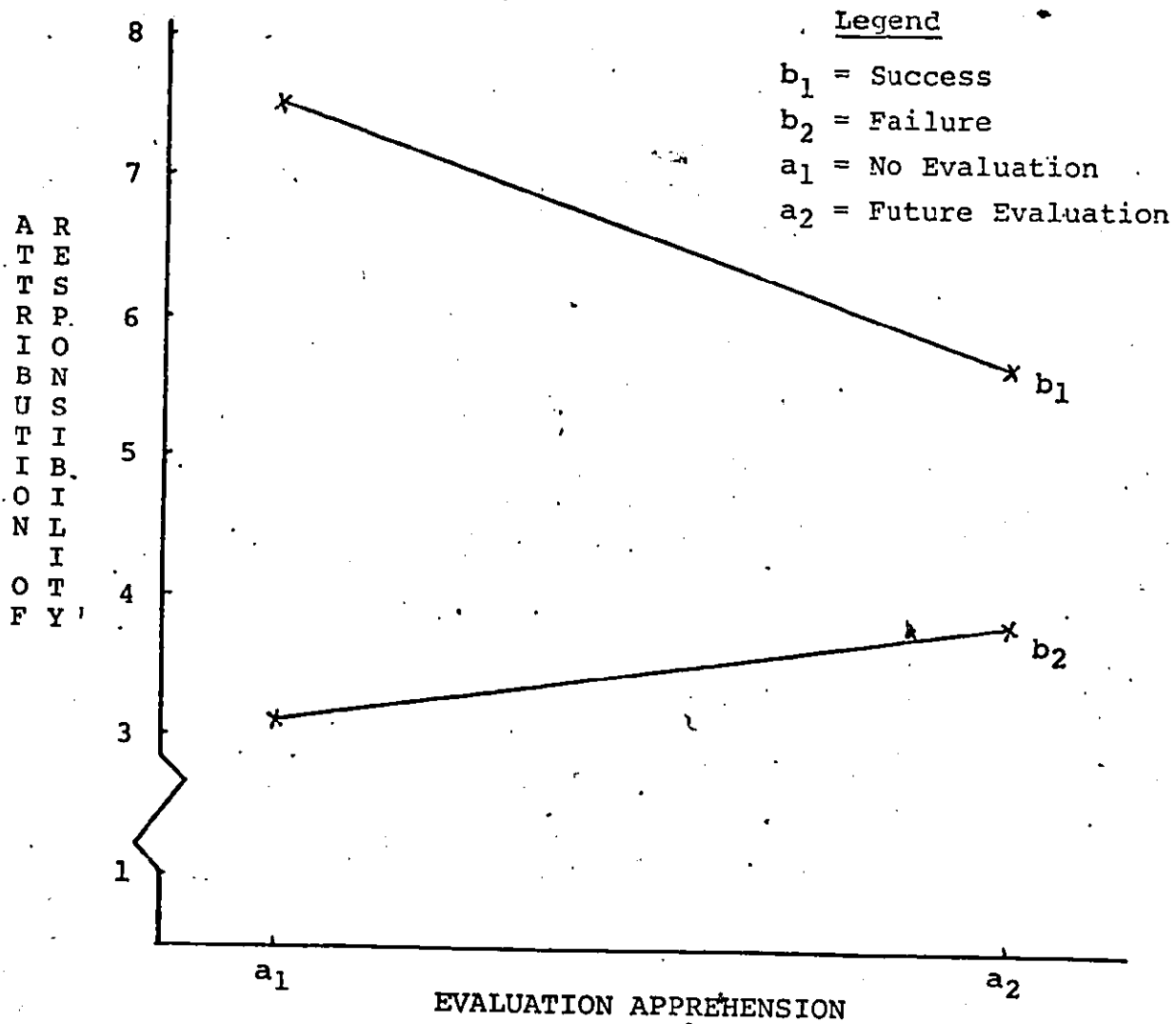


Figure 4. Graph Showing Interaction Effects of Success-Failure Conditions and Evaluation Apprehension, for the Internal Factor EFFORT

Table 4

Analysis of Variance of the Rated Importance of External Factors (LUCK + TASK DIFFICULTY) as a Function of Outcome and Expectation of Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation apprehension (A)	.01	1	.01	.001
Success-failure (B)	90.31	1	90.31	12.91*
A x B	15.32	1	15.32	2.19
Within groups	531.54	76	6.99	
Total	637.18	78		

*p < .001

studies which have shown that when people fail, they attribute more responsibility to external factors, namely, "Luck" and "Task Difficulty".

No significant interaction effect was found for external factors.

For a more detailed examination, attributions to "Luck" and "Task Difficulty" were analyzed separately. Analysis of external factor "Luck" showed a main effect for evaluation apprehension factor ($F(1, 76) = 6, p < .05$) (see Table 5, p. 50). The effect was more pronounced for the success condition, as within the success condition, attribution of responsibility for "Luck" increased significantly from "No future evaluation" to with "Future evaluation" (Success with "No future evaluation" $\bar{X} = 3.3$; Success with "Future evaluation" $\bar{X} = 4.45$). In the failure condition, attribution of responsibility did not change significantly (Failure with "No future evaluation" $\bar{X} = 2.7$; Failure with "Future evaluation" $\bar{X} = 3.55$). This meant that people in the "Success" situation, when faced with the possibility of future evaluation, has attributed significantly less responsibility to "Luck" for their success. This is in partial support of the hypotheses of the study.

There was no significant effects on attributions in the success-failure condition, as well as in the interactions for the external factor, "Luck".

Table 5

Analysis of Variance of the Rated Importance of External Factor LUCK as a Function of Outcome and Expectation for Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation Apprehension (A)	20	1	20	6*
Success-Failure (B)	11.24	1	11.24	3.37
A x B	.46	1	.46	.14
Within groups	253.30	76	3.33	
Total	285.00	79		

*p < .05

Separate analysis of external factor "Task Difficulty" showed main effects for the evaluation apprehension factor ($F(1, 76) = 7.73, p < .001$), success-failure factor ($F(1, 76) = 67.19, p < .001$), and an interaction between them ($F(1, 76) = 4.27, p < .05$) (see Table 6, p. 52).

In the evaluation apprehension condition for "Task Difficulty", the effect on attribution was more significant for the failure condition as, within the failure condition, attribution of responsibility for "Task Difficulty" decreased significantly from "No future evaluation" to with "future evaluation" (Failure with "No future evaluation" $\bar{X} = 7.1$; Failure with "Future evaluation" $\bar{X} = 5.4$). In the success condition, the effect on attributions was not significant (Success with "No future evaluation" $\bar{X} = 3.5$; Success with "Future evaluation" $\bar{X} = 3.25$) (see Figure 5, p. 53 for the effects of attributions on interaction between success-failure conditions and evaluation apprehension, for the external factor "Task Difficulty"). The above results are in partial support of the hypotheses of the study.

Analysis of variance for "Mood" did not show any main effect for evaluation apprehension conditions. That is, there was no significant difference in the mood of "Success" vs "Success with future evaluation", nor "Failure" vs "Failure with future evaluation" conditions. (see Table 7,

Table 6

Analysis of Variance of the Rated Importance of External Factor (TASK DIFFICULTY), as a Function of Outcome and Expectation for Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation Apprehension (A)	19.01	1	19.01	7.73**
Success-Failure (B)	165.31	1	165.31	67.19**
A x B	10.52	1	10.52	4.27*
Within groups	187.34	76	2.46	
Total	382.18	79		

*p < .05

**p < .001

Table 6a

Simple Main Effects: Effects of Success-Failure and
Evaluation Apprehension Interaction on Attribution
of Responsibility for the External Factor

TASK DIFFICULTY

N = 80

Source of Variation	SS	df	MS	F
Evaluation Apprehension (A)	19.01	1	19.01	7.73**
A at b ₁	.62		.62	.25
A at b ₂	28.90		28.90	11.75***
Success-Failure (B)	165.31	1	165.31	67.19***
B at a ₁	129.60		129.60	52.68***
B at a ₂	46.22		46.22	18.79***
A x B	10.52	1	10.52	4.27*
MS within	187.34	76	2.46	
Total	382.18	79		

*p < .05

**p < .01

***p < .001

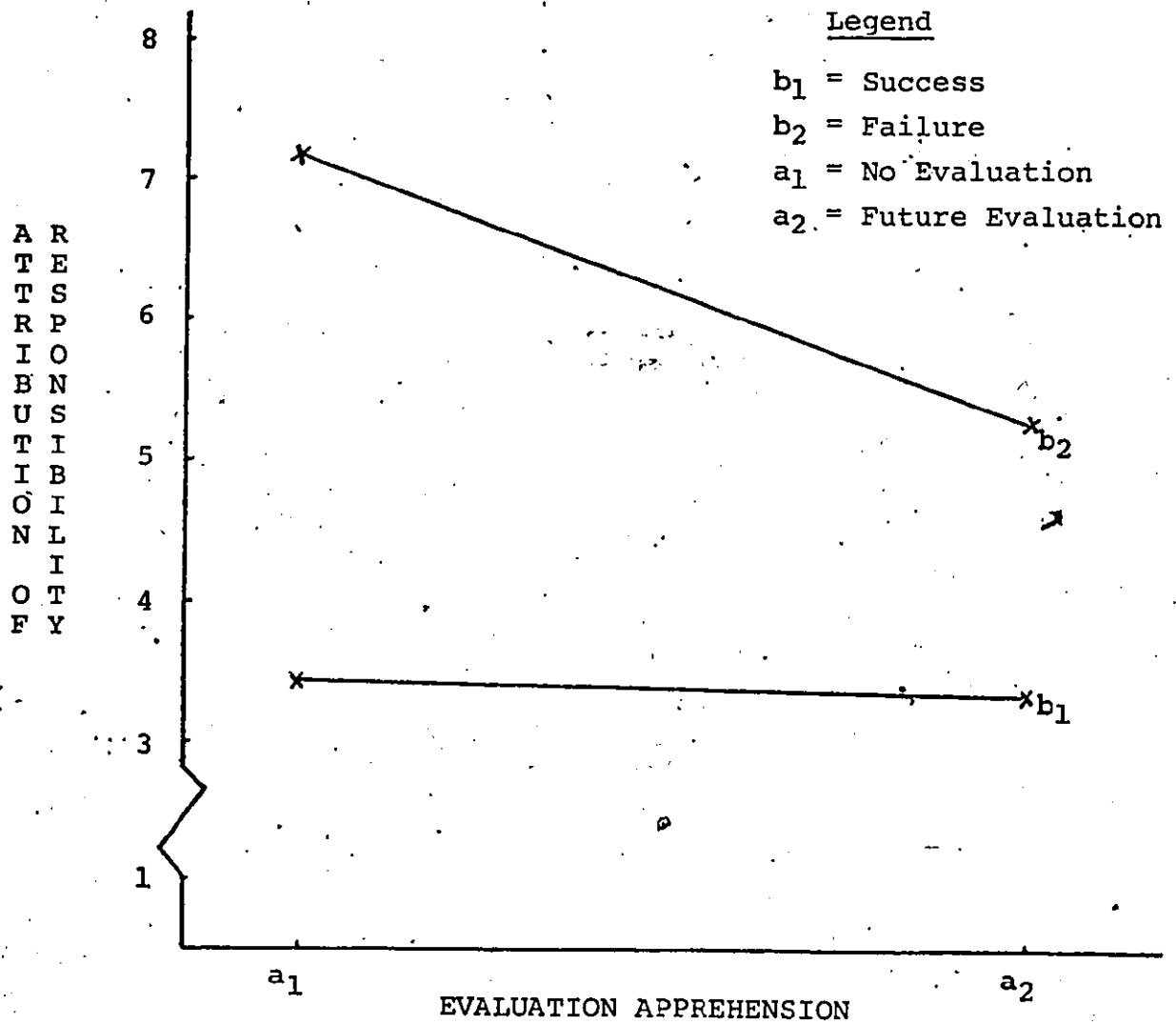


Figure 5. Graph Showing Interaction Effects of Success-Failure Conditions and Evaluation Apprehension, for the External Factor TASK DIFFICULTY

p. 55). On the other hand, there was a significant effect on "Mood" under success-failure conditions ($F(1, 76) = 33.11, p < .001$) (Success conditions $\bar{X} = 45$; Failure conditions $\bar{X} = 34.67$).

The results for the subjects' "Expectancy for future success" showed significant effects for the evaluation apprehension conditions ($F(1, 76) = 42.83, p < .001$) (Success "with no future evaluation" $\bar{X} = 8.25$, Success "with future evaluation" $\bar{X} = 6.8$; Failure "with no future evaluation" $\bar{X} = 3.55$, Failure "with future evaluation" $\bar{X} = 2.35$). There was a significant effect in the success-failure condition also ($F(1, 76) = 510.51, p < .001$) (Success conditions $\bar{X} = 7.52$, Failure conditions $\bar{X} = 2.95$). No significant interaction effect was found in the subjects' expectations for future success (see Table 8, p. 56).

This meant that the subjects in the "Success with future evaluation" condition placed significantly lower expectations for their future success than those with "No future evaluation". Likewise, subjects in the "Failure with future evaluation" condition placed significantly lower expectation for their future success than those with "No future evaluations." This is in support of the motivational model of attributions of causality.

Table 7

Analysis of Variance of the Rated Importance of MOOD
as a Function of Outcome and Expectation
of Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation Apprehension (A)	154.01	1	154.01	2.39
Success-Failure (B)	2,132.11	1	2,132.11	33.11*
A x B	6.62	1	6.62	.10
Within groups	<u>4,894.15</u>	<u>76</u>	64.39	
Total	7,186.89	79		

*p < .001

Table 8

Analysis of Variance of the Rated Importance of EXPECTATIONS
FOR FUTURE SUCCESS as a Function of Outcome and
Expectation for Future Interaction

Source of variation	SS	df	MS	F Ratio
Evaluation Apprehension (A)	35.12	1	35.12	42.83*
Success-Failure (B)	418.62	1	418.62	510.51*
A x B	.31	1	.31	.37
Within groups	62.44	76	.82	
Total	516.49	79		

*p < .001

CHAPTER IV

DISCUSSION OF RESULTS - STUDY 1

The purpose of this study was to examine the attributional strategies to: 1) Ability, 2) Effort, 3) Luck, and 4) Task Difficulty, that people use under success and failure conditions when they are explicitly told that their present and future performance, and their attributions about them will be evaluated by others.

It was hypothesized that under the above-mentioned conditions, people who succeed in their performance will attribute less credit for their success to ability and effort, and assign relatively more responsibility for their success to luck and easiness of the task. In failure situations it was predicted that they will attribute less responsibility for their failure to luck and task difficulty, and would assign relatively more responsibility for their failure to their lack of ability and lack of effort.

In this respect, the results of the study are first examined vis-a-vis the experimental hypotheses, and recommendations for further research are later presented.

The present study has replicated the findings of Harvey et al. (1974), Luginbuhl (1975), Federoff & Harvey (1976), Arkin et al. (1976), Miller (1976) and Sicoly & Ross (1977), and provided results consistent with the

proposition that when concerns for self-esteem were likely to be aroused, individuals tended to accept responsibility for positive outcomes, and when possible, to deny responsibility for negative outcomes.

Internal Factors: Ability and Effort

When the combined internal attribution scores (Ability + Effort) in success and failure experiences in the "No future evaluation" condition were compared with those in the "Future evaluation" condition, there was no significant effect. In addition, when combined external attribution scores (Luck + Task Difficulty) of the success and failure experiences in the "No future evaluation" condition were compared with the "Future evaluation" condition, there was no significant effect either. It would appear from these results that the overall effect of evaluation apprehension was not strong enough to effect a significant change in the combined success and failure conditions.

However, the pronounced main effect on attribution scores for the success-failure condition, as well as an interaction with evaluation apprehension suggested that the success-failure conditions were significantly affected by evaluation apprehension. This meant that the subjects assigned significantly less credit for their success to

Ability and Effort, and more responsibility for their failure to lack of Ability and Effort, when they knew that the attributional data and their future performance were going to be evaluated in the future by other people.

Moreover, while analyzing internal factors "Ability" and "Effort" separately, consistent with the above results, attribution scores for "Effort" showed a main effect for success-failure, and a significant interaction of evaluation apprehension with the success-failure condition. However, it was observed that evaluation apprehension was more pronounced and significant for the success situation, but not for the failure condition. It would appear that there is something about the success situation that is different from the failure condition in that the manipulation of evaluation apprehension seemed to have had an impact on attributions to Effort in the success situation.

It is possible that a failure situation would seem more threatening to the subjects' self-esteem than a success situation, and self-protection rather than self-enhancement would be operative. Miller (1976), Sicoly & Ross (1977) reported that self-protective and self-enhancing tendencies were greater under high ego involvement situations. That is, high involvement failure subjects made greater attributions for their performance to luck and less to ability and effort, whereas high involvement success subjects

attributed more responsibility for their performance to ability.

Success would be a more pleasant experience, and the continued maximization of self-esteem might not be salient as would self-protection in a failure situation. Thus, the reduction in the causal asymmetry is greater in the success situation, than in the failure situation. When the situation is not too pressing, people can forgo short-term satisfaction for a long term gain. But, with a deficit-need condition (failure) when the deficit is too high (lower expectations for success), people cannot delay need gratification. So, in the failure situation, there is no reduced asymmetry, since failure is more attributed externally to afford self-protection. People might still have a need to make counterdefensive attributions for their failures, but they do not seem to make them to internal factors in the same manner as they appear to by taking reduced credit for their success. In other words, under success conditions one can expect less causal asymmetry, than under failure conditions.

External Factors: Luck and Task Difficulty

The hypothesis of the study was that in failure situations with future evaluation, people would attribute less responsibility to external factors (Luck and Task

Difficulty) and assign more responsibility for their failure to lack of ability and lack of effort. And, in success situations with future evaluation, they would assign more responsibility for external factors (Luck and Task Difficulty), and less responsibility for their ability and effort. However, results of the combined external factors (Luck + Task Difficulty) did not show significant results in terms of the above predictions.

Separate analysis of attribution to "Luck" showed a significant effect under "Success" vs "Success with future evaluation" condition. This is a partial confirmation of the hypotheses. In the "Failure" vs "Failure with future evaluation" condition, attribution of responsibility to luck did not change significantly.

As discussed earlier, it is speculated that with success outcomes being more pleasant and comforting situations, the continued need for maximal self-enhancement may not be an overly compelling need as, possible disconfirmation of present success and/or the attribution logic for it may not make one overly vulnerable to loss in social approval and self-esteem. Thus, a reduction in the attributional asymmetry can be accommodated without undue distress, whereas, in a failure situation, the deficit condition in self-esteem may be too strong for people to delay their immediate need gratification, and self-protection

ensues. Therefore, in a failure situation with future evaluation, evaluation apprehension did not seem to have an impact on attributions to "Luck". This is a partial disconfirmation of the hypotheses.

Examination of attributions to "Task Difficulty" failed to show significant effect between "Success" and "Success with future evaluation". However, between "Failure" and "Failure with future evaluation", attributions to Task Difficulty showed significant effect. That is, when there was evaluation apprehension and possibility for future disconfirmation, failure people took more responsibility for their failure by attributing significantly less responsibility for "Task Difficulty", or "Task Easiness" in this case. Here people accepted a smaller loss to personal self-esteem, now, to avoid a bigger loss of social approval, later on. This is in partial support of the hypotheses of the study.

In sum, it was observed here that in "failure with future evaluation" situations, people have made less attributions to "Task Difficulty", but not to "Luck". Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum (1971) and Weiner (1974) have illustrated that the four causal factors ability, task difficulty, effort and luck can be classified along two dimensions: (1) a locus of control dimension (i.e., internal or external), and (2) a stability dimension (i.e.,

stable or unstable). Along the stability dimension, ability and task difficulty are relatively stable, with effort and luck being much more variable. Perhaps, the stability dimension has an important part to play here. May-be, by the very nature of its being external and stable, "Task Difficulty" lends itself to future checking and evaluation by others and, therefore, ~~disconfirmation~~ is felt to be concretely more possible. So, to avoid disapproval from others and to safeguard their positive self-image, people are prompted to make counterdefensive attributions to avoid embarrassment resulting from public invalidation of a self-presentation that is too positive.

On the other hand, "Luck" is an external, but variable factor, which can change from time to time. Therefore, it may be felt impossible for future evaluators to say that the subjects did not have bad luck at the time of their performance, since luck is a variable factor which can keep changing. It would appear that people who perform under "Failure with future evaluation" deal with "Task Difficulty" and "Luck", differentially. That is, in a failure situation with future evaluation, people can protect their self-esteem by reducing the asymmetry of their attributions to a stable external factor (Task Difficulty) through counter-defensive attributions. Whereas, with a variable external factor (Luck), they can protect their self-esteem without counter-

defensive attributions, and keep the attributional asymmetry just as large as it was. As explained before, this is possible since luck is a variable factor and, therefore, cannot be disconfirmed by future evaluators.

The literature review has indicated that in Beckman's (1973) study, the subjects made counterdefensive attributions by taking significantly more responsibility for their failure, when they knew that the experimenter would compare their trial-by-trial performance with others. As in Beckman's study, Ross et al. (1974) found their subjects taking significantly less credit for their success and denying blame for their failure when there was possibility for future invalidation for their self-presentations. Feather and Simon's (1971) subjects' possible belief that the experimenter would compare their causal attributions with those of others may have prompted them to be more modest about their own abilities and attributes. Also, Wortman et al. (1973) found that subjects who anticipated future performance attributed less ability and more luck to themselves.

Consistent with the above studies, the results of the present study have shown that subjects who succeeded in the "future evaluation condition" attributed significantly less responsibility for their "Effort" and more responsibility for "Luck", whereas those who failed under

conditions of "future evaluation" assigned significantly less responsibility for their failure to "Task Difficulty". Although the findings of this study are not fully supportive of the hypotheses, they have provided partial support for the postulation that the potential for present and future invalidation of individuals' self-presentations tend to make them more modest about their own abilities.

Mood

The impact of the evaluation apprehension manipulation on "Mood" produced no significant difference between the mood of people with "No future evaluation" and those with "Future evaluation". However, the manipulation of success-failure conditions did result in significant changes in the mood of the subjects. Subjects were therefore, involved in the experience and in the "Failure" as well as the "Failure with future evaluation" conditions, they felt significantly worse than those in the "Success" and "Success with future evaluation."

Bradley (1978) in her review has remarked that researchers in the area of "Self-serving biases in attribution of responsibility" have assumed at least implicitly that success or failure on the experimental task represents affectively significant events for the participants. This means that success results in increased positive

affect, and failure results in increased negative affect. Further, it was also assumed that the positive and negative affective states produced by success and failure, mediate people's causal attributions for their performance outcomes.

In the model of this experiment, as diagrammed on page 29 and 30, the rise and fall of self-esteem, and the accompanying positive and negative affective states produced by having to maintain their efforts and performance standards, mediate people's causal attributions.

The results of this study have shown that the mood of the people in "success" conditions was more positive, whereas those in the "failure" conditions was significantly less positive. That is, the mood manipulation in the study has caused the people in the "failure conditions" to feel significantly worse than the ones in the "success conditions".

However, it does not appear that the steps taken to manipulate evaluation apprehension were strong enough throughout to have effected a significant impact on the affective states of the participants. Thus, the particular theoretical basis for counterdefensive responding was put only partially to the test, and subsequently, only partially supportive results were obtained. However, more consistent support and results were obtained on the manipulation of expectancy for future success.

Expectancy for Future Success

It was predicted that when there is evaluation apprehension, the anticipation of future disconfirmation of people's attributions would moderate the attributional asymmetries concerning success and failure and, consequently, expectations for their future success in both success and failure situations will also be modified. The results of the study showed that success people with future evaluation reported significantly lower expectations for their future success, and likewise, failure people with future evaluation showed significantly lower expectations for their future success (self-protective orientation). The lowering of the subjects' expectancies for future success could be interpreted as an attempt on their part to protect their future self-esteem. In other words, success people lowered their expectancy for future success so that they would not feel unhappy or inadequate if they did poorly in the future, especially since they knew there was a risk of future disconfirmation. Failure people would have used the same dynamics, in that they lowered their expectancies for future performance so that future failure would not be a devastating experience and, thus, an irreparable blow to their self-esteem. The dynamics that are prompting the reduction of causal asymmetries in the future expectancy

situations could be interpreted as being prompted by motivational parameters, namely, the enhancement or protection of self-esteem needs of individuals.

While it is true that the hypotheses of the study have not been fully supported, there is some evidence that the mechanism postulated does have impact in the direction predicted. Miller & Ross (1975) express the intuitive expectation, in spite of their hard and skeptical look at empirical data, that self-serving causal attributions probably do exist in spite of the methodological flaws in the demonstration of defensive attribution to date. The results of this study certainly support this expectation.

In order to provide a more conclusive test of the above mechanism, it would seem logical to carry out a second study which manipulates evaluation apprehension more strongly than was done in this study, and to test the impact of the stronger manipulation on dependent variables such as those investigated in the first study of this thesis.

CHAPTER V

RATIONALE AND HYPOTHESES - STUDY II

Effects of Ego-enhancing vs Ego-diminishing Feedback on Subsequent Ability Attributions

This chapter describes the rationale and hypotheses for Study II. First, the rationale for the study is given and, second, the hypotheses for the study are presented.

Rationale for the Study

The second study suggested at the end of chapter IV as the logical follow up of the first study of this thesis was, in the final analysis, contra-indicated by the fact that Weary (1980) did a study which essentially accomplished the same aim. Weary (1980) examined the conditions under which attributions reflected self-serving biases, or more "rational" information-processing strategies. More specifically, the study examined the relative influence of publicity of performance (high or low) and expected (positive or negative) and observed (positive or negative) outcomes on subjects' causal attributions and self-report of affect.

In the presence (high publicity) or absence (low publicity) of observers, college students subjects delivered therapeutic instructions that were expected to have a

positive or negative effect, and that resulted in a positive or negative effect on a supposedly phobic patient.

Overall, the most striking finding of the study was the pervasive effect of observed outcome. Consistent with earlier studies, individuals accepted more personal responsibility for positive than for negative outcomes, and they did so for both positive and negative expectancy conditions. Positive-negative outcome differences were more pronounced under high than low publicity conditions. This was due primarily for the observed tendency for high publicity subjects to accept less responsibility than low publicity subjects, for negative outcomes. Conditions of high publicity may have served to exaggerate subjects' concerns about evaluations of their performances (particularly when their performances were poor) and, consequently, their desires to present themselves in a favourable light.

In summary, the results of Weary's (1980) study corroborate earlier findings indicating that individuals accept greater responsibility for positive than negative outcomes. Although previous work has paid little attention to the impact of publicity of performance on causal attributions, Weary's (1980) findings indicate that publicity may sometimes exaggerate individuals' tendencies to make self-enhancing and self-protective attributions following positive and negative outcomes, respectively.

In view of Weary's (1980) findings, it was decided to manipulate self-esteem, rather than evaluation apprehension in the second study of this thesis. This decision was based on the frequent use of the concept of "self-esteem" by previous investigators in explaining the phenomenon of self-serving biases, and on account of the pivotal position given to the construct of self-esteem in the "defensive attribution" formulation. A review of the literature has revealed that self-esteem maintenance is the common parameter which has cropped up in every study dealing with causal attributional bias, and in effect can be seen as the common denominator that conceptually links all such studies together.

The self-esteem position assumes that the individual has a need to enhance his self-evaluation and to increase, maintain, or confirm his feelings of personal satisfaction, worth, and effectiveness. According to self-esteem theory (Jones, 1973), people respond favourably to positive evaluations of themselves, and unfavourably to negative evaluations to the extent that those evaluations are perceived as uniquely focussed on themselves.. (p. 198). The aim of the second study, therefore, was to see whether self-enhancing and self-protective biases modify attributions of responsibility.

We have evidence that people tend to attribute success internally, and failure externally. In this regard, Harvey et al. (1974), Luginbuhl (1975), Federoff & Harvey

(1976), Arkin et al. (1976), Miller (1976) and Sicoly & Ross (1977) have provided results, replicated in Study I of this thesis, consistent with the proposition that when concerns for self-esteem were likely to be aroused, individuals tended to accept responsibility for positive outcomes and, when possible, to deny responsibility for negative outcomes.

However, "ego strength" theories suggest the proposition that following success one may have less need for gratification and greater "frustration tolerance" than would be the case following failure and, therefore, one might engage less in self-enhancement under success than in the presence of failure. The above assumption was also taken into account in formulating the rationale for this study which predicts that when task successful people receive ego-enhancing feedback regarding a previous task, they would be less inclined to attribute their present success internally, when compared to others who receive ego-diminishing feedback concerning a prior task.

That is, individuals who succeed in their skill-oriented performance on one task are likely to feel good about it and, thus, enjoy increased self-esteem and positive affect. If their self-esteem is again increased due to feedback concerning their success in another important task, they should not be likely to make motivationally

based attributions to further enhance their self-esteem, since they already feel happy and secure from their former successful performance. In other words, the tendency to claim that all success is internally based, should be attenuated.

However, if individuals who succeed in their skill-oriented performance, and who enjoy the subsequent increased self-esteem, are told about their serious failure in another important task (manipulated feedback), it is predicted then that they would have a higher need to self-enhance, or even self-protect, and thereby would make motivationally based defensive attributions by assigning greater responsibility to internal factors (ability and effort), so as to enhance/protect their self-esteem. A need for the utilization of differential salience is possible here. The outcome will be an increase in internal attributions regarding their present skill-oriented performance.

In a parallel fashion, the study predicts that when task unsuccessful people receive ego-enhancing feedback regarding a previous task, they will be less inclined to attribute their present failure externally (the dynamics of differential salience may operate here, in that they can differentially choose, using ego-enhancing prior success feedback), when compared to others who receive ego-

diminishing feedback concerning a prior task (a significant basis for differential salience for self-protection is absent here).

In other words, individuals who fail in their present skill-oriented performance are likely to feel badly about it and themselves, and thus to experience a decrease in their self-esteem. In addition, they would be prone to use self-protective strategies. If they are now informed of their previous success in another important task (manipulated feedback), the boost in self-esteem should allow them to moderate their self-protective tendency with respect to the second task, as differential utilization of esteem income from the prior successful task can take place here. That is, there should be less emphasis on external attributions of task outcome.

On the other hand, if individuals who have failed in their present performance are told about their additional failure in another previous important task, they are likely to feel much worse about themselves, and thus to experience a much lowered self-esteem, as an important source of compensatory self-esteem is absent. This will prompt them to resort more to defensive attributional strategies and, consequently, there will be more external attributions (to Luck and Task Difficulty) and thus, a widening of the attributional asymmetry.

In this study, a high self-esteem condition will be produced via feedback to participants that they have done extremely well on a previous very important Social Perceptiveness Task. For another sub-group, a low self-esteem manipulation shall be produced via feedback to participants that they have done rather poorly on a previous very important Social Perceptiveness Task. There will be a subsequent manipulation check to assess the effectiveness of these manipulations.

Theoretical flow-charts of outcome effects on causal attributions under ego-enhancing and ego-diminishing success and failure feedback conditions are shown on page 76 and 77,

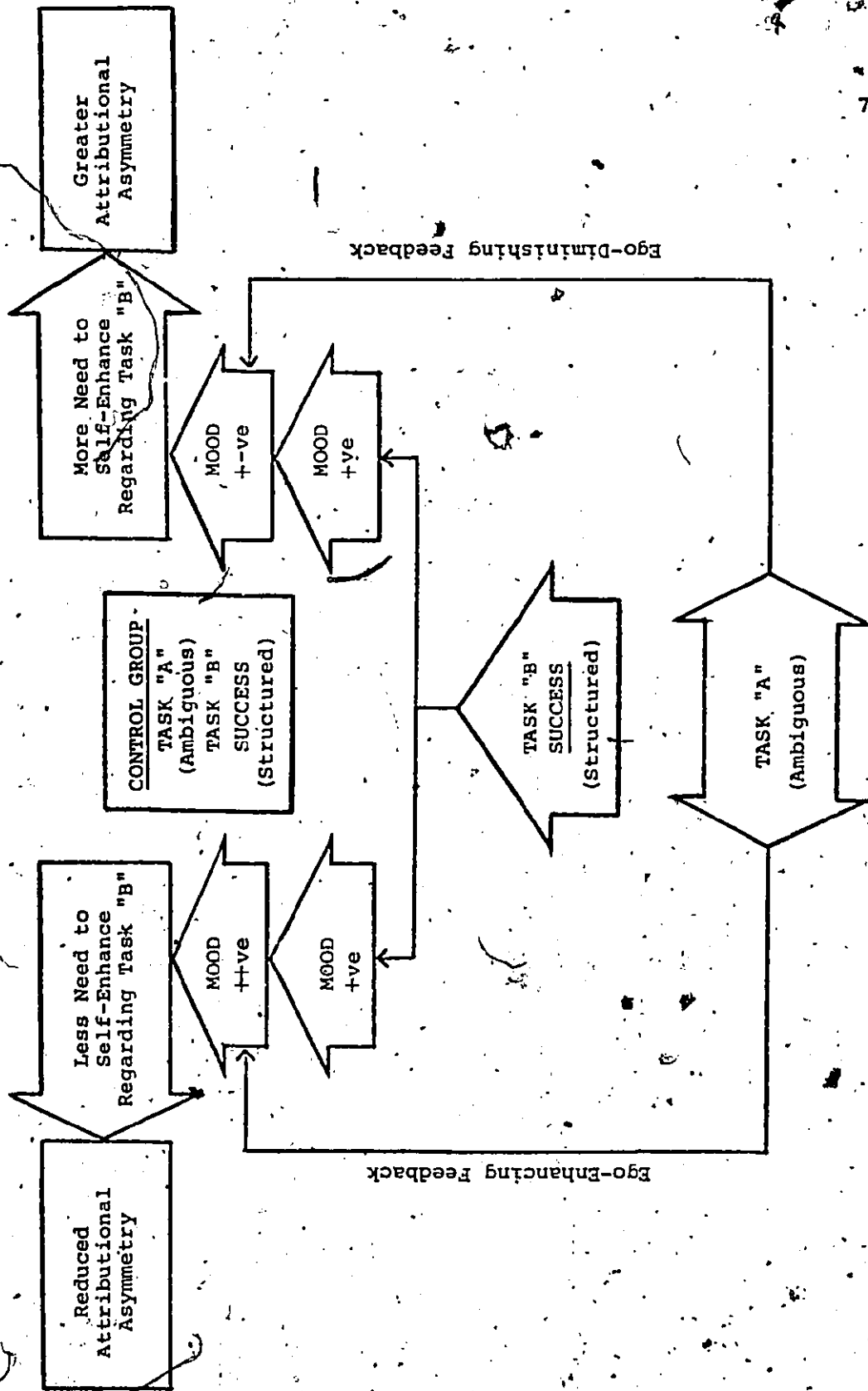


Figure 6. Flow Chart of Outcome Effects on Causal Attributions under Ego-Enhancing and Ego-Diminishing SUCCESS Condition

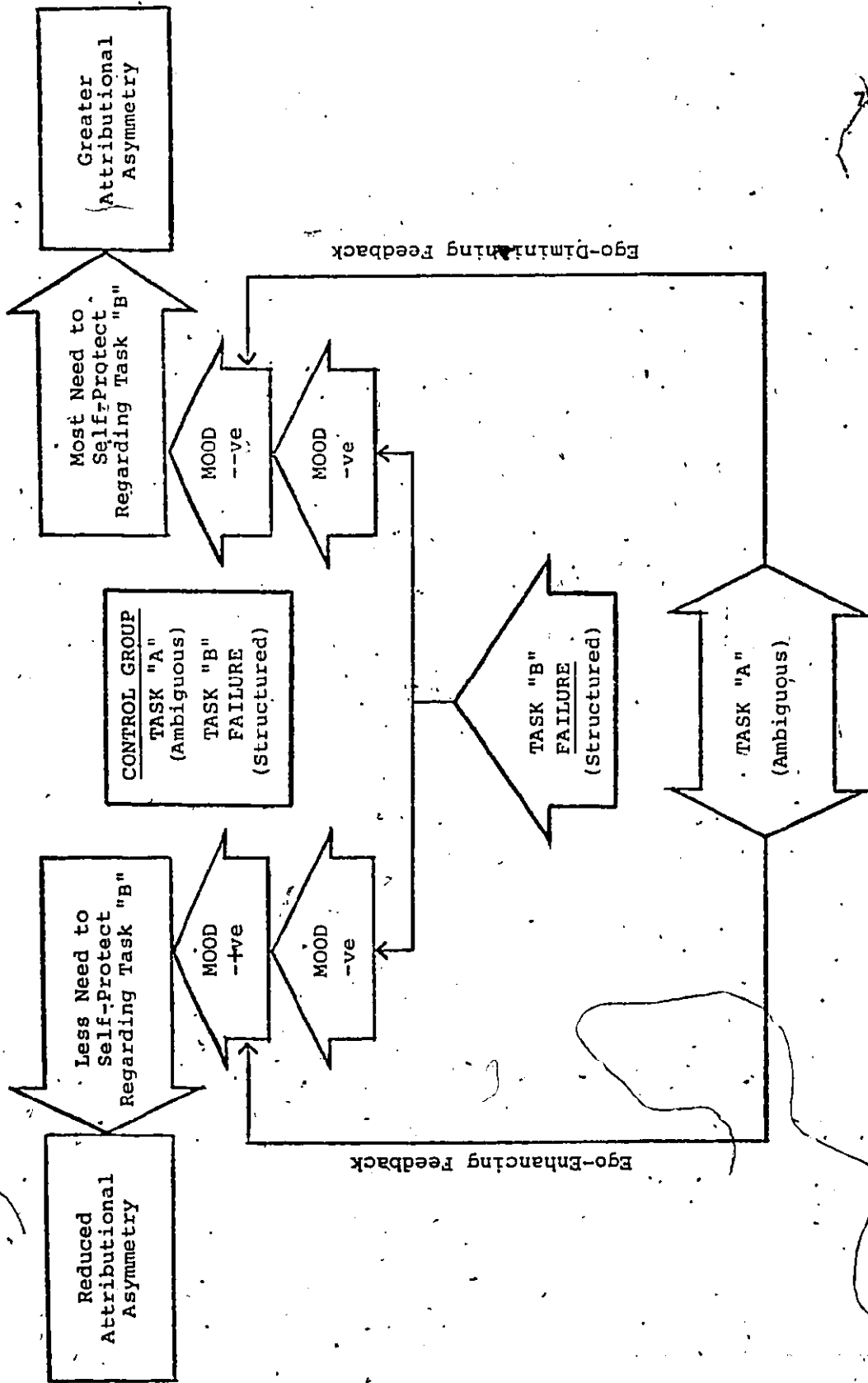


Figure 7. Flow Chart of Outcome Effects on Causal Attributions Under Ego-Enhancing and Ego-Diminishing FAILURE Condition

Hypotheses - Study II

Building on the assumption that the tendency of individuals to enhance their self-esteem under success conditions, and to protect their self-esteem under failure conditions, can be moderated via ego-related feedback concerning important previous success/failure outcomes, it was hypothesized that:

- 1) subjects who succeed on a present task, and who are given ego-enhancing feedback regarding their success on a prior task are predicted to attribute their present success less to internal factors (Ability and Effort) than are other subjects who succeed on the present task, but who receive ego-diminishing feedback regarding their failure on a prior task
- 2) subjects who fail on a present task, but who receive ego-enhancing feedback regarding their success on a prior task are predicted to attribute their present failure less to external factors (Luck and Task Difficulty), than are other subjects who fail the present task and who receive ego-diminishing feedback regarding their additional failure on a prior task.
- 3) there will be less attributional asymmetry for success and failure under the ego-enhancing feedback regarding prior success condition, than under the ego-diminishing feedback regarding prior failure condition.

CHAPTER VI

EXPERIMENTAL PROCEDURES - STUDY II

The purpose of this chapter is to present the procedures used to test the experimental hypotheses. First, the selection procedures for the subjects and the description of the sample are given. Second, details of manipulation of independent variable are presented. The third section deals with data collection, while the fourth section describes the measurement devices used in the experiment.

Subjects

Subjects in this study were 120 female students (between the ages of 17 and 19) enrolled in the Smiths Falls District Collegiate Institute, Smiths Falls, during the 1979-1980 school year. In order to get sufficient number of subjects for the study, it was necessary to use students from three grades, namely, grades 10, 11 and 12. All subjects were white Caucasian Anglophones.

As an incentive for the subjects' involvement in the study, all subjects were paid a dollar each for their participation in the study.

In the experiment, the 120 subjects were randomly assigned to six groups of 20 subjects per group. Each

group of subjects was placed in one of the six experimental conditions as shown below:

Condition	F e e d b a c k		
	Ego-enhancing Feedback	Control	Ego-diminishing Feedback
Success	20	20	20
Failure	20	20	20

Manipulation of Independent Variables

Two sets of anagrams were used in this study. One was a set of 10 anagrams, the success rate of which was pretested and found to be 80.1% (see Appendix 5). The other was another set of 10 anagrams, the failure rate of which was determined to be 79.7% by pretesting (see Appendix 6). The pretesting of these anagrams were done among female students from the same school and grade level from where the subjects for this study were drawn. The subjects who completed the pretests were not allowed to participate in the experiment, and had been asked not to discuss the project with others.

In order to test the effects of the independent variables, subjects in this study were placed in six groups

of 20 subjects per group, as described earlier. Success and failure conditions were manipulated by administering Success anagrams to three groups of subjects, and Failure anagrams to the remaining three groups. Self-esteem of the subjects was manipulated by manipulating the results of a bogus "Social Perceptiveness Test" which all subjects completed at the beginning of the experiment (see Appendix 11). Half of the Success group and half of the Failure group were subjected to High self-esteem manipulation. The remaining two halves were exposed to Low self-esteem manipulation.

Data Collection

The experimenter informed the students that he was doing a project to assess the Social Perceptiveness of students in the Smiths Falls area. To do this, he would be giving them two pictures of an event, and that they would be asked to write a couple of sentences each on:

- a) what the situation is in the picture?
- b) what led up to it?
- c) what are the feelings and thoughts of the characters?
- d) what the outcome will be? (see Appendices 12 & 13)

They were told that high scores on this test are often positively correlated with intelligence, personal happiness and job satisfaction.

In the afternoon they would be given a set of scrambled words (anagrams). After completing the anagrams they would be asked to complete a few questionnaires of short duration. They were informed that after completion of their participation in the study, they would receive an explanation of the project after which, they could ask any questions they had about the nature of the research.

They were also informed that each of them would receive a dollar each for participating in the study.

The completion of the Social Perceptiveness Test, anagrams and questionnaires and collection of data were done in groups of 20 subjects. Each group listened to an introductory speech that explained the nature of the experiment and procedures the subjects were to follow (see Appendices 11, 14 & 15).

To obtain a baseline measurement of mood, all subjects were asked, at the beginning of the experiment, to complete a "Semantic Differential Check List", same as the one used in Study I (see Appendix 9). All subjects then completed the Social Perceptiveness Test. In the afternoon the three groups of subjects in the Success condition completed "Success Anagrams" (see Appendix 5), and the three groups in the Failure condition completed "Failure Anagrams" (see Appendix 6). From the number of anagrams the subjects solved, they were able to know whether they

succeeded or failed in the anagram task. The Social Perceptiveness Test and the Anagram Test were conducted in separate class rooms.

At this point, the assistant to the experimenter handed over to the subjects (individually, on separate sheets of paper), the results of the Social Perceptiveness Test they had completed earlier. The results were so arranged that one group each from the Success and Failure conditions received ego-enhancing feedback (see Appendix 16), and the other groups (except the control groups) received ego-diminishing feedback (see Appendix 17). The control groups did not receive any feedback from the Social Perceptiveness Test. The control group was designed to function as an anchor point so as to observe the magnitude and direction the manipulation of the Social Perceptiveness Test had, on the subjects' affect and attributions (see Flow Charts on page 76 and 77).

The mood of all the subjects was again measured at this point by administering the Semantic Differential Check List. Soon after this, the subjects were asked to assign responsibility for their success/failure on an "Attribution of Responsibility Rating Scale" (see Appendices 7 and 8) and three other questionnaires.

When all subjects had returned their anagrams and questionnaires to the experimenter who checked to verify


that all items were completed, they were thoroughly debriefed by giving them an explanation about the nature of the experiment. They were free at that time to ask any questions they wanted.

Everybody was paid a dollar each for their participation in the study, as promised.

Before dismissing the group, the experimenter thanked the subjects for their participation in the study, and asked them not to discuss their knowledge of the study with other students or friends. These group meetings generally lasted for about an hour.

Measurement Devices

As mentioned earlier, all the subjects completed the Semantic Differential Check List at the beginning of the study, as well as just before assigning responsibility for their success/failure, as a means to measure their affect. It was felt that success or failure on the experimental task represented affectively significant events for the subjects, and success would result in increased positive affect, and failure would result in increased negative affect. It was further felt that the positive and negative affective states produced by success and failure respectively would mediate the subjects' causal attributions for the outcomes of their performance.



As in Study I, the dependent variable attribution of responsibility was measured in terms of four factors: ability, effort, luck, and task difficulty. A 9-point Likert Scale item that ranged from "No extent" (Value 1) to "Extremely high extent" (Value 9) was used to measure the prominence of each factor as influencing the subjects' performance (see Appendices 7 & 8). Subjects were asked to rate all the four factors appropriately by placing a circle around the number they wished to indicate.

A questionnaire designed to ascertain the effects of manipulation of both high and low self-esteem subjects was then administered. This consisted of a question which asked them as to how strongly they felt like taking credit/avoiding responsibility for their success/failure. A 9-point Likert Scale item that ranges from "No extent" (Value 1) to "Extremely high extent" (Value 9) was used to measure their responses (see Appendices 18 & 19).

The next questionnaire was designed to measure the subjects' tendencies for self-enhancement/self-protection, which asked them as to what extent would they be inclined to use/ignore the results of the anagram task to boost/protect their self-esteem. This also consisted of a 9-point Likert Scale item that ranged from "No extent" (Value 1) to "Extremely high extent" (Value 9) (see Appendices 20 & 21). It was expected that the high self-esteem

manipulation subjects would use their good results to self-enhance themselves, and the low self-esteem subjects would ignore their failure to self-protect themselves.

The last questionnaire asked the subjects what their expectations were for future success, if ten similar anagrams were given to them in the future. This was a similar questionnaire like in Study I (see Appendix 10). It was expected that ego diminishing feedback would significantly reduce the subjects' expectations for future success, in both success and failure conditions.

CHAPTER VII

PRESENTATION OF RESULTS - STUDY II

In this chapter, the statistical procedures used to analyze the data are presented. The chapter consists of two sections. Section one describes the manipulation checks of the independent variables. The second section presents analysis of variance procedures and post hoc methods used to measure the results of the manipulation of independent variables and other related questionnaires. Alpha level for all analyses was set at .05.

Checks of Manipulation of Independent Variables

Before actual data were collected, to find out whether the success and failure anagrams actually prompted 80% success or failure outcomes, 50 female volunteer subjects were recruited from the same classes as subjects for the main study, and were randomly assigned to two equal groups. One group completed a set of success anagrams, the mean success rate of which was found to be 80.1%. The other group completed a set of failure anagrams, the mean failure rate of which was 79.7%. These tests established that the success and the failure anagrams brought about the desired success and failure conditions in the test situation.

Two questionnaires were designed to measure the

effects of manipulation of high and low self-esteem of the subjects, respectively. Each was a 9-point scale, and on the high self-esteem questionnaire, the subjects' average score was 7.77, indicating that these subjects, in their view, were taking credit for their successes to a great extent. On the low self-esteem questionnaire, the subjects' average score was 7.24, indicating that they were avoiding responsibility for their failure to a great extent also. These tests established that the self-esteem manipulations brought about the desired high and low self-esteem conditions in the subjects.

Analysis of Attribution of Responsibility

As shown on Table 9, page 89, there was a significant effect for internal factors (Ability + Effort) under success, for the Feedback conditions ($F(2, 57) = 5.53, p < .05$). That is, there were significant differences in the extent to which subjects who had received ego-enhancing feedback, Control subjects, and subjects who had received ego-diminishing feedback, attributed their success on a simple anagram task to their own ability and effort. More specifically, post hoc analysis revealed a significant difference between the ego-enhancing ($\bar{X} = 12.9$) and ego-diminishing ($\bar{X} = 13.95$) feedback groups, the latter's higher scores indicating a greater self-serving tendency

Table 9

Analysis of Variance of Internal Factors (ABILITY + EFFORT)
Under Success Condition, Across Ego-enhancing, Control,
and Ego-diminishing Feedback Conditions

Source of variation	SS	df	MS	F Ratio
Between groups	18.7	2	9.35	
Within groups	96.8	57	1.69	
Total	115.5	59		5.53*

*p < .05

Table 10

Means and Standard Deviations of Subjects' Scores for Internal Factors (ABILITY + EFFORT) Under SUCCESS Condition, Across Ego-enhancing, Control and Ego-diminishing Feedback Conditions

	Ego-enhancing feedback		Control		Ego-diminishing feedback	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	12.9	1.18	13	1.1	13.95	1.5

to attribute success to internal factors (Ability and Effort). Post hoc analysis did not reveal significant differences between either experimental group and the control group ($\bar{X} = 13.0$), although in absolute terms the ego-enhancing feedback group had a lower mean, and the ego-diminishing feedback group had a higher mean than the control group. These results support the first hypothesis of the study.

The results for external factors (Luck and Task Difficulty) under failure for the feedback conditions also showed significant effect ($F(2, 57) = 5.51, p < .05$) (see Table 11, page 92). That is, there were significant differences in the extent to which subjects who had received ego-enhancing feedback, control subjects, and subjects who had received ego-diminishing feedback attributed their failure on a simple anagram task, to luck and task difficulty. More specifically, post hoc analysis revealed a significant difference between the ego-enhancing ($\bar{X} = 9.9$) and ego-diminishing ($\bar{X} = 11.3$) feedback groups, the latter's higher scores indicating a greater self-serving tendency to attribute failure to external factors (luck and task difficulty). Post hoc analysis did not reveal significant difference between either experimental group and the control group ($\bar{X} = 10.1$), although in absolute terms, the ego-enhancing feedback group had a lower mean, and the

Table 11

Analysis of Variance of External Factors (LUCK + TASK DIFFICULTY)
 Under Failure Condition, Across Ego-enhancing, Control,
 and Ego-diminishing Feedback Conditions

Source of variation	SS	df	MS	F Ratio
Between groups	27	2	13.5	5.51*
Within groups	140	57	2.45	
Total	167	59		

*p < .05

Table 12

Means and Standard Deviations of Subjects' Scores for External Factors (LUCK + TASK DIFFICULTY) Under FAILURE Condition, Across Ego-enhancing, Control and Ego-diminishing Feedback Conditions

Ego-enhancing feedback		Control		Ego-diminishing feedback	
\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
9.9	1.52	10.1	1.87	11.3	1.1

ego-diminishing feedback group had a higher mean than the control group. These results support the second hypothesis of the study.

The third hypothesis of this study predicted that the attributional asymmetry for success and failure under ego-enhancing feedback will be less than that under the ego-diminishing feedback. In other words, regardless of present success or failure, subjects who received ego-enhancing feedback regarding a prior task would differ less in their attributions from control subjects, than subjects who received ego-diminishing feedback regarding a prior task. The results indicated that the asymmetries for success and failure under ego-enhancing feedback were significantly less ($\bar{X} = .1$, and $\bar{X} = .2$, respectively), whereas, those for ego-diminishing feedback were significantly more ($\bar{X} = .95$, and $\bar{X} = 1.2$, respectively) (see Table 13, page 95). These results support the third hypothesis of the study.

An analysis of mood was undertaken, not so much for the purpose of testing a hypothesis which followed from theory, but rather to test the implicit assumption referred to by Bradley (1978) that success or failure on the experimental task represents affectively significant events for individuals, and to replicate the findings of the first study to the effect that success and failure conditions

Table 13

Attributional Asymmetry of Success and Failure Under
Ego-enhancing and Ego-diminishing Feedback Conditions

	Ego-enhancing	Control	Asymmetry	Ego-diminishing	Control	Asymmetry
	\bar{X}	\bar{X}	\bar{X}	\bar{X}	\bar{X}	\bar{X}
Success	12.9	13	.1	13.95	13	.95
Failure	9.9	10.1	.2	11.3	10.1	1.2

indeed are affectively significant events. Beyond that, it was also meant to extend this line of reasoning to the realm of the ego-enhancing and ego-diminishing feedback conditions.

A baseline mood of all subjects was taken at the beginning of the experiment. On this measure, there were no significant differences among the subject groups ($F(5, 114) = .39$). A second measure of mood was obtained immediately after the ego-enhancing or ego-diminishing feedback, but before the subjects were requested to attribute responsibility, on the expectancy that ego-enhancing feedback should have a positive impact on mood, while ego-diminishing feedback should have a negative impact.

Results of the analysis of variance revealed a significant difference between ego-enhancing and ego-diminishing conditions ($F(2, 114) = 21.77, p < .01$) (see Table 14, page 97), and in addition the ego-diminishing condition differed significantly from the control, while the ego-enhancing condition did not differ, but was in the expected direction.

In the first study, a significant difference in mood had been observed between success and failure conditions. The second study replicates this finding ($F(1, 114) = 90.34, p < .01$). There was no significant interaction between success-failure and feedback condition with reference

Table 14

Analysis of Variance of the Rated Significance of MOOD
as a Function of Self-esteem Manipulation

Source of variation	SS	df	MS	F Ratio
Feedback conditions (A)	1,004.1	2	502.05	21.77*
Success-Failure (B)	2,083.3	1	2,083.3	90.34*
A x B	6.1	2	3.05	.13
Within groups	<u>2,628.4</u>	<u>114</u>	23.06	
Total	5,721.9	119		

*p < .01

Table 15

Means and Standard Deviations of Subjects' MOOD Scores as a Function of Self-esteem Manipulation

	Ego-enhancing feedback	Control	Ego-diminishing feedback	Combined
Success	\bar{X} 44.4 S.D. 5.91	\bar{X} 42.3 S.D. 6.3	\bar{X} 37.9 S.D. 5.64	\bar{X} 41.53
Failure	\bar{X} 36.7 S.D. 2.38	\bar{X} 33.7 S.D. 2.07	\bar{X} 29.2 S.D. 3.85	\bar{X} 33.2
Combined	\bar{X} 40.55	\bar{X} 38.0	\bar{X} 33.55	

to mood.

These results are compatible with the motivational model of attribution of causality which implies that mood is a mediating factor underlying individuals' self-attributions for positive and negative outcomes.

The questionnaire designed to measure the subjects' tendencies for self-enhancement or self-protection under ego-enhancing vs ego-diminishing feedback conditions (Success or Failure - see Table 16, page 100) revealed a statistically significant effect. That is, there was significant difference between success with ego-enhancing feedback ($\bar{X} = 6.6$) and success with ego-diminishing feedback ($\bar{X} = 7$), and also between failure with ego-enhancing feedback ($\bar{X} = 5.2$) and failure with ego-diminishing feedback ($\bar{X} = 5.6$). These results indicated that the self-esteem manipulations were effective, and brought about changes in the subjects' self-enhancement and self-protective tendencies as desired.

When the rated importance of the subjects' Expectations for Future Success was studied as a function of the outcome and expectations for future interaction (see Table 17, page 101), it was observed that in the feedback conditions there was a statistically significant difference ($F(2, 114) = 9.75, p < .05$) between ego-enhancing feedback ($\bar{X} = 5.6$) and ego-diminishing feedback ($\bar{X} = 4.9$). The

Table 16

t Tests Showing Subjects' Tendencies for Self-enhancement and Self-protection Under Ego-enhancing and Ego-diminishing Feedback Conditions

	Self-enhancing feedback		Ego-diminishing feedback		n	t obs.
	\bar{X}	SD	\bar{X}	SD		
Self-enhancement (SUCCESS)	6.6	.66	7	.5	20	2.063*
Self-protection (FAILURE)	5.2	.67	5.6	.49	20	2.084*

*p < .05

Table 17
 Analysis of Variance of the Rated Importance of EXPECTATIONS
 FOR FUTURE SUCCESS as a Function of Outcome and
 Expectation for Future Interaction

Source of variation	SS	df	MS	F Ratio
Feedback conditions (A)	9.36	2	4.68	9.75*
Success-Failure (B)	974.7	1	974.7	2,030.6**
A x B	1.54	2	.77	1.6
Within groups	54.9	114	.48	
Total	1,040.5	119		

*p < .05
 **p < .001

Table 18

Means and Standard Deviations of Subjects' Scores for EXPECTATIONS FOR FUTURE SUCCESS, as a Function of Outcome and Expectations for Future Interaction

	Ego-enhancing feedback		Control		Ego-diminishing feedback		Combined	
Success	\bar{X}	8.3	\bar{X}	8.15	\bar{X}	7.9	\bar{X}	8.1
	S.D.	.71	S.D.	.73	S.D.	.62		
Failure	\bar{X}	2.9	\bar{X}	2.5	\bar{X}	1.9	\bar{X}	2.43
	S.D.	.7	S.D.	.59	S.D.	.44		
Combined	\bar{X}	5.6	\bar{X}	5.32	\bar{X}	4.9		

contrast between control ($\bar{X} = 5.32$) and feedback conditions also yielded a statistically significant result to the effect that ego-diminishing feedback differed significantly from control, but ego-enhancing feedback did not.

To recapitulate, the key results of the study were the following:

There was a significant difference between ego-enhancing and ego-diminishing feedback groups under the success condition for internal factors (Ability + Effort).

There was a significant difference between ego-enhancing and ego-diminishing feedback groups under the failure condition for external factors (Luck + Task Difficulty).

In the presence of ego-enhancing feedback regarding prior success, contrasts between success and control subjects, or between failure and control subjects yielded smaller attributional asymmetry than did similar contrasts in the presence of prior ego-diminishing feedback.

There was a significant difference in the subjects' Mood (before making attributions), when contrasting ego-enhancing and ego-diminishing feedback conditions. However, only the ego-diminishing group differed significantly from the control group. The mood of the success group was significantly more positive than that of the failure group,

but there was no significant interaction between success-failure and feedback conditions.

There was a significant difference in the subjects' Expectancies for Future Success when contrasting ego-enhancing and ego-diminishing groups; however, only the ego-diminishing group differed significantly from the control group.

The expectancies of the success group were significantly greater than those of the failure group, but there was no significant interaction between success-failure and feedback conditions.

The next chapter will discuss the implications of these results.

CHAPTER VIII

DISCUSSION OF RESULTS - STUDY II

Study I of this thesis investigated the impact of evaluation apprehension on causal attributions, the predictions being that the potential for present and future invalidation of individuals' attributions would tend to make them more modest about their perception of their own abilities so as to retain public credibility in the long run. The results of this study were partially supportive in that, as predicted, subjects who expected future evaluation attributed their success less to their own "effort" and more to "luck"; however, similar findings were not obtained with reference to "ability" and "task difficulty." Similarly, those who expected future evaluation attributed their failure less to "task difficulty" than to "luck", but they failed to attribute their failure to "lack of ability" or "lack of effort."

The logical follow-up of the first study with stronger manipulation of evaluation apprehension was not done since Weary (1980) essentially accomplished it with conclusive results, by examining the effects of publicity on subjects' causal attributions. The second study of this thesis, therefore, manipulated overall affect concerning self-worth, via esteem-related feedback, on account

of the pivotal position given to self-esteem in the "defensive attribution" formulation, and based on the assumption that people bias their description of causality so as to protect or enhance their self-esteem.

Three hypotheses were tested in this study. In the balance of this chapter, each will be presented in turn, and the relevant findings will be discussed.

Internal Factors - (Ability + Effort)

The first hypothesis contrasted the attributions made by subjects who were successful at a given task (anagrams) under two conditions: 1) when they were given positive ego-enhancing feedback to the effect that they have succeeded on a previous important task, and 2) when they were given negative ego-diminishing feedback to the effect that they have failed on a previous important task.

The results of the study supported this hypothesis by showing that subjects who received ego-enhancing positive feedback attributed their current success less to internal factors than did the ego-diminishing feedback group.

In other research, an increase in social responsibility and in helpful behaviour has been found after success (compared to failure, or no experience), in college students. In particular, Berkowitz and Connor (1966)

showed that successful subjects became more motivated to aid a needy person - a finding supported by Isen (1968). Commenting on their data, Berkowitz and Connor (1966) speculated that:

"the success experience had produced a glow of goodwill . . . Feeling happy, if not even somewhat elated, the successful subjects could have been simply more willing to tolerate increased psychological costs to themselves (p. 669)."

Studies on "Selective Attention to the Self" have shown that the "warm glow" produced by success leads to more benign reaction to the self, more charitable behaviour, and a variety of helpful acts (Isen, 1970; Mischel & Ebbersen, 1976), the idea being that such experience of success does produce enhanced self-esteem in the subjects.

The findings of this study are compatible with this kind of interpretation in that the subjects in the positive ego-enhancing feedback condition showed less need to take credit for their success, since they were already experiencing an enhanced self-esteem on the basis of the feedback which they had received. Whereas, the other group of subjects does have a need to self-protect themselves for the loss of self-esteem they sustained on account of the negative ego-diminishing feedback they received from a prior important task.

Therefore, the findings based on the test of the

first hypothesis are in support of a motivational model of causal attributions.

External Factors (Luck + Task Difficulty)

The second hypothesis contrasted the attributions made by subjects who were unsuccessful at a given task (anagrams), and who were given ego-enhancing or ego-diminishing feedback regarding a previous important task.

The results of the study supported this hypothesis by indicating that failure subjects who received ego-enhancing feedback attributed their failure less to external factors than did the ego-diminishing feedback group.

The above findings mean that failure subjects in the positive ego-enhancing feedback condition have less need to attribute their present failure externally, since they are able to differentially choose the positive feedback results to maintain their self-esteem. On the other hand, the failure group who experienced further failure in the prior important task felt much worse about themselves, and had to resort to external attributions to protect their self-esteem, since an important source of compensatory self-esteem was absent.

The review of literature had indicated that while the nature of evaluation and interpretive activities may prompt individuals' tendencies to make self-serving causal

attributions, the empirical tests have not been unequivocally demonstrated, and were vulnerable to rival interpretations. In reviewing the results of the studies of this thesis, it is evident that the results of the first study has replicated earlier findings that people take credit for their successes and deny responsibility for their failures, and thus provided support for self-serving biases in causal attributions.

Mikler & Ross (1975) cited the findings of Feather & Simon (1971), Beckman (1973), Wortman et al. (1975), and Ross et al. (1974), as evidence against the self-serving bias formulation. These results, however, were consistent with the notion that when faced with future performance where failure is possible, individuals will underestimate their ability in an attempt to avoid embarrassment resulting from public invalidation of a positive self-presentation. This broadened self-serving bias formulation was also tested out in the first study, which provided partial support for the predictions.

The second study of this thesis manipulated overall affect concerning self-worth via ego-enhancing and ego-diminishing feedback. The results of the study demonstrated that people bias their descriptions of causality so as to protect or enhance their self-esteem. These results, in conjunction with the findings from the first study, have

provided empirical evidence for the operation of motivationally based self-serving biases in attribution of causality.

Attributional Asymmetry

The third hypothesis of the study represents an extrapolation from the first and second hypotheses, and is based on the assumption that it is easier to change someone's self-esteem for the worse, than it is for the better. Therefore, it predicted that ego-diminishing feedback would have a greater impact on individuals' self-esteem than ego-enhancing feedback. In sum, greater attributional asymmetry concerning success and failure (from the control group) was predicted under conditions of ego-diminishing feedback regarding prior important outcomes.

According to the results of the study, the difference between ego-enhancing and control subjects was consistently less than the difference between ego-diminishing and control subjects, whether under conditions of present success or failure. This supports the prediction of the study.

It would appear that there is something about the success condition that is different from the failure condition, in that the manipulation of self-esteem seemed to have had a differential impact on success and failure.

It is possible that a failure situation would seem more threatening to the subjects' self-esteem than a success situation, and self-protection rather than self-enhancement would be operative. Miller (1976), Sicoly & Ross (1977) reported that self-protective and self-enhancing tendencies were greater under high ego-involvement situations. It may be that the ego-diminishing situation is more threatening to the subjects' self-esteem. What it means is that being told that one has failed in a task is more threatening to the ego in the sense that it is highly ego-involving, and it forces one to shift his attributional biases to protect oneself.

Findings Concerning Mood

Mood was examined as it was felt that success or failure might represent affectively significant events and, therefore, that any affective responses during task performance would influence the subjects' causal attributions. It was, therefore, predicted that the mood of people who succeeded should be more positive than those who failed, and the mood of those given ego-enhancing feedback should be more positive than those receiving ego-diminishing feedback.

Mood was introduced as a variable in the study not so much as to test the theoretical hypothesis, but rather

because it seemed a logical variable to study, about which no empirical evidence has been provided previously. Weary (1980) hypothesized affect to influence causal attributions, but did not find support for her predictions; however, she found support for egotism.

Attributional variations in the present study did parallel the manipulated affective states as predicted, in that it went in the expected direction, suggesting that task and feedback manipulations affected mood.

The basis for the discrepancy (between Weary's and this study) may be due, as Weary suggest, to the more gross focus of the Joy Distress (Izard, 1972) scale used. This does not seem to be the only factor, however, as the scale on the Semantic Differential does not seem any less global nor less molar as measures of affect. More probable may be the intensity of the manipulation of ego-relevant feedback as a differential factor. That is to say, the way Weary manipulated evaluation apprehension factor may not have, as directly, nor intensively, induced alterations in self-related affect, as did the directly focused ego-enhancing and ego-diminishing feedback manipulations used in the present study. An additional factor may be the more precise and sensitive measurement characteristics of eight 7 step semantic differential scales, compared to the three 5 step scale used by Weary.

The results regarding "mood" are encouraging, as it went in the expected direction, and suggest that mood may be an intervening variable in the motivational model of causal attributions, something which deserves further study in future research.

Findings Concerning Expectancy for Future Success

A considerable body of research suggests that success or failure on a task generates increments and decrements, respectively, in the subjective expectancy for success on other closely related tasks (e.g., Mischel & Staub, 1965; Rotter, 1954). It is recognized that the experience of past success (and failure) and the expectancies for future success (and failure) tend to be both conceptually and operationally interrelated. Subjects who experienced success on the first task probably would have greater expectancies for success on a similar subsequent task, than those who had failed.

Based on the above, it was expected that people who succeed should have greater expectations for future success than those who fail, and that the expectations for future success of those given ego-enhancing feedback should be greater than those of ego-diminishing feedback. The findings of the study fully support these predictions, as statistically significant results were obtained when

such contrasts were made with expectancy for future success as a dependent variable. These results are also compatible with the motivational model of causality.

Concluding Comments

In conclusion, it does appear that ego-enhancing and ego-diminishing feedback constitute conditions under which altered affective states concerning self-worth arise, which in turn accompany systematically reduced or increased self-serving attributional biases. The selective operation of the need to enhance or self-protect which appears to operate contingent upon outcome and affective state appear to constitute evidence of a motivational bias in the formation of causal inferences. The study has also provided partial support to a broadened self-serving bias formulation which postulates that when faced with future performance where failure is possible, individuals will underestimate their ability in an attempt to avoid embarrassment resulting from public invalidation of a positive self-presentation.

It has, in addition, contributed some clarification to the controversy which exists in the literature of self-serving biases in causal attributions, by providing empirical evidence as mentioned above.

In broad terms, results of this study may have implications in the sense that the consequences generated

by success (and enhanced self-esteem/affect) may increase our optimism in general, and our affection for others, such that we may demonstrate less need of clutching all of our resources to ourselves, and are more willing to give others more of our prized possessions. Successful goal attainment can conceivably facilitate individuals' adherence to the societal ideals, and improve their motivation to be willing to tolerate inconveniences and barriers to immediate need gratifications.

Although the pervasive consequences of success and of positive affect for generosity both towards self and others are becoming increasingly well established, the mechanisms responsible for these phenomena are less evident. The tendency for people to become non-contingently more benign towards themselves and/or others might be mediated by changes in self-esteem and perceived competence produced by successful performance or, alternatively, this tendency might be the result of any increment in positive affect, regardless of how it is generated. Further elucidations of the critical processes and conditions that regulate when the experience of success and increased esteem enhance self-gratification - and when they do not - will be a challenging task for future researchers.

Summary and Conclusions of the Thesis

To recapitulate, this thesis examined the Management of Ability Attributions via Defensive and Counter-defensive Attributional Strategies, in two studies.

Study I investigated the impact of evaluation apprehension on causal attributions. It was hypothesized that the potential for present and future invalidation of attributions would tend to make subjects more modest about their conscious perception of their own abilities, in order that they might retain public credibility in the long term. In keeping with this notion, study I of this thesis found support for the idea that individuals who succeed in a present task, but expect future evaluation attribute their success less to their own "effort" and more to "luck", than is the case of similar subjects who do not expect future evaluation. However, similar findings were not obtained with reference to "ability" or "task difficulty."

A similar assessment of subjects who fail in a present task showed that, when they expect future evaluation, they attribute their failure less to task difficulty than similar subjects who do not expect future evaluation. However, significant differences were not obtained when contrasting failure subjects who expected or did not expect future evaluation with reference to the variables "luck",

"ability" and "effort". Therefore, since the results of the first study of this thesis provided only partial support for the hypotheses, a second study was carried out.

The second study was designed to investigate the impact of experimental modifications of individuals' self-esteem (via ego-enhancing and ego-diminishing feedback) on causal attributions (to internal or external factors) for success or failure on a skill-oriented anagram task. It was predicted that people's tendency to enhance their self-esteem under success conditions, and to protect their self-esteem under failure conditions, can be moderated via ego-related feedback concerning important success or failure outcomes on other tasks. When this was tested, there was a significant difference as predicted, between ego-enhancing and ego-diminishing feedback groups under success conditions (the ego-diminishing subjects having a greater tendency to attribute success to ability and effort), and under failure conditions (the ego-diminishing subjects having a greater tendency to attribute their failure to luck and task difficulty). In addition, there was a significant difference in attributional asymmetry in the sense that (regardless of success or failure), the subjects who received ego-enhancing feedback differed less in their attributions from control subjects, than subjects

who received ego-diminishing feedback.

In addition to testing the key hypotheses of this study, a measure of "Mood" was taken in order to test the idea that success-failure manipulations, evaluation potential, and ego-related feedback should affect subjects' mood, and that this effect in mood might in turn be responsible for the observed differential attributions.

Although study I was unable to demonstrate a relationship between mood and evaluation apprehension, and although the second study did not directly test the mediating role of mood, the findings of the thesis were compatible with the motivational model of causal attributions. More specifically, in the first study, subjects in the success condition showed a more positive mood than those in the failure condition. This finding was replicated in the second study which, in addition, showed that subjects who received ego-enhancing feedback exhibited a more positive mood than those who received ego-diminishing feedback.

Finally, the expectations that causal attributions are motivationally based received indirect support in both studies from the findings that subjects' expectancies for future successes appeared themselves to be affected by success-failure, evaluation apprehension, and ego-enhancing and ego-diminishing feedback manipulations.

In conclusion, this study offers further support for the motivational model of causal attributions. It is upto further research to demonstrate more clearly the mediating role of mood, as well as to delineate further the critical processes and conditions that regulate when the experience of success and increased esteem enhance self-gratification, and when they do not.

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APPENDIX 1

Instructions for "Success" Group

APPENDIX 1

Instructions for "Success" Group

I am running a contest to find out the verbal problem-solving ability of students. To do this, I will be giving you a set of ten (10) scrambled words, or anagrams as they are called. Your success in solving these anagrams is highly related to your problem-solving ability.

So, what I would like you to do is to try to solve the ten (10) anagrams, and after you have done that, I will be asking you to rate the extent to which four factors were responsible for your success or failure.

You have 1½ minutes to solve each anagram. When I tell you, please move on to the next one.

All of you will get one dollar each for participating in this contest. Besides, a cash prize of \$3.00 and \$2.00 will be given to two people who solve the maximum number of anagrams in the shortest time. So, please take this contest seriously and do your best.

Most students of your grade level have been able to solve 3 or 4 anagrams out of ten (10) in 15 minutes.

Any questions?

APPENDIX 2

Instructions for
"Success with Future Evaluation" Group

6

APPENDIX 2

Instructions for "Success with Future Evaluation" Group

I am running a contest to find out the verbal problem-solving ability of students. To do this, I will be giving you a set of ten (10) scrambled words, or anagrams as they are called. Your success in solving these anagrams is highly related to your problem-solving ability.

So, what I would like you to do is to try to solve the ten (10) anagrams, and after you have done that, I will be asking you to rate the extent to which four factors were responsible for your success or failure.

After you have completed the anagrams and the ratings, I will be collecting them from you to evaluate:

1. how well you performed, in comparison to other high school students your age; and
2. how logical and consistent you were in your thinking about the factors that were responsible for your success or failure.

In other words, if you feel that you did extremely well, how logical was your reasoning about that, or if you did poorly, how logical was your reasoning about that.

Remember, we will be comparing your reasoning to other Ontario high school students.

In addition, I would like you to be ready to do another set of anagrams, as I will be coming back this fall to see how well you perform the next time, and I will compare how similar your next performance is to your present one. The number of correct anagrams and the way you reason about what caused your success or failure in your present performance will be compared with your next performance.

You have $1\frac{1}{2}$ minutes to solve each anagram. When I tell you, please move on to the next one.

All of you will get one dollar each for participating in this contest. Besides, a cash prize of \$3.00 and \$2.00 will be given to two people who solve the maximum number of anagrams in the shortest time. So, please take this contest seriously, and do your best.

Most students of your grade level have been able to solve 3 or 4 anagrams out of 10, in 15 minutes.

Any questions?

APPENDIX 3

Instructions for "Failure" Group

APPENDIX 3

Instructions for "Failure" Group

I am running a contest to find out the verbal problem-solving ability of students. To do this, I will be giving you a set of ten (10) scrambled words, or anagrams as they are called. Your success in solving these anagrams is highly related to your problem-solving ability.

So, what I would like you to do is to try to solve the ten (10) anagrams, and after you have done that, I will be asking you to rate the extent to which four factors were responsible for your success or failure.

You have $1\frac{1}{2}$ minutes to solve each anagram. When I tell you, please move on to the next one.

All of you will get one dollar each for participating in this contest. Besides, a cash prize of \$3.00 and \$2.00 will be given to two people who solve the maximum number of anagrams in the shortest time. So, please take this contest seriously and do your best.

Most students of your grade level have been able to solve 7 or 8 anagrams out of 10, in 15 minutes.

Any questions?

APPENDIX 4

Instructions for
"Failure with Future Evaluation" Group

APPENDIX 4

Instructions for "Failure with Future Evaluation" Group

I am running a contest to find out the verbal problem-solving ability of students. To do this, I will be giving you a set of ten (10) scrambled words, or anagrams as they are called. Your success in solving these anagrams is highly related to your problem-solving ability.

So, what I would like you to do is to try to solve the ten (10) anagrams, and after you have done that, I will be asking you to rate the extent to which four factors were responsible for your success or failure.

After you have completed the anagrams and the ratings, I will be collecting them from you to evaluate:

1. how well you performed, in comparison to other high school students your age; and
2. how logical and consistent you were in your thinking about the factors that were responsible for your success or failure.

In other words, if you feel that you did extremely well, how logical was your reasoning about that, or if you did poorly, how logical was your reasoning about that. Remember, we will be comparing your reasoning to other Ontario high school students.

In addition, I would like you to be ready to do another set of anagrams, as I will be coming back this

fall to see how well you perform the next time, and I will compare how similar your next performance is to your present one. The number of correct anagrams and the way you reason about what caused your success or failure in your present performance will be compared with your next performance.

You have $1\frac{1}{2}$ minutes to solve each anagram. When I tell you, please move on to the next one.

All of you will get one dollar each for participating in this contest. Besides, a cash prize of \$3.00 and \$2.00 will be given to two people who solve the maximum number of anagrams in the shortest time. So, please take this contest seriously, and do your best.

Most students of your grade level have been able to solve 7 or 8 anagrams out of 10, in 15 minutes.

Any questions?

APPENDIX 5

Anagrams for "Success"
and "Success with Future Evaluation" Groups

APPENDIX 5

Anagrams for "Success"
and "Success with Future Evaluation" Groups

Please re-arrange the following ten (10) scrambled words (anagrams) to make real English words:

(You have 1½ minutes to solve each anagram)

1. RFATHE
2. MIDDEL
3. SUMERM
4. TMOMEN
5. NARCEN
6. AFILYM
7. INNERD
8. SECNOD
9. BUNMER
10. OTHERM

APPENDIX 6

Anagrams for "Failure"
and "Failure with Future Evaluation" Groups

APPENDIX 6

Anagrams for "Failure"
and "Failure with Future Evaluation" Groups

Please re-arrange the following ten (10) scrambled words (anagrams) to make correct English words:

(You have 1½ minutes to solve each anagram)

1. MNEGAA
2. NEREIM
3. FELSNI
4. SECNOD
5. OPUSGN
6. UESSNL
7. TMOMEN
8. EMAGLE
9. ORPMBE
10. OMERND

APPENDIX 7

Attribution of Responsibility Rating Scale for
"Success" and "Success with Future Evaluation" Groups

APPENDIX 7

Please rate the extent to which you feel:

(Circle the number)

a) Your ability caused your success

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

b) Good luck caused your success

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

c) Easiness of these scrambled letters caused your success

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

d) Effort caused your success

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

APPENDIX 8

Attribution of Responsibility Rating Scale for
"Failure" and "Failure with Future Evaluation" Groups

APPENDIX 8

Attribution of Responsibility Rating Scale for
 "Failure" and "Failure with Future Evaluation" Group

Please rate the extent to which you feel:

(Circle the number)

a) Lack of ability caused your failure

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

b) Bad luck caused your failure

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

c) Difficulty of the scrambled letters caused your failure

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

d) Lack of effort caused your failure

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

APPENDIX 9

Semantic Differential Scale to Measure "Mood"

APPENDIX 9

Please indicate your present mood by completing the rating on the following page.

Here is how you are to use these scales:

If you feel that the concept you are rating is very closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

Happy X : _____ : _____ : _____ : _____ : _____ : _____ Unhappy

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

Strong _____ : X : _____ : _____ : _____ : _____ : _____ Weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

Active _____ : _____ : X : _____ : _____ : _____ : _____ Passive

or

Active _____ : _____ : _____ : _____ : X : _____ : _____ Passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you are judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

Safe _____ : _____ : _____ : X : _____ : _____ : _____ Dangerous

IMPORTANT: (1) Place your check-marks in the middle of space, not on the boundaries:

_____ : _____ : This X : _____ : Not this X : _____

- (2) Be sure you check every scale for every concept - do not omit any.
- (3) Never put more than one check-mark on a single scale

Sometimes you may feel as though you have had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in this test. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items that we want. On the other hand, please do not be careless because we want your true impressions.

Right now I feel:

Relaxed 5 : _____ : _____ : _____ : _____ : _____ : _____ : _____ Tense

Pleasant _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Unpleasant

Wise _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Foolish

Good _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Bad

Optimistic _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Pessimistic

Happy _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Unhappy

Nice _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Awful

Sociable _____ : _____ : _____ : _____ : _____ : _____ : _____ : _____ Unsociable

APPENDIX 10

Scale to Measure "Expectations for Future Success"

APPENDIX 10

If ten similar scrambled words (anagrams) were given to you in the future, please indicate how many you feel you would be able to solve.

(Please circle the number you would get right)

0 1 2 3 4 5 6 7 8 9 10

APPENDIX 11

Social Perceptiveness Test

APPENDIX 11

Social Perceptiveness Test

I am running a project to assess the Social Perceptiveness of students in the Smiths Falls area. This is a very important social skill for people to develop, as we have evidence that it is very often related to getting and keeping the kind of job you want. In addition, it is also related to meeting and getting along with other people and it also relates to having other people do the kinds of things that you would like them to do. Thus, you can all see that this Social Perceptiveness task is a really important type of skill. It measures the ability of people to "see into" social situations, their general understanding of human nature, and the extent to which people with only a limited amount of information can predict another person's behavior or feelings in a wide range of situations. It also indicates your ability to interpret an ambiguous social situation and to draw on your experiences, and your imagination and creativity.

So you can see that Social Perceptiveness is an important skill for people to have, and to try and develop.

To do this test, I will be giving you two pictures of an event, and you will be asked to write a couple of

sentences each on:-

- a) what the situation is in the picture?
- b) what led up to it?
- c) what are the feelings and thoughts of the characters?
- d) what the outcome will be?

Please note that high scores on this test are often positively correlated with intelligence, personal happiness and job satisfaction.

You have 20 minutes to complete this test.

Any questions?

APPENDICES 12 & 13

Pictures of Two Social Events





APPENDIX 14

Anagram Test

Instructions for "Success" Group

APPENDIX 14

Anagram Test

Instructions for "Success" Group

In addition to the work I told you of this morning, I am also connected with research on verbal anagrams or scrambled words. I would like you to give me your assistance by doing these verbal anagrams here today. What I would like you to do with these scrambled words is to try and make up correct English words from the scrambled letters. Your success in completing these scrambled letters is often highly related to your verbal problem-solving ability.

We are doing some testing in a number of regions so as to get standards for parts of Ontario. So, please take this test seriously and try to do your best. After you have done that, I will have some additional questions for you to answer.

All of you will receive one dollar each for participating in this study.

You have 1½ minutes to complete each anagram. When I tell you, please move on to the next one.

Most students of your grade level have been able to complete 3 or 4 anagrams out of 10, in 15 minutes.

Any questions?

APPENDIX 15

Anagram Test

Instructions for "Failure" Group

APPENDIX 15

Anagram Test

Instructions for "Failure" Group

In addition to the work I told you of this morning, I am also connected with research on verbal anagrams or scrambled words. I would like you to give me your assistance by doing these verbal anagrams here today. What I would like you to do with these scrambled words is to try and make up correct English words from the scrambled letters. Your success in completing these scrambled letters is often highly related to your verbal problem-solving ability.

We are doing some testing in a number of regions so as to get standards for parts of Ontario. So, please take this test seriously and try to do your best. After you have done that, I will have some additional questions for you to answer.

All of you will receive one dollar each for participating in this study.

You have 1½ minutes to complete each anagram. When I tell you, please move on to the next one.

Most students of your grade level have been able to complete 7 or 8 anagrams out of 10, in 15 minutes.

Any questions?

APPENDIX 16

Ego-enhancing Feedback

APPENDIX 16

Ego-enhancing Feedback

I have just completed scoring your Social Perceptiveness Test you did this morning, and your results are extremely impressive!

You have 90% success rate, and so you can really feel proud of this outstanding performance. As we mentioned to you this morning, this is a very important social skill for people to develop and have because, as we said, this is very often related to getting and keeping the kind of job that you want, and to meeting and getting along with other people. So you certainly seem to have the ability to interact with other people and you should take confidence and pride in your very good success from this morning. Your results on this are probably the best we have ever seen! So, congratulations to you.

Now, let us go back to the present task. Would you turn the page and answer the question that you see there.

APPENDIX 17

Ego-diminishing Feedback

APPENDIX 17

Ego-diminishing Feedback

I have the result from your Social Perceptiveness Test from this morning, and unfortunately, I don't have very good news for you. It would seem that your responses are really very much below the average. You have done much poorer than most of the people who have taken this task. Of course, this is not going to influence everything that you do in your life, to be sure. But it is a shame that the results did come out this way because, Social Perceptiveness is an important task that is often related to lots of important events in people's lives. May-be, results would be better some other time.

Now, let us go back to the present task that you were working on right now. Would you turn over the page and answer the questions that you see there.

APPENDIX 18

Manipulation Check on "High Self-esteem Subjects"

APPENDIX 18

Manipulation Check on "High Self-esteem Subjects"

How strongly do you feel like taking credit for your success?

(Please circle the number you wish to indicate)

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

APPENDIX 19

Manipulation Check on "Low Self-esteem Subjects"

APPENDIX 19

Manipulation Check on "Low Self-esteem Subjects"

How strongly do you feel like avoiding responsibility for your failure?

(Please circle the number you wish to indicate)

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely High extent

APPENDIX 20

Scale to Measure "Tendencies for Self-enhancement"

APPENDIX 20

Scale to Measure "Tendencies for Self-enhancement"

To what extent would you be inclined to use your good results on the Anagram Task as a basis to boost your self-esteem (to boost your feelings about yourself)?

(Please circle the number you wish to indicate)

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

APPENDIX 21

Scale to Measure "Tendencies for Self-protection"

APPENDIX 21

Scale to Measure "Tendencies for Self-protection"

To what extent would you be inclined to ignore or forget about your Anagram results, as they tend to lower your self-esteem a bit (make you feel down about yourself)?

(Please circle the number you wish to indicate)

1	2	3	4	5	6	7	8	9
No extent		Slight extent		Moderate extent		Great extent		Extremely high extent

APPENDIX 22

Prediction of Internal and External
Attributions Using Multiple Regression Equation

APPENDIX 22

Prediction of Internal Attribution Using a Multiple Regression Equation

Predictor Variables	Summary Table			Beta
	Multiple R	R Square	RSQ Change	
Success-Failure	0.91771	0.84219	0.84219	-0.95493
Mood	0.91938	0.84512	0.00293	-0.2863893D-01
Evaluation Apprehension (Constant)	0.91934	0.84519	0.00007	0.3726374D-0-
				20.52027

Prediction of External Attribution Using a Multiple Regression Equation

Predictor Variables	Summary Table			Beta
	Multiple R	R Square	RSQ Change	
Success-Failure	0.80568	0.64912	0.64912	0.84151
Mood	0.80751	0.65208	0.00164	0.05941
Evaluation Apprehension (Constant)	0.80650	0.65044	0.00131	0.06082
				0.8026222

As may be seen from the above, both Success-Failure conditions and Mood are related to the Internality or Externality of attributions. However, in the above analyses, mood scores did not add significantly to the predictions based on the Success-Failure variable.