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# Internal versus external attribution of task performance as a function of locus of control, initial confidence and success-failure outcome.

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INTERNAL VERSUS EXTERNAL ATTRIBUTION OF TASK PERFORMANCE  
AS A FUNCTION OF LOCUS OF CONTROL, INITIAL CONFIDENCE,  
AND SUCCESS-FAILURE OUTCOME

By

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## ABSTRACT

Male internal and external control subjects worked at a 10-item Anagram Test containing anagrams of approximately 50% difficulty. Before beginning the test, they rated how confident they were that they could pass the test (that is, solve five anagrams or more). After completing the test, all subjects recorded their level of performance (number of anagrams solved) and then proceeded to record the degree to which they felt their performance was due to ability (internal attribution) or to luck (external attribution). Internals were significantly more internal in their attribution for success than were externals. Under failure the opposite trend was found. Internals tended to attribute responsibility for the outcome externally to a greater degree than externals. Subjects high in initial confidence tended to attribute responsibility for success internally to a greater degree than those low in initial confidence. Under failure, however, high initial confidence subjects were significantly more external in their attribution than were low initial confidence subjects. Contrary to prediction, subjects who succeeded were more internal in attributing responsibility for the outcome than were subjects who failed. Results supported predictions based on Heider's balance theory and recent causal attribution theory and research. Implications for future research were discussed.

## PREFACE

I would like to acknowledge my gratitude to these men for the cooperation and knowledge they have imparted to me as members of my committee for this particular project and, in the past, as teachers. I am indebted to my mentor, Dr. Henry Minton, for his incisive guidance from the inception through to the completion of this project. The contributions of Dr. Frank Schneider, Dr. Larry Leduc, and, especially, Meyer Starr, are also gratefully acknowledged. I extend my warmest thanks to Miss Irene Schultz, Miss Marianne Adam, and Miss Jean Ilnicki, for the countless occasions they have made a task at hand less burdensome. And, for the fact that I have come this far, I thank my friend, Robert C. Fehr.

## TABLE OF CONTENTS

	Page
ABSTRACT .....	iii
PREFACE .....	iv
LIST OF TABLES .....	vi
Chapter	
I INTRODUCTION .....	1
II METHOD .....	20
III RESULTS .....	26
IV DISCUSSION .....	40
REFERENCES .....	47
APPENDIX A The Internal-External Control Scale .....	51
APPENDIX B The Anagrams Test Booklet .....	55
APPENDIX C The Post-Performance Questionnaire .....	59
APPENDIX D Raw Data.....	62
APPENDIX E Letter to Participants .....	66
VITA AUCTORIS .....	67

- 4

LIST OF TABLES

Table	Page
1 Classification Scheme for the Perceived Determinants of .. Achievement Behavior .....	6
2 Mean Attribution Scores for Internals and Externals .....	26
3 Mean Attribution Scores for High and Low Initial..... Confidence .....	26
4 Summary of Analysis of Variance of the Attribution..... Scores .....	27
5 Mean Attribution Scores for the Various Groups .....	30
6 Mean Attribution Scores for the Various Groups Under .....	32
Success .....	
7 Summary of Analysis of Variance of the Attribution Scores. Under Success .....	33
8 Mean Attribution Scores for the Various Groups Under .....	33
Failure .....	
9 Summary of Analysis of Variance of the Attribution Scores. Under Failure .....	34
10 Intercorrelation of Variables for Success and Failure .... Conditions .....	35
11 Intercorrelation of Variables for All Subjects .....	38



## Chapter I

### INTRODUCTION

Recent developments in the areas of causal attribution and internal-external control of reinforcement beg that more intricate investigations into the relationship between internal-external control (Rotter, 1966) and causal attribution be conducted.

The internal-external (I-E) control of reinforcement construct is derived from Rotter's social learning theory (Rotter, 1954) and is conceptualized as a generalized expectancy related to the person's belief concerning the locus of causality for events. This expectancy is based on past learning and is relatively stable, operating across a wide range of situations. At one extreme are individuals who perceive the reinforcement they receive as a function of external forces (fate, chance, luck, powerful others). Such an interpretation of events is labelled a belief in external control. At the other extreme are individuals who view the reinforcement they receive as a function of their own actions or characteristics. Individuals at this extreme who perceive events as contingent on their own behavior are said to have a belief in internal control. Differences in I-E control are measured by the Internal-External Control Scale developed by Rotter (1966).

#### I-E and CAUSAL ATTRIBUTION:

The utility of the I-E construct in predicting the direction of blame assignment has been tested directly several times (Dies, 1968; Fitch, 1970; Lackey, 1968). The notion that internal control subjects

(internals) would tend to attribute blame for either success or failure at a task to internal sources and that external control subjects (externals) would tend to blame success or failure to external sources (fate, chance, or luck), however, has not been empirically validated.

Dies (1968) investigated attribution of blame as it related to I-E control of reinforcement and the need for social approval. Eighty female nursing students, working in pairs, attempted to achieve a mutually desirable goal in a task situation. Each subject played a different role in the team effort but feedback on their performance was assigned to them as a team. Specifically, the effects of failure feedback on the extent to which subjects were willing to accept responsibility for the failure was investigated. The hypothesis that externals would attribute blame for failure to external factors (the partner, experimental factors, etc.) and that internals would more often attribute blame for failure to internal factors was not confirmed.

In a similar study Lackey (1968) attempted to assess the relationship between perceived locus of control and blame assignment but again the results indicated that, essentially, there was no relationship. Male subjects were instructed to consider an actor, to whom responsibility for a negative outcome was to be attributed by the subjects, as either: (1) similar to themselves; or, (2) dissimilar to themselves. While actors perceived as similar to the internal or external attributor were held as less responsible than the perceived dissimilar actors, no significant differences in attribution of responsibility were due to the I-E control variable.

A third study by Fitch (1970) investigated the effects of four

variables on the causal attribution process: self-esteem; I-E control; success-failure outcome; and, degree of choice in performing the task. Subjects worked on an ambiguous judgmental task and were given pre-determined success or failure feedback on their performance. The major hypothesis that internals would attribute success or failure outcomes to internal causal sources and that externals would attribute success and failure outcomes to external causal sources was not supported.

Several factors can be postulated to have thwarted the confirmation of the I-E blame assignment hypothesis. With regard to these specific studies, two of the authors admitted methodological shortcomings may have adversely affected the results. Dies (1968) suggested that the highly structured nature of the experimental situation may have reduced individual differences associated with internal and external individuals. Fitch (1970) indicated that his subjects may have disbelieved the false performance feedback given them and that the subject's actual performance may have influenced causal attributions.

There is one investigation which recently reported differences between internals and externals with respect to their attribution of responsibility for success-failure outcomes. Davis and Davis (1972) found that externals tended to blame bad luck for failure to a greater degree than internals. The authors interpret this finding as supporting the notion that an external orientation represents a defensive strategy designed to protect the individual from such negative events as failure at a task. Under success, where no threat to the individual is apparent, no difference in the assignment of blame by internals and externals would be expected. This was confirmed by the study's data. Both internals and externals attributed successful

outcomes to their personal ability (internally), but externals were more external in their attribution for failure than were the internals. Caution must be used in interpreting these results, for the adequacy of the success-failure manipulation used by the authors is questionable. Davis and Davis based their experimental paradigm on that of Feather (1969). However, unlike Feather's procedure, subjects in this study were not told that a certain performance outcome represented success or failure at the task (that is, the solution of five or more, or less than five anagrams). Davis and Davis' subjects were told that a certain performance outcome represented either "above average ability" (solution of nine to fifteen anagrams) or "poor ability" (solution of less than five anagrams). While these two conditions could represent success and failure at the task very adequately, the emphasized connection between performance outcome and ability (poor or above average) may have influenced the subject's attribution of responsibility for the particular outcome. In fact, the mean attribution scores for internals and externals under both success and failure conditions were in the direction of internality (ability). Thus, it is likely that attributions were confounded by the author's method of inducing success and failure outcomes.

The rationale for re-examining the relationship between I-E and causal attribution is not derived solely from the foregoing discussion of the inadequacies of the I-E control research. Integral parts of the rationale yet to be considered include the following: the development of a cognitive causal attribution model and its application to empirical research; the theoretical relevance of Heider's balance theory; and, the implications of certain research

not directly related to I-E and causal attribution. These empirical and theoretical works will be discussed and their relevance to the present study explained.

#### CAUSAL ATTRIBUTION:

Recent advances in the understanding of causal attribution processes are summarized in a paper by Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971). The authors demonstrated that the process of assigning blame in success and failure situations is more complex than was assumed by locus of control and other researchers. In the paper, Weiner et al. present an attribution model of achievement motivation designed to delineate the cognitive operations relevant to the causal attribution process. The general format is essentially a cognitive one:  $S \rightarrow \text{cognition} \rightarrow R$ . The model is very much related to Heider's initial theorizing about the attribution of causality (Heider, 1958) and was guided by the locus of control research of Crandall, Katkovsky, and Crandall (1965) and Rotter (1966).

Briefly described the model posits that individuals use four elements of ascription in order to interpret (postdict) and to predict a given outcome of an achievement related event. These four causal components or elements are: ability (A); effort (E); task difficulty (T); and, luck (L). Hence,  $\text{outcome} = f(A, E, T, L)$ . In other words, in interpreting a success or failure outcome in an achievement related task, an individual would assess his own or a performer's level of ability, the amount of effort exerted, the difficulty of the task, and the amount and direction of experienced luck. Similarly, in assessing future expectations of success and failure, the individual will utilize an assumed level of ability in

relation to the perceived difficulty of the task and an estimated intended effort in conjunction with anticipated luck.

The four components of the model are seen to comprise two basic dimensions: locus of control (internal-external) and degree of stability (fixed versus variable). Ability and effort are the internal components on the locus of control dimension since they describe qualities of the individual concerned. Task difficulty and luck are the external components on the locus of control dimension since they are considered environmental factors, external to the individual involved.

With regard to the stability dimension, ability and task difficulty are relegated as relatively stable components with somewhat permanent characteristics. Effort and luck on the other hand are viewed as relatively unstable or variable components. This classification is summarized in the following table.

Table I  
Classification Scheme for the Perceived  
Determinants of Achievement Behavior.

Stability	Locus of Control	
	Internal	External
Stable	ability	task difficulty
Unstable	effort	luck

Source: After Weiner et al. (1971)

Thus, these causal components, schematized into the dimensions of locus of control and stability, comprise the framework for the attribution model. In demonstrating the efficacy of the attribution model, the authors cited studies which have applied the model to Atkinson's

achievement motivation theory in order to predict the direction of causal attribution in achievement oriented situations. A review of these studies necessitates a brief introduction to the basic tenets of Atkinson's theory.

Atkinson (1957) contends that achievement oriented behavior is a resultant of an approach-avoidance conflict. The achievement oriented tendency ( $T_a$ ) is a function of an approach tendency,  $M_s$ , (conceived as a need for achievement or striving for success) and an avoidance tendency, ( $M_{af}$ ), (a relatively stable personal disposition to avoid failure). Thus, in general, when  $M_s > M_{af}$ , greater value is given to the approach tendency than to the avoidance tendency. Similarly, when  $M_{af} > M_s$ , the resultant achievement motivation is negative; that is, greater value is given to the avoidance tendency than to the approach tendency.

Weiner and Kukla (1970) reviewed data related to Atkinson's theory and reinterpreted it in the context of the attribution model outlined above. Their analysis led them to hypothesize that individuals high in resultant achievement motivation ( $M_s > M_{af}$ ) would attribute responsibility for success in achievement related situations internally significantly more than individuals low in resultant achievement motivation. Achievement motivation was assessed for male and female grade school children and high school males with the standard Thematic Apperception Test procedure and the Test Anxiety Questionnaire (Mandler & Sarason, 1952). The former measure assessed need for achievement ( $M_s$ ) and the latter measure assessed anxiety about failure ( $M_{af}$ ). Accordingly, high resultant achievement motivation subjects ( $M_s > M_{af}$ ) were high in need for achievement and low in test

anxiety, whereas subjects low in resultant achievement motivation ( $M_{af} > M_S$ ) were low in need for achievement and high in test anxiety. Perceived locus of control for positive (success) and negative (failure) outcomes was assessed by the Intellectual Achievement Responsibility (IAR) scale (Crandall, Kotkovsky, & Crandall, 1965). The IAR was chosen over the I-E Scale to measure locus of control because its items all pertain to achievement oriented situations and also portray circumstances involving success or failure outcomes. Not all the items on the I-E Scale had these two characteristics which facilitated the study's completion.

The correlated results showed that the high achievement motivation group did attribute responsibility for success to internal sources significantly more than the low achievement motivation group. The difference was even more pronounced for the high school male subjects ( $p < .02$ ,  $N=258$ ). However, it was noted that the high achievement motivation group did not display a general tendency toward internal attribution. In fact, the high achievement motivation group was more external in their attribution for failure than the low achievement motivation group. Low achievement motivation subjects on the other hand, tended to attribute blame for failure internally.

Further support for the finding that high achievement motivation individuals tend to attribute success to internal sources (ability in particular) more than low achievement motivation individuals is offered by Weiner and Popetin (1970). High resultant achievement motivation was positively correlated with internal ascription for success ( $r = .36$ ,  $p < .01$ ,  $N = 107$ , which was mostly accounted for by the ability rather than the effort component) and was negatively



correlated with internal attribution for failure ( $r = -.26, p < .01, N = 107$ ). Experimental studies supportive of these findings were conducted by Kukla (1970) and Meyer (1970). These latter studies also indicated that low resultant achievement motivation individuals tended to attribute success to external sources (luck or task difficulty) and tended to attribute failure primarily to lack of ability (an internal source).

In summary, the application of the cognitive attribution model proposed by Weiner et al. to Atkinson's achievement motivation theory has led to the following empirically supported facts: (1) that individuals high in resultant achievement motivation attribute responsibility for success internally (to high ability in particular) but tend to attribute responsibility for failure externally; and, (2) that individuals low in resultant achievement motivation tend to attribute responsibility for success externally (to task difficulty or luck) but tend to attribute responsibility for failure internally (to lack of ability).

It must be noted that the above hypotheses based on the relationship between the need for achievement, test anxiety, and (initially) the IAR may serve to enlighten the relationship between I-E and causal attribution. Because of its relationship with the need for achievement and test anxiety, the I-E control construct should be able to be used to formulate hypotheses similar to those formulated by Weiner et al. from the attribution model of achievement motivation.

While correlations between internal control and the need for achievement have been generally low, significant correlations have been reported by Minton (1967). Hersch and Scheibe (1967)

also reported that internal subjects tend to describe themselves as more striving and achieving than external subjects. As for the relationship between internal control and test anxiety, internal control has been negatively and significantly correlated with debilitating test anxiety (Butterfield, 1964; Feather, 1967a; Watson, 1967). Debilitating test anxiety corresponds to and has been highly correlated with test anxiety measured by other test anxiety scales, including the Test Anxiety Questionnaire. It is conceptualized as assessing an individual's fear of failure. It is evident that internal control bears a relationship to high resultant achievement motivation which is operationally defined as a combination of high need for achievement and low test anxiety.

External control, at the opposite end of the locus of control continuum (positively correlated with debilitating test anxiety, negatively related to need for achievement), can thereby be construed as more related to low resultant achievement motivation which is operationally defined as low need for achievement and high test anxiety. Moreover, since Atkinson (1957) posited a negative relationship between the motive to avoid failure (high test anxiety) and the motive to achieve success, it is theoretically consistent that external control be positively related to high and/or debilitating anxiety and negatively related to the need to achieve.

The tendency for internal control to be positively related to the need for achievement and the significant negative relationship between internal control and test anxiety suggest that predictions of causal attribution in achievement related situations using I-E

control as a predictor would parallel those of Weiner et al.

Up to this point, the rationale for these predictions has been based primarily on the examination of the causal attribution process and the subsequent delineation of the parallel relationship of I-E and resultant achievement motivation to the need for achievement and test anxiety. Further support for these predictions, however, can be based on Heider's balance theory (Heider, 1958).

#### HEIDER'S BALANCE THEORY:

Heider's theory outlines the conditions which affect the attribution of causality to internal (personal) or external (environmental) forces. A person's judgment of causal attribution in an action outcome is very much dependent on his perception of his personal ability (his perception of "can" or personal power). If a person's assessment of his personal ability (the dominant constituent of his "can" assessment) is high, then success outcomes will tend to be attributed to the self since success is consistent with or in balance with the person's high, positive assessment of his personal ability. In the case of a failure outcome, however, (an unusual outcome as far as this individual's past experience is concerned) the attribution of responsibility for the failure will be external. This occurs because the failure outcome is inconsistent with the individual's positive assessment of his ability and balance or consistency is maintained by the individual's attributing the failure to external forces.

Similarly, if a person's assessment of his personal ability is negative or low, then the balance model will dictate that success will tend to be attributed to external influences. That is, since

internal attribution of success would be inconsistent with the person's low assessment of his personal ability, balance or consistency is maintained by the individual's attributing the success to external sources. In the case of a failure outcome, however, internal attribution for failure is consistent with the individual's low assessment of personal ability and therefore will occur. Additionally, if the difficulty of the task at hand is perceived as stable, and the opportunity for its completion is perceived as favorable, then the external attribution will be assessed in terms of good or bad luck rather than task difficulty.

Heider continues to explain the importance of personality traits as factors that bear on a person's perception of what he "can" do. He states that feelings of one's power and abilities or lack of them on a particular task may be connected to a pervasive mood of competence on the one hand or to a despondent, despairing mood on the other.

"Sometimes the feeling of personal power may encompass a philosophical view of the course of world events as a whole in which at one extreme one feels that the world can always be changed in such a way that it fits one better; or at the other extreme, one may feel that one can do nothing, that one must remain at the mercy of imposed forces" (Heider, 1958, p. 94).

On the basis of the foregoing description it can be concluded that the I-E control construct, one which reflects a person's belief about his personal efficacy or lack of it and is often described in terms of feelings of power or powerlessness, is a salient personality variable vis-a-vis influencing the direction of causal attribution. It also follows that the direction of the attribution would be such that: (1) individuals with a positive sense of personal power or ability (internals) will tend to attribute responsibility for success internally and for failure externally; and, (2) individuals with a sense of powerlessness

or low ability (externals) will attribute responsibility for success externally and for failure internally.

These predictions derived from Heider's balance theory are parallel to and conceptually supportive of the predictions made for I-E control individuals based on the attribution model of Weiner et al. Thus, a firm theoretical underpinning for the hypotheses generated in this study has been provided.

#### OTHER EMPIRICAL SUPPORT FOR THE I-E, CAUSAL ATTRIBUTION PREDICTIONS:

In addition to the cognitive attribution model of Weiner et al. and the balance theory of Heider, there are two areas of research which are deemed relevant to the predictions made concerning I-E and causal attribution. The first consists of studies investigating I-E control and failure. The second area consists of studies focusing on self-confidence ratings and causal attribution.

#### I-E and Failure:

The novel prediction (novel as far as I-E research is concerned) that externals will tend to attribute responsibility for failure to internal factors and that internals will tend to attribute responsibility for failure to external factors, is indirectly supported by an earlier investigation by Efran (1963). Efran discovered that internals tended to forget or repress failures more than externals. This is consistent with later findings by Carroll (1969) which showed that internals tend to use repressive defenses and that externals tend to use sensitizing defenses.

This tendency of externals to be sensitive to (not repress) failure has been interpreted as a lack of a need to repress failure experiences

since they (externals) have adopted the defensive position that failures are not their responsibility (the position of an external control orientation). In light of the novel prediction presented in this study, however, an alternative and equally tenable explanation can be offered for the findings of Efran.

If it is true that externals attribute responsibility for failure to a lack of ability (an internal source), then the higher recall of failure experiences may not be due to the inherent defense (against failure) an external orientation provides as commonly suggested, but rather it may be due to a realistic assessment of a lack of ability. Externals may recall failure experiences more often than internals because such experiences and their assessment of their personal ability in these achievement oriented situations is consistent. Hence, there is no need to repress such failure feedback. This postulated low confidence in ability would also account for the fact that externals tend to attribute responsibility for success to external sources. To attribute success to internal sources would be inconsistent with the external's low assessment of his personal ability.

In the case of internal individuals, whose confidence in personal ability would be assumed to be high, a failure experience would constitute a threat to their assessment of personal ability. Accordingly, repression or the tendency to forget failure experiences by attributing responsibility for them to external sources could comprise a defense against the threat to their high assessment of personal ability. While this speculation is not central to the development of the hypotheses of this study, it does strengthen the rationale for refining the predictions concerning causal attribution

findings of the same author (Feather, 1967b), it is anticipated that I-E control will be a more salient predictor of causal attribution than the general self-evaluation measure used by Feather.

In the 1969 study, Feather noted that with respect to the inadequacy of the general measure of self-evaluation to predict the direction of causal attribution that, if the self-evaluation measure was a specific one, such as self-evaluation with respect to the task at hand (initial confidence ratings), then predictions concerning attribution of responsibility could be made. If the subject's initial confidence rating were used as the measure of self-evaluation, high initial confidence ratings indicating positive self-evaluation with respect to the task at hand, and low initial confidence ratings indicating negative self-evaluations with respect to the task at hand, then predictions (based on Heider's balance theory) of the direction of attribution of responsibility as a function of self-evaluation would have been confirmed.

It can be seen that while there is substantial evidence to hypothesize that the personality variable, I-E control, will influence the direction of causal attribution for success and failure outcomes, the demonstrated salience of initial confidence in a specific task situation must be taken into account.

Although the resolution of the general personality versus the task-attitudinal variables issue is not the central concern of this study, several things related to it are expected to occur. First, it is expected that the direction of causal attribution for success-failure outcomes as a function of initial confidence will replicate the results of Feather (1969). Second, on the basis of Heider's balance theory,

it is expected that high initial confidence ratings will be characteristic of and consistent with internal control individuals (who are characterized as having a positive, relatively high sense of personal efficacy) and that low initial confidence ratings will be characteristic of and consistent with external control individuals (who are characterized as having a low sense of ability and personal efficacy). If this is the case, then initial confidence (the task-attitudinal variable) can be expected to covary with the I-E control personality variable so that the direction of the predicted causal attributions is strengthened. That is, the greatest differences in attribution of responsibility for success and failure outcomes will occur between high-confident internals and low-confident externals.

#### THE MEASUREMENT OF CAUSAL ATTRIBUTION:

In assessing the direction of causal attribution for this study, the stable internal component, ability, will be used as the dependent measure for internal attribution and the variable external component, luck, will be used as the dependent measure for external attribution. The reason for excluding the internal variable component, effort, and the external stable component, task difficulty, is based on a recently published study by Feather and Simon (1971). In their study Feather and Simon replicated the study of Feather (1969), but added the effort and task difficulty components of causal attribution as dependent measures along with the ability and luck components previously used.

The results confirmed the findings reported by Feather (1969). That is, initial confidence (high versus low) interacted significantly with task outcome (success versus failure) in such a way that high initial confidence subjects attributed responsibility for success



internally (to ability) and responsibility for failure externally (to bad luck), and low initial confidence subjects attributed responsibility for success externally (to good luck) and for failure internally (to lack of ability). However, the interaction between initial confidence and outcome was not significant for the effort and task difficulty components. These results raise questions about other findings (Weiner et al., 1971; Frieze & Weiner, 1972) delineating the direction effort attribution takes in success-failure situations. Hence, meaningful predictions using this attribution component cannot presently be made. Also, due to the fact that an experimental artifact in the Feather and Simon investigation may have influenced the direction of task difficulty attribution (the difficulty of the task was in fact different for the different groups), there is still some uncertainty about the dynamics of the task difficulty component in a success-failure situation. Therefore, in this study, internal attribution will be assessed using the stable internal component, ability, and external attribution will be assessed using the variable external component, luck.

Thus, on the basis of the foregoing analysis of the I-E control and causal attribution theory and literature, the following hypotheses have been generated with respect to the independent variables of: (a) I-E control; (b) initial confidence; (c) success-failure outcome; and, the dependent variable of causal attribution.

(1) - There will be a significant interaction between I-E and success-failure outcome, so that: (a) under success, internals will tend to attribute responsibility for the outcome internally (to ability), and externals will tend to attribute responsibility for the outcome externally (to good luck); and, (b) under failure, internals will tend to attribute responsibility for the outcome externally (to bad luck),

and externals will tend to attribute responsibility for the outcome internally (to lack of ability).

(II) - There will be a significant interaction between initial confidence and success-failure outcome, so that: (a) under success, subjects whose initial confidence ratings are high will tend to attribute responsibility for the outcome internally (to ability), and subjects whose initial confidence ratings are low will tend to attribute responsibility for the outcome externally (to good luck); and, (b) under failure, subjects whose initial confidence ratings are high will tend to attribute responsibility for the outcome externally (to bad luck), and subjects whose initial confidence ratings are low will tend to attribute responsibility for the outcome internally (to lack of ability).

(III) - There will be a significant difference in initial confidence ratings between internals and externals so that the initial confidence ratings of internals are significantly higher than the initial confidence ratings of externals.

## Chapter II

### METHOD

#### SUBJECTS:

Due to the fact that sex differences have been found in previous studies concerning causal attribution (Weiner, et al., 1971), this study was restricted to male subjects only. From a pool of 250 male students enrolled in the introductory psychology class at the University of Windsor, 80 were selected for the experimental procedure.

#### MATERIALS:

The I-E Scale (Rotter, 1966) is a 29-item forced-choice questionnaire which includes six filler items. Alternative expectancy statements make up each item, one statement characteristic of a belief in internal locus of control, the other statement characteristic of a belief in external locus of control. The scale is scored in the direction of external control. (See Appendix A.) Due regard was given to recent evidence that questioned the unidimensionality of the I-E Scale. A factor analytic study by Mirels (1970) uncovered and identified two factors: (I) a personal control factor with items referring to the relative importance of ability and hard work versus luck and fate in achieving personally relevant outcomes; and, (II) a system modifiability factor with items referring to the extent to which an individual can influence the direction of the socio-political system. However, the lack of clear-cut replicability of the Personal Control factor reported by Minton (1972) dictated that the total original I-E Scale be used in this study.

The test booklet utilized in this study was identical to the one used by Feather (1969). (See Appendix B.) This permitted an attempt to replicate his results vis-a-vis initial confidence ratings (hypothesis II) and provided a realistic testing situation in which the subject's performance outcome (success or failure) was able to be determined. On the first page subjects marked a cross on a five inch linear scale indicating their degree of confidence that they could pass the test from "not very confident" at one extreme, to "very confident" at the other extreme. These ratings served as the measure of initial confidence (subjective probability of success) and were scored from one to ten in the direction of increasing confidence.

The performance task in the test booklet (See Appendix B) was a set of six-letter anagrams ranging in difficulty from forty to sixty percent (Feather & Saville, 1967). The anagrams were printed on separate pages in the test booklet with their order randomized for each subject. Thus, success-failure outcome was determined by the subject's actual performance on the task.

The post-performance questionnaire was also taken from Feather (1969). (See Appendix C.) The questionnaire was composed of two parts with different but analagous instructions. In Part I, subjects who passed the test (solved five or more anagrams) were instructed to record the direction of attribution they felt applied to them by marking a cross on a five inch linear scale with the statement "mainly due to ability" at one extreme, "mainly due to good luck" at the other extreme, and "50% luck, 50% ability" in the middle. Similarly, in Part II, subjects who failed the test were instructed to record the direction of attribution they felt applied to them by marking a cross

on the scale with the statement "mainly due to lack of ability" at one extreme, "mainly due to bad luck" at the other extreme, and "50% inability, 50% bad luck" in the middle. Ratings on these scales provided the measure for the dependent variable, causal attribution, and were scored from zero to ten in the direction of external attribution.

#### PROCEDURE:

The I-E Scale was administered to several sections of the introductory psychology class at the University of Windsor. Upper and lower thirds of the distribution of I-E scores determined the cut-off point for internal and external control groups. From the 250 males in the subject pool, 40 internals whose scores were in the lower third (scores of zero to ten), and 40 externals whose scores were in the upper third (scores of 14 to 22), were randomly selected.

Experimental subjects were contacted by telephone and asked to participate in a study on problem solving being conducted by a graduate student in the psychology department. Approximately ten subjects were scheduled for each testing session. The eight testing sessions required to gather the data were conducted within a two-week period.

Upon arriving, subjects were seated in the experimental room and were given the following instructions (experimental procedure after Feather; 1969):

"This study is concerned with establishing norms for college students on a particular type of cognitive task. You will be asked to complete several questions before and after the task itself which will be used to help with the interpretation of the results. I am now going to pass out the test booklets. Don't open your booklet until I tell you to do so" (Booklets were passed out.).

"Let me describe the task you are to do. On each page of your test booklet you will find a scrambled group of six letters. You are to re-arrange the group of

letters so that they make a meaningful English word. You will have thirty seconds to work at each anagram. There are ten anagrams altogether and all of them are in fact solvable. If you solve the anagram before the thirty seconds is up, wait until I instruct you to go on to the next page. Do not return to any of the pages whose anagram you did not solve in the time allowed. You will pass the test if you solve five anagrams or more. Are there any questions?"

"Turn to the first page. Based on the description of the task I have just given you, you are to rate how confident you are about succeeding at the task. Let's read the instructions together:

'On the scale below indicate how confident you are that you can pass this test. Mark a cross with your pen on the scale at a point which indicates how confident you feel about passing the test' You may mark the cross at any point on the scale which, as you can see, ranges from 'not very confident at all' to 'very confident'. When everyone has completed this we can begin the task."

"Turn to the page two and begin the task." (After each thirty second interval) "Go on to the next page!" (After the last anagram) "Stop work!"

"Now, without changing or altering any of your answers, add up the number of anagrams you have solved. Record the number of correct anagrams in the appropriate space on the back side of the test booklet. Your score, of course, will be kept confidential. If you have any doubt as to whether you have a correct solution or not, please consult me. While you are calculating your score, I will pass out the post-performance questionnaire." (Post-performance questionnaire was distributed.)

"On this post-performance questionnaire you will find two sets of instructions. If you passed the test (that is, if you got a score of five or more), turn to page one and follow the instructions under Part I. If you failed the test (that is, if you got a score below five), turn to page two and follow the instructions under Part II. Please read the instructions carefully. If there are any questions or problems, raise your hand." (After adequate time for completion was given.)

"If you are finished turn to the back cover of the post-performance questionnaire. There you will find ample space in which to write any comments you have concerning the Anagrams Test." (After adequate time was given, the questionnaires were collected.)

"Thank you for taking time to participate in this study. I would request that you not discuss the experiment

with any of your peers for at least two weeks, since it is important that subjects for this study have no prior knowledge of the task that is being used. If you would like to know the results of this study, please leave your name and address on the list at the door. As soon as the study is completed, a letter will be forwarded to you explaining the results."

Subjects were debriefed about the difficulty of the task they did. It was explained that 50% (or five correct answers) was the norm for Canadian college students.<sup>1</sup> Subjects were told that the task did not necessarily reflect an individual's intellectual capacity. It was explained that experience with similar types of tasks often helps in the successful completion of the Anagrams Test. This explanation was given to alleviate any concern a subject might have had over a particularly poor performance.

#### DATA ANALYSIS:

##### Primary Analyses:

In order to test the first two hypotheses concerning causal attribution, a 2 x 2 x 2 unweighted means analysis of variance (Winer, 1962) was conducted with I-E control, initial confidence, and success-failure outcome as the factors. A significant A X C interaction was expected for confirmation of the first hypothesis that, under success, internals would attribute responsibility for the outcome internally while externals would attribute responsibility for the outcome externally, and, under failure, that internals would be external in attributing responsibility while externals would be internal in their attribution of responsibility. A significant B X C interaction was expected for

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1. Norms for the Anagrams Test were in fact based on a sample of 95 male and female University of Windsor students ( $\bar{x} = 4.30$ ; S.D. = 2.03). These norms were similar to those established by Feather and Saville (1967) for a sample of Australian college students.

confirmation of the parallel hypothesis for high and low initial confidence subjects. To test the third hypothesis that internals would have higher initial confidence ratings than externals, a simple t-test was conducted.

#### Secondary Analyses:

A further  $2 \times 2 \times 2$  unweighted means analysis of variance was conducted with respect to each outcome separately (success and failure). That is, subjects who succeeded were divided into equal halves (high versus low success) as were subjects who failed the test (high failure versus low failure). Then, attribution scores were analyzed with I-E, initial confidence, and level of performance as the factors. These analyses provided a detailed analysis of the effect actual performance had on attribution ratings in each of the success and failure conditions.

In addition to these analyses, overall intercorrelations between the independent and dependent variables were conducted. Furthermore, intercorrelations between these variables for subjects who succeeded and for subjects who failed were calculated in order to supplement the analysis of variance results. Partial correlations between I-E and attribution (with initial confidence and level of performance held constant), between initial confidence and attribution (with I-E and level of performance held constant), and between level of performance and attribution (with I-E and initial confidence held constant) were also determined. The results of the secondary analyses were expected to confirm the findings of Feather (1969) and provide further information on the relationship between I-E and causal attribution.



## Chapter III

### RESULTS

#### ANALYSIS OF ATTRIBUTION SCORES:

Table 2 presents the mean attribution scores for internals and externals under success and failure. Table 3 presents the mean attribution scores for high and low initial confidence subjects under success and failure. (The higher the number, the greater the external attribution.)

Table 2  
Mean Attribution Scores for Internals and Externals

	Success	Failure
internals	2.75 (18)	5.38 (22)
Externals	5.19 (23)	4.85 (17)

Note. - Ns for each condition are shown in parentheses.

Table 3  
Mean Attribution Scores for High and Low Initial Confidence

	Success	Failure
High Initial Confidence	3.59 (23)	6.29 (14)
Low Initial Confidence	4.35 (18)	3.92 (25)

Note. - Ns for each condition are shown in parentheses.

Table 4 presents the overall analysis of variance results. The only unexpected result was the significant main effect due to performance outcome. Subjects who succeeded at the Anagrams Test were inclined to attribute responsibility for their success internally, to ability. Those who failed tended to attribute responsibility for the outcome externally to bad luck ( $F = 4.05$ ,  $df = 1/72$ ,  $p < .05$ ). As predicted, no main effects due to I-E or Initial Confidence were found, and, the only significant interactions occurred between I-E and performance outcome, and between Initial Confidence and performance outcome.

Table 4  
Summary of Analysis of Variance of the  
Attribution Scores

Source of Variation	SS	df	MS	F
I-E (A)	15.980	1	15.980	2.833
Initial Confidence (B)	11.461	1	11.461	2.032
Success-Failure (C) Outcome	22.862	1	22.862	4.050*
A X B	.440	1	.440	.078
A X C	39.029	1	39.029	6.919*
B X C	42.806	1	42.806	7.588**
A X B X C	.160	1	.160	.028
Error	1601.105	72	5.641	

\* $p < .05$

\*\* $p < .01$

#### ATTRIBUTION AND I-E: Primary Analysis

Table 4 shows a significant A X C interaction ( $p < .05$ ). Analysis of the simple effects within the interaction revealed that under success,

internals and externals were significantly differentiated in their attribution of responsibility ( $F = 9.29$ ,  $df = 1/72$ ,  $p < .01$ ). Internals tended to attribute responsibility for the outcome internally, to ability ( $\bar{x} = 2.75$ ), whereas externals tended to attribute responsibility externally, to good luck ( $\bar{x} = 5.19$ ). Under failure, however, no significant difference was found between internals and externals although their mean attribution scores were in the predicted direction. That is, internals scored in the direction of external attribution ( $\bar{x} = 5.38$ ); whereas, externals' scores tended toward internal attribution ( $\bar{x} = 4.85$ ). Among external subjects there was a lack of differentiation in the mean attribution scores of externals under success versus those of externals under failure. There was differentiation between the mean attribution scores of internals. Those who succeeded had significantly lower attribution scores than those who failed ( $F = 10.78$ ,  $df = 1/72$ ,  $p < .01$ ). (See Table 2.)

Thus, partial support for the first hypothesis was obtained. Under success, internals and externals did attribute responsibility for the outcome as was predicted. Under failure, the attribution scores of internals and externals were in the predicted direction, but were not significantly different. Confirmation of the hypothesis, although qualified, was in large part due to the significant difference found between the attribution scores of internals who succeeded and internals who failed. Externals' attribution scores were not significantly different under success and failure.

#### ATTRIBUTION AND INITIAL CONFIDENCE: Primary Analysis

Analysis of the simple effects for the significant B X C interaction ( $p < .01$ ) revealed that under failure, high and low initial

confidence subjects were significantly differentiated in their attribution of responsibility ( $F = 8.75$ ,  $df = 1/39$ ,  $p < .01$ ). High confidence subjects attributed responsibility for the outcome externally, to bad luck ( $\bar{x} = 6.29$ ), while low confidence subjects were internal in attributing responsibility, to lack of ability ( $\bar{x} = 3.92$ ). Under success, the reverse trend was found but it did not reach statistical significance. That is, high initial confidence subjects showed a greater tendency toward internal attribution for the outcome ( $\bar{x} = 3.59$ ) than low initial confidence subjects ( $\bar{x} = 4.35$ ). There was a lack of differentiation in the mean attribution scores of the low confident subjects under success versus those under failure. There was differentiation between the mean attribution scores of high initial confidence subjects. Those high initial confidence subjects who succeeded were significantly more internal in their attribution of responsibility than were high initial confidence subjects who failed ( $F = 11.38$ ,  $df = 1/72$ ,  $p < .01$ ). (See Table 3.)

Thus, partial support for the second hypothesis was obtained. Under failure, high and low initial confidence subjects did attribute responsibility for the outcome as was predicted. Under success, the attribution scores of the two groups were in the predicted direction, but were not significantly different. Support for the hypothesis resulted to a great extent from the significant difference found between the attribution scores of high confidence subjects who succeeded and those who failed. The attribution scores of low confidence subjects who succeeded were not significantly different from the scores of those who failed.

COMPARISON OF THE GROUPS FORMED BY I-E AND INITIAL CONFIDENCE:

In view of the parallel predictions under both success and failure for internal control and high initial confidence subjects, and for external control and low initial confidence subjects, the greatest differences in attribution of responsibility were expected to occur between high-confident internals and low-confident externals. Table 5 presents the mean attribution scores for the various groups formed by I-E and Initial Confidence.

Table 5  
Mean Attribution Scores For  
The Various Groups

	Success		Failure	
	High Initial Confidence	Low Initial Confidence	High Initial Confidence	Low Initial Confidence
Internals	2.50 (10)	3.00 (8)	6.60 (10)	4.17 (12)
Externals	4.69 (13)	5.69 (10)	6.00 (4)	3.69 (13)

Note. - Ns for each condition are shown in parentheses.

It can be seen that under both success and failure, the greatest differences in attribution occurred between the high-confident internals and the low-confident externals. The mean attribution scores of the mixed groups, low-confident internals and high-confident externals, fell in between in both the success and failure conditions. A statistical analysis revealed that under success, high-confident internals and low-confident externals were significantly differentiated in their attribution of responsibility ( $t = 3.01, p < .01$ ). High-confident internals attributed responsibility for success internally, to ability ( $\bar{x} = 2.50$ ), while low-confident externals were external in attributing responsibility

to good luck ( $\bar{x} = 5.7$ ). Under failure, the two groups were also significantly differentiated in their attribution of responsibility ( $t = 2.91$ ,  $p < .01$ ). High-confident internals attributed responsibility for failure externally, to bad luck ( $\bar{x} = 6.60$ ), while low-confident externals attributed responsibility for the outcome internally, to lack of ability ( $\bar{x} = 3.69$ ). No significant differences were found between low-confident internals and high-confident externals under success ( $t = 1.58$ ), or for the same groups under failure ( $t = 1.33$ ). These results are consistent with the predictions made for these two variables separately (I-E and Initial Confidence).

#### I-E and INITIAL CONFIDENCE: Primary Analysis

The t-test between the initial confidence ratings of internals ( $\bar{x} = 5.08$ ) versus those of externals ( $\bar{x} = 4.30$ ) was not statistically significant ( $t = 1.43$ ,  $p < .20$ ). However, consistent with the prediction was a low but statistically significant correlation between external control and initial confidence ratings ( $r = -.248$ ,  $N = 80$ ,  $p < .05$ ). Externals tended to have lower initial confidence ratings than internals. Thus, some correlational evidence was found to support the third hypothesis although the null hypothesis was not rejected.

#### SECONDARY ANALYSIS: For Subjects Who Succeeded

Table 6 presents the mean attribution scores for internals and externals, and for high and low initial confidence subjects under success. A median split determined the cut-off point for high versus low level of performance. For successful subjects, anagram performance scores of seven to ten were classified as high ( $N = 16$ ), and scores of

five or six were classified as low (N = 25).

Table 6  
Mean Attribution Scores for the  
Various Groups Under Success

	High Success	Low Success
Internals	2.05 (9)	3.45 (9)
Externals	3.29 (7)	6.02 (16)
High Initial Confidence	2.93 (9)	4.14 (14)
Low Initial Confidence	2.42 (7)	5.32 (11)

Note. - Ns for each condition are shown in parentheses.

Table 7 presents the analysis of variance results for subjects who succeeded. Analysis of variance revealed significant main effects due to I-E and to the level of performance. Internals were significantly more internal in attributing responsibility for success than were externals ( $F = 7.2$ ,  $df = 1/33$ ,  $p < .05$ ). Similarly, high success subjects, those who passed by a wide margin, were significantly more internal in attributing responsibility for their success than were low success subjects ( $F = 8.44$ ,  $df = 1/33$ ,  $p < .01$ ).

SECONDARY ANALYSIS: For Subjects Who Failed

Table 8 presents the mean attribution scores for internals and externals, and for high and low initial confidence subjects under failure. Again, a median split determined the cut-off point

Table 7  
Summary of Analysis of Variance of The  
Attribution Scores Under Success

Source of Variation	SS	df	MS	F
I-E (A)	33.379	1	33.379	7.196*
Initial Confidence (B)	1.029	1	1.029	.222
Level of Performance (C)	39.162	1	39.162	8.442**
A X B	.253	1	.253	.054
A X C	4.037	1	4.037	.870
B X C	6.540	1	6.540	1.410
A X B X C	14.222	1	14.222	3.066
Error	153.080	33	4.639	

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

for high versus low performance. For those subjects who failed, anagram performance scores of four were classified as high (N = 18), and scores of zero to three were classified as low (N = 21).

Table 8  
Mean Attribution Scores for the  
Various Groups under Failure

	High Failure	Low Failure
Internals	6.43 (11)	4.33 (11)
Externals	5.15 (7)	4.56 (10)
High Initial Confidence	7.35 (7)	5.25 (7)
Low Initial Confidence	4.23 (11)	3.65 (14)

Note. - Ns for each condition are shown in parentheses.



Table 9 presents the analysis of variance results for subjects who failed. Analysis of variance revealed a significant main effect for Initial Confidence only. High initial confidence subjects tended to attribute responsibility for the failure externally, to bad luck, whereas low initial confidence subjects attributed responsibility for the failure internally, to lack of ability ( $F = 6.73$ ,  $df = 1/31$ ,  $p < .05$ ). Neither I-E nor the level of performance had a significant effect on attribution of responsibility for the failure condition. However, high failure subjects, those who had just failed, tended to be more external in their attribution than low failure subjects, those who failed by a wide margin ( $F = 2.18$ ,  $df = 1/31$ ,  $p < .25$ ). This trend was the reverse of that found in the success condition.

Table 9  
Summary of Analysis of Variance of the  
Attribution Scores under Failure

Source of Variation	SS	df	MS	F
I-E (A)	2.160	1	2.160	.335
Initial Confidence (B)	43.309	1	43.309	6.726*
Level of Performance (C)	14.036	1	14.036	2.180
A X B	.041	1	.041	.006
A X C	4.446	1	4.446	.691
B X C	4.446	1	4.446	.691
A X B X C	.919	1	.919	.143
Error	199.601	31	6.439	

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

SECONDARY ANALYSIS: Intercorrelations under Success and Failure

The results within the success and failure conditions are also reflected in the intercorrelations presented in Table 10.<sup>2</sup> These coefficients represent the linear relationship between I-E, Initial Confidence, and attribution of responsibility for subjects who succeeded at the Anagrams Test (see upper triangular matrix), and for subjects who failed the Test (see lower triangular matrix).

Table 10  
Intercorrelation of Variables for  
Success and Failure Conditions

VARIABLE	VARIABLE			
	1	2	3	4
1. I-E		-.126	.137	.414**
2. Initial Confidence	-.459**		-.148	-.103
3. Level of Performance	-.032	.148		-.379*
4. External Attribution	-.189	.472**	.313	
Success M	12.00	5.20	6.32	4.07
Condition SD	5.29	2.06	1.27	2.52
Failure M	10.49	4.15	3.21	4.82
Condition SD	4.73	2.63	.86	2.67

Note. - N = 41 (success); N = 39 (failure). Intercorrelations for the success condition are in the upper triangular matrix; for the failure condition in the lower triangular matrix.

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

2. Pearson Product Moment correlations were calculated for all the variables. Since more than 27% of the upper and lower parts of the normal I-E distribution were used, I-E was treated as a continuous variable.

Under success, the significant correlations between I-E and external attribution ( $r = .414, p < .01$ ), and between level of performance and external attribution ( $r = -.379, p < .05$ ), derive from the significant main effects found for I-E and level of performance in Table 7. In order to analyze these correlations more stringently, partial correlations were computed to help control for the possible confounding influence of the irrelevant variables. Hence, under success, the partial correlation between I-E and external attribution, holding Initial Confidence and level of performance constant, was statistically significant ( $r_{14.23} = .379, p < .05$ ), as was the partial correlation between level of performance and external attribution, holding I-E and Initial Confidence constant ( $r_{34.12} = -.373, p < .05$ ). Thus, irrespective of Initial Confidence and level of performance, the more externally oriented the subjects were in their locus of control, the greater was the tendency to attribute responsibility for their success externally, to good luck. And, in the case of level of performance, irrespective of I-E and Initial Confidence, as the successful subjects' level of performance increased, the degree of external attribution tended to decrease. The partial correlation between Initial Confidence and external attribution was negative but not significant. The direction of the correlation suggested that the higher the subjects' initial confidence, the greater was the tendency to attribute responsibility for the success internally, to ability.

For subjects who failed, the significant correlation between Initial Confidence and external attribution derives from the main effect found for Initial Confidence in Table 9. The partial correlation between Initial Confidence and external attribution was also significant ( $r_{24.13} = .420, p < .01$ ). Thus, irrespective of I-E and level of

performance, the higher the subjects' initial confidence, the greater was the tendency to attribute responsibility for the failure externally, to bad luck. The partial correlation between level of performance and external attribution, holding I-E and Initial Confidence constant, was positive but was not statistically significant ( $r_{34.12} = .278$ ,  $p < .10$ ). The direction of the correlation indicated that as the level of performance under failure increased, the degree of external attribution also tended to increase, other factors held constant. The partial correlation between I-E and external attribution, holding Initial Confidence and level of performance constant, did not approach significance. The negative correlation between the two independent variables, I-E and Initial Confidence, under failure ( $r = -.459$ ,  $p < .01$ ) was consistent with, but stronger than the correlation found for the two variables under success. The relationship is given more attention in the next section describing the overall intercorrelation of variables.

#### SECONDARY ANALYSIS: Intercorrelation of Variables

Table II presents the intercorrelations of all the variables for all subjects. The only significant correlation, as previously mentioned, was found between I-E and Initial Confidence ( $r = -.251$ ,  $p < .05$ ). The greater the external control orientation, the lower was the level of initial confidence. This relationship was stronger in the failure condition ( $r = -.459$ ,  $p < .01$ ) than in the success condition ( $r = -.126$ ,  $p < .25$ ). None of the other variables were significantly correlated, although the direction of the correlations were consistent with the results of the primary analyses. Moreover, the low correlations between the independent variables and external

Table II  
Intercorrelation of Variables for All Subjects

VARIABLE	VARIABLE			
	1	2	3	4
1. I-E				
2. Initial Confidence	-.251*			
3. Level of Performance	.069	.172		
4. External Attribution	.104	.179	-.173	
M	11.26	4.69	4.80	4.44
SD	5.29	2.40	1.91	2.61

\* $p < .05$

attribution ruled out the need for a covariate analysis of variance. Also, the low correlation between I-E and level of performance provided a discriminant validity check between the personality and performance variables. Since the Achievement Anxiety Test (Alpert & Haber, 1960) was administered to all subjects who were given the I-E Scale, the correlation between debilitating anxiety and external control was available. The correlation was positive but did not reach statistical significance ( $r = .146, p < .25$ ).

#### Summary:

The results of the primary analysis on the data lend considerable support for the first two hypotheses. The predictions for I-E under success and for Initial Confidence under failure were confirmed. The prediction for I-E under failure and the prediction for Initial Confidence under success were not supported statistically, however, the direction of the attribution was as hypothesized. Correlational support was obtained for the third hypothesis concerning the initial confidence ratings of internals versus those of

externals. Unanticipated was the main effect due to performance outcome, which demonstrated the tendency of successful subjects to be more internal in their attribution while those who failed tended to be external in attributing responsibility.

## Chapter IV

### DISCUSSION

The results of this study provide partial support for the hypothesis concerning I-E which was based on Heider's balance theory and recent developments in the causal attribution literature. Internals tended to attribute responsibility for success to their ability, an internal source, while externals tended to attribute responsibility for success to good luck, an external source. Under failure, the opposite but non-significant trend was found. That is, internals tended to be more external in their attribution for failure than were externals.

The secondary analyses of the relationship between I-E and attribution under success and failure separately, were consistent with the primary analysis. The significant main effect of I-E on attribution of responsibility for success revealed that internals were significantly more internal in their attribution for the outcome than were externals. The significant, positive partial correlation between external control and external attribution also supplemented the primary analysis results. Under failure, as could be expected, no significant main effect of I-E on attribution was obtained. Nor was the partial correlation between I-E and external attribution significant; it was, however, negative.

The clear-cut difference among internals, in attributing responsibility for success internally and for failure externally, provided the necessary support for the first hypothesis. Externals, while attributing responsibility for success externally, to good luck,

did not attribute responsibility for failure internally, to a statistically significant degree. This was due to the high-confident externals in the failure condition whose mean attribution scores were much higher than those of the low-confident externals in the same condition ( $t = 1.70, p < .10$ ). Given the task attitude-personality variable combination of high-confident internals and low-confident externals, unqualified confirmation of the predictions would have been obtained.

The failure of external control subjects to fulfill the prediction for attribution of responsibility under failure could be related to the current distinction being made between so-called defensive and true externals (Davis, 1970; Davis & Davis, 1972; Hersch & Schiebe, 1967; Phares, Wilson, & Klyver, 1971; Rotter, 1966). The defensive-external is said to use his external orientation solely as a defense against failure, or other such negative events. When a threat such as failure at a task is not present, the external orientation is disregarded. The true-external, on the other hand, tends to maintain his external orientation at all times, whether the events that occur to him are positive or negative.

It is conceivable that such a distinction could have applied to the externals in this study. Since the external control orientation is often characterized by a lack of confidence or personal efficacy, it would appear inconsistent with the conceptualization of the external control orientation that a true-external be initially confident about passing a particular test. One would expect a true-external to be lacking in confidence, whether it be confidence about passing a specific test or about some more general event. Therefore, it is



suggested that the externals who were low in initial confidence were more representative of the true-external, while high-confidence externals were akin to the defensive-external characterization. The results are consistent with such an interpretation. Under success, the high-confident externals (defensive-externals) were more internal in their attribution than were the low-confident externals (true-externals). Conversely, under failure, the high-confident externals were more external in their attribution than were the low-confident externals. The tendency of high-confident externals (defensive-externals) to be internal in their attribution for success and external in their attribution for failure is consistent with the results obtained by Davis and Davis (1972). Moreover, the tendency of low-confident externals (true-externals) to attribute responsibility for success externally and for failure internally, is consistent with the predictions made for externals based on Heider's balance theory.

It must be noted that the pattern of causal attribution for internals and for the presumed true-externals did parallel the pattern described by Weiner et al. (1971) for individuals high and low in resultant achievement motivation. The parallel relationship which seems to be evident between internal control and high resultant achievement motivation individuals, and between external control and low resultant achievement motivation individuals, should be more thoroughly investigated. This would necessitate the selection of subjects on the basis of their internal and true-external locus of control orientations.

In general, it was found that internals showed greater differentiation in their attribution of responsibility for success versus failure outcomes than did externals. This coincides with, and may be

explained by, the fact that internals are more sensitive to stimulus conditions than externals because internals perceive the reinforcement they receive as internally caused. This being the case, it could be expected that internals would be inclined to be more extreme and unequivocal in responding to the reinforcement they receive than externals.

With respect to Initial Confidence and attribution of responsibility, the present results, for the most part, replicated the results of Feather (1969). Subjects who were initially confident attributed responsibility for failure externally, to bad luck, while those subjects initially unconfident attributed responsibility for the outcome internally, to lack of ability. Under success the opposite trend was found, but unlike Feather's finding, it was not significant; high initial confidence subjects tended to be more internal in their attribution of responsibility than those low in initial confidence.

The secondary analyses of the relationship between Initial Confidence and attribution of responsibility under failure were consistent with both the primary analysis herein, and with Feather's results. The significant main effect for Initial Confidence on attribution of responsibility for failure showed that high initial confidence subjects were significantly more external in their attribution for the outcome than were low initial confidence subjects. The significant, positive partial correlation between high initial confidence and external attribution supplemented the primary analysis results and replicated the results of Feather. Under success, unlike Feather's results, no significant main effect of Initial Confidence on attribution was found. Nor was the partial correlation between

Initial Confidence and external attribution significant, although it was negative.

Although statistical support for the third hypothesis was meagre, the low but significant correlation between I-E and initial Confidence is consistent with the conceptualization of internals as having a more positive sense of personal efficacy and confidence than externals. The results suggested that the two variables are relatively independent of one another. Whether the task-attitudinal variable, Initial Confidence, or the personality variable, I-E, is more predominant in a situation-specific task such as the one used in this study, is a topic for future research. What has been demonstrated is that both are salient predictors of causal attribution in success-failure situations.

The other major finding concerning attribution of responsibility was the effect of performance outcome on attribution. Successful subjects were significantly more internal in their attribution of responsibility than were subjects who failed. The latter group tended to attribute responsibility for their failure to bad luck, an external source. While the findings to date have been inconsistent vis-a-vis the effect of performance outcome on attribution, the present findings do support the results of Hoppe (1931), Fitch (1970), Weiner & Kukla (1970) and, Weiner et al (1971). The general explanation posited by these authors is that ego-defensive strategies, in an attempt to maintain or enhance self-esteem, are responsible for the difference in attribution of responsibility. Thus, after failure, the direction of causal attribution is external, to factors outside the self. This allows the person to maintain his self-esteem. On the other hand, after success, self-esteem is enhanced by attributing

responsibility for it internally, to one's own ability. As was noted by Feather and Simon (1971), further research is needed to delineate the exact conditions which instigate ego-defensive or ego-enhancing strategies in attributing responsibility for success-failure outcomes.

Secondary analyses of subjects' attribution scores under success and failure separately demonstrated that the direction of causal attribution was related to the level of performance. The closer the performance score was to the pass-fail criterion score of five, the greater was the external attribution. Conversely, the further away the performance score was from five, the greater was the internal attribution. Responsibility for extreme performance scores tended to be attributed internally, to ability or to inability. This finding replicates the results obtained by Feather (1969). The latter author explained this phenomenon in terms of Heider's theory. Since the extreme score is a very definitive outcome, there will be less doubt that the score is a relatively stable reflection of the attributor's ability or lack of it; therefore, causal attribution tends to be internal. However, a less definitive outcome, one that is close to the pass-fail criterion, does not provide enough convincing information to allow a judgment to be made about the attributor's ability or lack of it; therefore, causal attribution tends to be external.

By way of replication, the importance of Initial Confidence as a predictor of causal attribution has been given further empirical support. Of greater importance, however, was the demonstration of the salience of I-E as a predictor of causal attribution. Previous research which failed to find predictable differences between internals and externals in their attribution of responsibility for success-failure outcomes can be said to have been misguided in assuming that I-E would

bear a constant relationship to attribution of responsibility; whereas, what has been demonstrated is an interaction of I-E and success-failure outcome in relationship to attribution of responsibility.

Since there was some evidence to infer that the direction of causal attribution for defensive-externals is the reverse of that for true-externals, it is essential that future researchers make the distinction between defensive- and true-external control in assessing the relationship between I-E and causal attribution. Future research should also direct itself toward establishing the exact relationship between I-E and resultant achievement motivation vis-a-vis causal attribution. Such research will serve the need to further delineate the personality dynamics which guide the process of causal attribution.

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## APPENDIX A

### SOCIAL REACTION INVENTORY

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief. Obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on the separate answer sheet which has been passed out. **FILL OUT THIS ANSWER SHEET NOW.** Print your identification number and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and blacken the space under the letter which corresponds to the statement you choose as most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

#### REMEMBER

Select that alternative which you personally believe to be more true.

I more strongly believe that:

1. a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.  
b. People who can't get others to like them, don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

I more strongly believe that:

10. a. In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.
- b. Many times exam questions tend to be so unrelated to course work, that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
- b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
- b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.
- b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.
- b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
- b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
- b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
- b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
- b. There really is no such thing as "luck".
19. a. One should always be willing to admit his mistakes.
- b. It is usually best to cover up one's mistakes.

I more strongly believe that:

20. a. It is hard to know whether or not a person really likes you.  
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.  
b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.  
b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.  
b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.  
b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.  
b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.  
b. Sometimes I feel that I don't have enough control over the direction, my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.  
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Page 1

On the scale below indicate how confident you are that you can pass this test. Mark a cross with your pen on the scale at a point which indicates how confident you feel about passing the test.

---

Not very  
confident  
at all

Moderately  
confident

Very  
confident

On each page from 2 to 11 one of the following anagrams will appear. their order of presentation will be randomized for each subject. That is, each test booklet will have the anagrams in a different sequence.

## Pages 2 through 11

woelly	spruue	oneass	cnegah
--------	--------	--------	--------

onersp	oolruc	uftrue	mnegaa
--------	--------	--------	--------

meealf
--------

bunmer
--------

Record your score ( the number of anagrams that you solved) in the space below.

Number solved  
out of ten: \_\_\_\_\_



Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_

POST • PERFORMANCE QUESTIONNAIRE

## Page 1

**PART 1: For Subjects Who PASSED The Test: (scores of 5 or above)**

How a person does at tasks like the one you just completed depends upon a number of factors.

At one extreme there are some people who are just lucky enough to get the right combination of letters quickly in the time allowed. They happen to hit upon the right combination of letters largely by chance. Given another set of anagrams they might not do so well.

At the other extreme there are people who succeed because they have the skill and ability. Good luck isn't really involved for these people. Given another set of similar anagrams they would probably do just as well because they have the ability.

Consider the score that you made on the Anagrams Test. In your case do you consider that your score was mainly due to good luck, mainly due to skill and ability, or reflected some mixture of good luck and ability.

Mark a cross on the linear scale below at the point you feel is most descriptive of your feeling.

---

Mainly due  
to ability

50% Luck  
50% Ability

Mainly due  
to good luck

**PART 2: For Subjects Who FAILED The Test: (scores below 5)**

How a person does at tasks like the one you just completed depends upon a number of factors.

At one extreme there are some people who are just not lucky enough to get the right combination of letters in the time allowed. Their failure is mainly due to bad luck. Given another set of similar anagrams they might do better.

At the other extreme there are people who fail because they lack the necessary skill and ability. Bad luck really isn't involved for these people. Given another set of anagrams they would probably do just as poorly because they lack the necessary ability.

Consider the score that you made on the Anagrams Test. In your case do you consider that your score was mainly due to bad luck, mainly due to lack of ability, or reflected some mixture of bad luck and lack of ability.

Mark a cross on the linear scale below at the point you feel is most descriptive of your feeling.

---

Mainly due  
to lack of  
ability

50% Bad Luck  
50% Inability

Mainly due  
to bad luck

## APPENDIX D

## RAW DATA

	I-E Score	In. Conf. Rating*	Perform- ance Score	Ext. Att- ribution
High-Confident Internals (Success)	7	7	5	9
	8	5	8	0
	7	5	5	3
	5	7	8	2
	9	6	5	3
	1	10	8	2
	5	6	9	2
	5	7	9	2
	6	5	5	1
	7	6	5	1
Low-Confident Internals (Success)	4	5	6	3
	9	4	5	2
	7	2	8	0
	1	5	8	3
	10	4	7	4
	9	0	6	5
	10	5	6	4
	10	2	7	3
High-Confident Externals (Success)	18	5	6	5
	16	7	7	3
	17	6	5	5
	14	6	6	4
	14	7	6	4

	I-E Score	In. Conf. Rating	Performance Score	Ext. Att-ribution
	14	7	5	7
	17	5	8	6
	17	5	8	6
	18	6	5	8
	15	10	5	3
	20	7	8	2
	17	7	5	3
	15	7	5	5
	<hr/>			
Low-Confident Externals (Success)	17	2	6	10
	16	5	6	10
	15	5	6	5
	14	3	5	7
	19	4	7	1
	16	5	7	4
	16	4	5	8
	14	3	6	5
	19	1	8	2
	15	5	6	5
	<hr/>			
High-Confident Internals (Failure)	6	7	3	0
	6	10	3	8
	2	6	2	5
	3	8	4	7
	6	6	4	7
	7	7	4	10
	3	7	2	2

	I-E Score	In. Conf. Rating	Perform- ance Score	Ext. Att- ribution
	9	9	4	7
	4	10	3	10
	10	6	4	10
<hr/>				
Low-Confident Internals (Failure)	7	2	4	8
	9	3	2	5
	9	2	4	6
	6	1	4	3
	9	3	3	3
	5	2	2	4
	4	3	4	7
	9	2	4	2
	9	5	3	2
	8	5	4	2
	9	5	3	5
	8	3	3	3
<hr/>				
High-Confident Externals (Failure)	15	6	3	7
	16	5	4	7
	15	5	4	6
	16	6	3	4
<hr/>				
Low-Confident Externals (Failure)	15	0	3	0
	16	1	1	1
	16	3	4	7
	15	3	4	2
	18	2	4	5
	16	4	3	6

I-E Score	In. Conf. Rating	Perform- ance Score	Ext. Att- ribution
15	2	3	5
14	0	2	5
14	5	2	4
15	2	2	6
14	2	4	2
16	3	4	3
15	1	2	2

---

\* The distinction between high and low initial confidence was based on the 50th percentile. The 50th percentile fell at a score of 5. Scores at or above the midpoint on the linear scale were classified as high initial confidence. Scores below the midpoint were classified as low initial confidence.



## UNIVERSITY OF WINDSOR

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253-4232

DEPARTMENT OF PSYCHOLOGY

July 21, 1972.

Dear Participant,

The results of the psychology experiment you took part in last March have finally been analyzed. As you remember, you were asked to rate how confident you were about passing the Anagrams Test. Based on Heider's Balance Theory, we predicted that those who were highly confident about passing the test would do the following: (a) if they passed the test, they would attribute responsibility for their success to their ability; (b) if they failed the test, however, they would attribute responsibility for the failure to bad luck.

For those who were not initially confident about passing the test, we predicted the opposite. That is: (a) if they passed the test, they would attribute responsibility for their success to good luck; and (b) if they failed, they would attribute responsibility for their failure to their lack of ability.

The results supported these predictions. How initially confident a person is does determine how he will attribute responsibility for success or failure at a given task or test. This was the most significant finding of the study.

It was also found that if a person succeeded at the Anagrams Test, he would tend to see the success as a function of his own ability. Conversely, if he failed, he tended to see the failure as a result of bad luck. This finding seems to suggest that we will credit ourselves (our ability, etc.) when outcomes at performance tasks are favorable (as when we succeed), but we will blame external forces, forces beyond our control (such as bad luck), when outcomes are negative or unfavorable (such as when we fail).

Thankyou once again for taking time to participate in the study. If you care to delve into the details of the study, you may obtain a copy of my thesis at the library when and if you return to the Windsor campus this fall.

Yours truly,

Tim Gilmor



VITA AUCTORIS

- 1948 - Born in Windsor, Ontario, to Robert John and Florence Henrietta Gilmer.
- 1953-1966 - Received education at St. Andrew's Public School and Southwood Secondary School, Galt, Ontario.
- 1970 - Received B.A. in Political Science and Psychology from the University of Windsor, Windsor, Ontario.
- 1970-1972 - Registered as a full-time graduate student at the University of Windsor.