Contingencies of reinforcement and levels of success in a learned helplessness paradigm among college females.

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CONTINGENCIES OF REINFORCEMENT AND LEVELS OF SUCCESS IN A LEARNED HELPLESSNESS PARADIGM AMONG COLLEGE FEMALES

A Thesis Presented

By

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CONTINGENCIES OF REINFORCEMENT AND LEVELS OF SUCCESS
IN A LEARNED HELPLESSNESS PARADIGM AMONG COLLEGE FEMALES

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# Table of Contents

Chapter I. Introduction .............................................. 1  
  Social Learning Theory ............................................ 2  
  The Expectancy Construct .......................................... 7  
  Expectancies for Internal Versus External Control  
  of Reinforcement ................................................... 10  
  Expectancies for Success .......................................... 21  
  Learned Helplessness .............................................. 32  
  Statement of the Problem .......................................... 49  

Chapter II. Method ................................................... 59  
  Subjects ............................................................. 59  
  Experimenters ....................................................... 59  
  Procedure ........................................................... 60  
    Pretest ........................................................... 60  
    Treatment Phase ................................................. 64  
    Criterion Phase ............................................... 67  
    Post Hoc Questionnaire ......................................... 68  

Chapter III. Results .................................................. 70  

Chapter IV. Discussion ............................................... 101  

References ............................................................ 108  

Appendix 1 ............................................................ 128  
Appendix 2 ............................................................ 129  
Appendix 3 ............................................................ 133  
Appendix 4 ............................................................ 139  
Appendix 5 ............................................................ 142  
Appendix 6 ............................................................ 143  
Appendix 7 ............................................................ 146
List of Tables

Table 1. Means and Standard Deviations for Subjects' Scores on Dependent Measures for Male and Female Experimenters..................................................72

Table 2. One-Way Analyses of Variance: Effect of Sex of Experimenter on Dependent Measures..........................73

Table 3. Means and Standard Deviations for Subjects' Scores on Dependent Measures for Contingent Conditions..........................................................74

Table 4. Means and Standard Deviations for Subjects' Scores on Dependent Measures for Noncontingent Conditions......................................................75

Table 5. Means and Standard Deviations for Subjects' Scores on Dependent Measures Control Condition and Total Sample (Ungrouped)..........................77

Table 6. Two Way Analyses of Variance: Effect of Contingency and Level of Success..............................................78

Table 7. Means and Standard Deviations for Subjects' Scores on Dependent Measures for Contingent and Noncontingent Conditions (Ungrouped)...........79

Table 8. One Way Analyses of Variance: Effect of Contingency versus Noncontingency........................................80

Table 9. Dunnetts Tests for Dependent Measures: Contingent Conditions versus Control Conditions (two-tailed).................................................................82

Table 10. Dunnetts Tests for Dependent Measures: Noncontingent Conditions versus Control Conditions...............................................................83

Table 11. Means and Standard Deviations for Pretest and Performance Satisfaction Measures Contingent Conditions..................................................85

Table 12. Means and Standard Deviations for Pretest and Performance Satisfaction Measures for Noncontingent Conditions........................................86
Table 13. Means and Standard Deviations for Pretest and Performance Satisfaction Measures for Control Condition (n = 32). ........................................ 87

Table 14. Pearson Correlation Coefficients Matrix for Pretest Measures and Specific Expectancy A Total Sample (Ungrouped) (n = 96). ................................. 88

Table 15. Zero Order Partialis and Partial Correlation Coefficients for Generalized Expectancy for Success Scale and Specific Expectancy A Scores Controlling for Variability due to Marlowe-Crowne Social Desirability Scale Scores for Experimental Groups ........................................ 90

Table 16. Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Contingent Conditions ................................. 91-92

Table 17. Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Noncontingent Conditions .................... 93-94

Table 18. Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Control Condition (n = 32) ........................................ 95

Table 19. Pearson Correlation Coefficients and Significance Levels for Generalized Expectancy and Criterion Task Performance Measures for Contingent Conditions ........................................ 97

Table 20. Pearson Correlation Coefficients and Significance Levels for Generalized Expectancy and Criterion Task Performance Measures for Noncontingent Conditions ........................................ 98
List of Figures

Figure 1. Flow Chart.......................................................53
CHAPTER I

Introduction

Historically the concept of expectancy has been an influential component of psychological theorizing since the early part of this century. Its impact is evident at both poles of the theoretical continuum; from cognitive to reinforcement theories. Early formulations of Tolman (1934) that behavior is in part determined by the probability of goal attainment are presently acknowledged and explored by many learning theorists (Atkinson & Reitman, 1956; Dollard & Miller, 1950; Feather, 1959; Mowrer, 1960; Seligman, 1975). Brunswick's (1951) attempt to incorporate the idea of the probability of occurrence of events in the environment into the psychological field and Lewin's (1951) views regarding time perspective within his field theory represent germinal expectancy theories of the cognitive realm. Lewin wrote:

The clarification of the problem of past and future has been much delayed by the fact that the psychological field which exists at a given time contains also the views of that individual about his future and past...he has certain expectations... Study of the level of aspiration has also given us considerable insight into the effect of the psychological past (namely previous success or failure) on the psychological future... It is necessary to take into account the subjective probability with which the individual views the present or future state of affairs because the degree of certainty also influences his behavior (p. 308-312).

Rotter (1954) was the first theorist to attempt to ac-
count for complex human social behavior which included the systematic assessment of the role of expectancy. His social learning theory developed from efforts to integrate both cognitive and reinforcement models within a molar theory of personality. Recognition of the expectancy construct in current literature is due, in large part, to the influence of social learning theory on the psychological community. Since much of the investigation of the role of expectancies is attributable to Rotter and his colleagues, an overview of the basic principles of social learning theory will place expectancy research in its appropriate theoretical context.

Social Learning Theory

Within social learning theory behavior is assumed to be directional. The direction or goal of behavior may be inferred from the effect on reinforcing conditions. According to Rotter, the occurrence of behavior is determined not only by the nature or importance of goals or reinforcements, but also by the individual's anticipation or expectancy that reinforcement will occur.

Four major concepts arise from the social learning theory formulation: behavior potential, expectancies, reinforcement value and the psychological situation. Each of these variables will be briefly discussed in turn and the relationship among them will be outlined. The expectancy construct will be examined in greater detail once the general framework
is presented.

Behavior potential is the potentiality of the occurrence of any behavior in any given situation or situations as calculated in relation to any single reinforcement or set of reinforcements. It is a relative concept intended to describe the potentiality of one behavior in relation to other alternatives available to the individual. In a given context then, one is able to say only that the potential for the occurrence of behavior $x$ is greater than that of behavior $y$. Behavior potential is embedded within a broader analogue, need potential, which refers to groups of functionally related behaviors. It identifies the mean potentiality of such groups of behaviors which are directed at obtaining the same or a set of similar reinforcements.

Reinforcement value is defined as an individual's degree of preference for any one of a group of reinforcements to occur when the probability of each reinforcement occurring is held constant. Measurement of reinforcement value is also relative and therefore judged only with respect to values of other reinforcements. Ranking (Phares & Rotter, 1956) and behavioral choice (Lotsof, 1956) techniques have been used to establish an individual's reinforcement value hierarchy. Need value is the broader analogue of reinforcement value. It refers to an individual's mean preference for a set of functionally related reinforcements independent of their expectancy for occurrence.
Generalization from singular behavior potentials and reinforcement values to sets of behaviors or reinforcements is arrived at empirically and may therefore reflect both culturally and/or individually idiosyncratic patterns. Identification of functional relatedness varies across cultures, individuals, and time. Categories may also reflect different levels of abstraction from relatively narrow conceptualizations, such as the need to be independent of parental influence, to progressively more inclusive classifications, such as the need to be independent of social influence.

Expectancy is the third major variable in social learning theory. It may be defined as the subjective probability that any specific reinforcement or group of reinforcements will occur in any given situation or situations. Inclusion of the term "subjective" implicitly asserts that expectancies are determined not only by the probability arrived at through objective observation of one's past history of reinforcement, but also by the generalization of expectancies from related behavior-reinforcement sequences. This dual determination is reflected in the formal statement of the expectancy construct:

$$E_{S_{1}} = f(E_{S_{1}}' \& GE)$$

which is read, an expectancy ($E_{S_{1}}$) is a function of the probability of occurrence based on past experience in situations.
perceived by the individual as the same \( E'^1 \) and his/her generalization of expectancies for the same similar reinforcement to occur in other situations for the same or functionally related behavior (GE).

The relative weights of specific and generalized expectancies for a given instance is the function of the number of experiences in the specific situation \( N_{S1} \) so that:

\[
E_{S1} = f(E'^1, \frac{GE}{N_{S1}})
\]

Clearly, generalized expectancies are most powerfully operative when the individual is presented with a novel or relatively ambiguous circumstance for which no appropriate specific expectancy exists. By the same token, they come into play relatively less so when specific expectancies are available from prior experience in the same or similar situations. To illustrate, a neophyte skier's expectancy for winning his/her first downhill ski competition is largely determined by expectancies generalized from other athletic experience and becomes progressively more a function of specific ski performance as participation in ski races increases.

Unlike behavior potential and reinforcement value, expectancies are mutually independent and can therefore be assessed on an absolute scale and compared across situation by keeping reinforcement value constant. Procedures for measuring expectancies may be divided into behavioral and verbal
methods. The former simply requires the observation of behavioral choice on the part of an individual when the reinforcement value of every alternative is equated. A higher expectancy of attaining reinforcement via alternative \( a \) versus alternative \( b \) is inferred from the choice of behavior \( a \) over behavior \( b \). Verbal assessment strategies include a person's probability statement with regard to a particular outcome (Phares, 1964), betting (Ford, 1963), or a person's statement of his/her expected score given a series of graded scores (Jessor, 1954). Rotter, Fitzgerald, and Joyce (1954) compared the relative accuracy of the four procedures and concluded that they tended to measure the same dimension. Scores based on absolute probabilities, however, tended to be greater than those obtained through procedures employing most expected scores or probability of attaining at least a given score along a graded continuum.

The mean expectancy of obtaining positive satisfaction as a result of related behaviors directed toward obtaining a group of functionally related reinforcements is known as freedom of movement. It is the broader conception corresponding to expectancy in the social learning framework. In short, freedom of movement reflects an individual's belief that his/her behavioral repertoire includes responses that allow one to attain one's goals.

Lastly, within social learning theory the psychological situation is an essential determinant of behavior. This di-
mension constitutes the arena in which all other variables operate and is composed of all the environmental cues and their meanings for the person. Inclusion of the setting and its personal meaning within social learning theory analysis of behavior is derived from the underlying recognition of interaction between personal attributes and situational factors. Acknowledging this, the psychological situation is left implicit in Rotter's formulation of the relationship among the principle components.

In formal terms, the relationship may be stated as follows:

\[ B_{x,s_1}^r_a = f(E_{x,r_a,s_1} & RV_{a,s_1}) \]

that is, the potential for behavior \( x \) to occur in situation \( l \) and in relation to reinforcement \( a \) is a function of the expectancy of the occurrence of reinforcement \( a \) following behavior \( x \) in situation \( l \), and the value of reinforcement \( a \) in situation \( l \).

The Expectancy Construct

Rotter postulated that, although expectancies are determined by one's reinforcement history, they are formulated subjectively. Thus, an individual's expectancy is continually modifiable to a greater or lesser degree both as a function of one's unique reinforcement history and in response to
current reinforcement contingencies. A mere compilation and analysis of a person's actual reinforcement history is insufficient for the prediction of behavior. In support of this hypothesis, Rotter, Chance, and Phares (1972) cite several studies demonstrating that subjects experiencing identical reinforcement patterns during an experiment do not respond with identical expectancies. Elaboration of the theoretical and empirical underpinnings of the expectancy construct is crucial.

Expectancy is one of two components, the other being reinforcement value, which determines the potentiality for the occurrence of behavior. Several factors favor the study of expectancy as opposed to reinforcement value. First, the richness of human experience provides much greater variability of expectancies than one might anticipate of reinforcement value. This is simply to say that subjective perceptions are less susceptible to culturally imposed values than are rewards or punishments. Hypothetically expectancies can be altered more easily than the value of reinforcement thereby allowing greater opportunity for experimental manipulation and differential behavioral predictions. Lastly, by virtue of the absolute scaling permitted with expectancies, investigators may contrast different levels of expectancy with regard to the same reinforcements. In short, expectancies are more accessible to empirical investigation than reinforcement value.
Rotter has provided a model whereby expectancies may be modified. He hypothesized that the size of changes in expectancy is mediated by two variables: the surprise value of an occurrence and the number of previous experiences in the situation for the individual. In other words, the relative importance of an event inconsistent with past experience is in part a function of the degree to which it is discrepant with previously held expectancies and the number of previous experiences in similar situations. This may be stated:

$$\Delta E' = f\left(\frac{O - E}{N}\right)$$

where $E'$ represents the increment of a specific expectancy; $N$ represents some function of the frequency or number of previous experiences in a given situation; $O$ is the occurrence of the reinforcement stated as a decimal (0-1); and $E$ is the prior expectancy for the occurrence of the reinforcement.

Expanding the schema outlined above to include the influence of generalized expectancies, the formula is as follows:

$$E_{s_1} = \frac{f(E' & GE_r & GE_{ps_1} & GE_{ps_2} \ldots GE_{ps_n})}{f(N_{s_1})}$$

the subscript $r$ denoting expectancies generalized from other similar attempts to obtain a given reinforcement, and the
As implied above, expectancy is not considered a unitary construct. An individual may hold myriad expectancies which vary in their level of specificity, magnitude, and functional dimensions. At least three of these dimensions have been identified and investigated by Rotter and his associates; interpersonal trust (Rotter, 1967), internal versus external control of reinforcement (Rotter, 1966), and expectancy for success (Rotter, 1954). Only the latter two are relevant to the present discussion and will be considered at length.

Expectancies for Internal versus External Control of Reinforcement

The dimension of expectancy known as internal-external control of reinforcement (IE or locus of control) has become a significant and valuable construct in learning and personality research. Reviews of the now prodigious literature on the subject attest to its utility (Joe, 1971; Lefcourt, 1966, 1972; Phares, 1976; Rotter, 1966). Rotter (1966) demarcates the endpoints of the internal-external continuum as follows:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the
great complexity of forces surrounding him. When the event is interpreted in this way by an individual we have labelled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics we have termed this a belief in internal control (p. 1).

Phares (1957) was among the first to demonstrate that an individual's expectancy regarding the locus of control of reinforcements has predictable consequences for his/her behavior. Phares presented subjects with an ambiguous task involving perceptual judgments of color and length and instructed one group that success was a matter of skill. He informed a second group that the outcome of the task was a matter of chance. After systematically manipulating subjects' success and failure by giving a fixed order of partial reinforcement, Phares examined changes in expectancy. He found that subjects differentially modified their expectancies as a function of their instructional set. Subjects who were led to believe that their task performance was a result of their skill were more likely to raise their expectancies after success and lower them after failure than were subjects who believed task performance was a chance or random event. In general, subjects in the skill condition changed their expectancies more often than those given a chance cognitive set.

James and Rotter (1958) extended the skill-chance paradigm to its effects on the growth and extinction of verbal
expectancies under partial and 100% reinforcement. They administered an "extrasensory perception" task to each of four experimental groups, in permutations of skill or chance instructions and 100% or 50% reinforcement for 10 trials. Trials to extinction were significantly longer for subjects given chance instructions than for those given skill instructions. Groups administered 100% reinforcement proved significantly more resistant to extinction than the 50% reinforcement groups.

Rotter, Liverant, and Crowne (1961) obtained results which were consistent with Phares (1957) and James and Rotter (1958) when subjects' belief in locus of control was manipulated by the nature of the task itself rather than instruction. Subjects received 25%, 50%, 75%, or 100% reinforcement on one of two tasks. Rotter et al. chose tasks culturally perceived as either skill or chance mediated and discovered that increments and decrements in expectancy following success or failure respectively were greater on tasks generally perceived as chance determined. In contradiction to established learning principles, 100% reinforced groups showed more resistance to extinction than groups under 50% partial reinforcement in the skill, but not chance condition. Differences between the groups were smaller at the 25% and 50% schedules.

Similar results were reported by Holden and Rotter (1962) using a behavioral criterion other than verbalized ex-
pectancy statements. Using the ESP tasks, subjects were given two dollars in nickels and told that they could bet one nickel on each trial on whether or not they would succeed. They could discontinue the task whenever they desired and keep the remaining money or continue until they ran out of money. Three groups were all given 50% partial reinforcement and one of three instructions: skill, chance, or ambiguous. The former group produced significantly fewer trials to extinction than the latter two groups with extinction defined as voluntary termination of the experiment.

Collectively, the studies cited thus far confirm that expectancies are a powerful determinant of subsequent behavior. For the moment, the conclusion must be restricted, however, to relatively specific expectancies generated by the manipulation of situational cues. Just as importantly, Rotter contends that expectancies mediate behavior even when specific beliefs about behavior-reinforcement contingencies are not provided. In the absence of specific expectancies, the individual, hypothetically, mobilizes expectancies generalized from other situations. Indeed, Crandall (1951), Jessor (1954), and Chance (1959) demonstrated that generalization takes place along a gradient predicted by the degree of functional relatedness among behaviors, that is, on the basis of similarity of reinforcement. It was assumed that individual differences in generalized expectancies about the control of reinforcement would prove predictive of responding
in novel or ambiguous circumstances. Social learning researchers soon turn their attention from specific situational analyses to expectancies as a personality variable.

Phares (1957) and James (1957) were the first to attempt measurement of the generalized locus of control. Early versions of the scale consisted of belief statements in a forced choice format. Scale items sampled beliefs about internal versus external control of reinforcement in several areas including academic recognition, social approval, love and affection, dominance, social-political events, and general life philosophy. Individuals scoring on the external end of the continuum tended to behave similarly to subjects in chance conditions of studies cited earlier while the converse was true of subjects with scores at the internal end. Externals showed more unusual shifts, smaller magnitude of shifts in expectancy following reinforcement, and fewer shifts in expectancy than internals.

The scale was subsequently subjected to more stringent psychometric criteria by Rotter and his followers. Refinements included attempts to reduce the effects of social desirability and intelligence in response to scale items. The scale was broadened to reflect greater diversity of life experiences and acceptable levels of internal consistency, test-retest reliability, and discriminant validity were established (Rotter, 1966).

Work by Rotter, James, Phares, and others indicated that
individuals carry with them different generalized expectancies regarding control over reinforcement contingencies. A number of behavioral consequences were theoretically predictable given knowledge of such a belief. With scale in hand, social learning theorists set out to test these hypotheses. A major thrust of this literature concerned the individual's attempts to control, manipulate, or master his/her environment. Researchers predicted that efforts to do so were more likely to arise from an internal orientation rather than external one.

Achievement motivation was postulated as one research area in which internal-external control would prove predictive. Studies by Chance (1965), Crandall, Katkovsky, and Crandall (1965), Crandall, Katkovsky, and Preston (1962), McGhee and Crandall (1968), and Nowicki and Strickland (1973) supported this hypothesis. They found that internals spent more time in intellectual activities, exhibited more intense interest in academic pursuits, and made better grades than did externals. These results were more striking for males than for females. The relationship between internality and achievement was inconsistent for female subjects. An extensive study of United States school children corroborated the assertion that belief in personal control over academic rewards for minority students is a strong predictor of achievement in academic settings (Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, & York, 1966). Significant levels of
predictions of academic success have been obtained for college populations (Brown & Strickland, 1972; Nowicki & Duke, 1974; Nowicki & Walker, 1973).

Investigators also explored the nature of the relationship between the internal-external dimension of generalized expectancies and an individual’s capacity to delay gratification. Researchers anticipated that an internal orientation would be predictive of the ability to delay gratification since presumably the process of planning and working for long range goals presupposes a belief that one’s efforts can determine the outcome. In one of the earliest studies, Bialer (1961) found internality significantly related to the choice of delayed more valuable rewards in a sample of normal and mentally retarded children. Walls and Smith (1970) found that children with internal expectancies were more likely to wait for a 7¢ prize than accept an immediate 5¢ prize than children with external expectancies. No relationship, however, between internality and delayed reinforcement was found by Walls and Miller (1970) with a small sample of vocational rehabilitation and welfare clients, although both internality and preference for delayed reinforcement were positively related to level of education. Using white experimenters, Zytkoskee, Strickland, and Watson (1971) tested black and white ninth graders, controlling for education and socio-economic background. Black children in the study were both more external and less likely to delay rewards than were
white children, but locus of control scores as measured by the Bialer scale were unrelated to delay. Subsequently, Strickland (1972) assessed the relationship between locus of control and preference for delayed reinforcement in black and white children while controlling for race of experimenter. She reported that delay behavior was dependent on the experimenter's race. Further, in the white sample, an internal orientation was significantly related to one's choice of a more valuable, delayed reward. A later study by Strickland (1973) replicated the relationship between IE and delayed gratification with a group of all white elementary school students.

Time perspective is theoretically related to the ability to delay gratification and has been shown to be related to locus of control. Walls and Smith (1970) found that internals more accurately judged elapsed time than externals. In general, internals reported longer future time perspective than externals (Platt & Eisenman, 1968; Shybut, 1968). Shipe (1971), using Kagan's Matching Familiar Figures Test and the Porteus Mazes as dependent measures, found internals to be more capable of delay than externals.

Lefcourt (1972) suggested that ambiguous results of research on the relationship between internality and delay of gratification may be a function of restrictive research paradigms. He pointed out that "delay" had been operationalized as empty or waiting time rather than task- and goal-oriented
persistence thereby rendering the delayed, longer reward non-contingent. Mischel, Zeiss, and Zeiss (1974) found that internal preschoolers were more willing to delay gratification than external preschoolers, but only when the delay time involved them in instrumental activities as opposed to passive waiting. Lefcourt's interpretation thus seems plausible.

Both Lefcourt (1972, 1976) and Phares (1973, 1976) concur in concluding that the relationship between belief in internal control of reinforcement and the capacity to delay reinforcement is generally supported. They caution, however, against generalizing beyond settings and subject populations for which the relationship has been demonstrated.

Schnieder (1972) suggested that internals show a preference for skill activities which allow one to exercise control over outcomes. Rotter and Mulry (1965) interpreted the results of a perceptual judgment task along similar lines. They found that internals took longer time to decide under chance conditions than did externals. They hypothesized that internals placed greater value on rewards obtained skillfully than rewards obtained by happenstance.

Subjects' responses to success and failure can be distinguished on the basis of their locus of control orientations. Feather (1968) found that internals tended to adjust their expectations upward following success and downward following failure to a greater extent than externals. Ducette and Wolk (1972) reported that externals are characterized by
a preference for extreme risk, low persistence, and atypical shifts in level of aspiration. Liverant and Scodel (1960) demonstrated that externals showed greater preference for high risk betting strategies compared to internals.

Internals may also derive greater satisfaction from successful performance on challenging tasks than externals. Karabenick (1972) found that the value of success on a very difficult task is greater for internals than for externals while the opposite is true of ratings of satisfaction for success on an easy task.

Internals and externals appear to exhibit different cognitive styles in regard to assimilation and recall of information. In a sample of prison inmates, Seeman (1963) found greater retention of parole-relevant information on the part of internals than externals. Among tubercular patients, Seeman and Evans (1962) found that internals knew more about their condition, were more inquisitive with hospital staff, and were less satisfied with the amount of information received than externals. Davis and Phares (1967) found that internals requested more information than externals about a person whose attitudes they thought they would be attempting to change later when told that attitude change was skill determined or when given ambiguous instructions. No differences were found between internals and externals when a chance instructional set was induced. Williams and Stack (1972) extended the conclusion that internals more actively seek information
than externals to black populations. Lefcourt and Wine (1969) found that internals were more likely to attend to cues that resolve uncertainty than externals.

Further corroboration of differential cognitive strategies as a function of locus of control orientation is offered by Getter (1966), Ducette and Wolk (1973), Lefcourt (1967), Lefcourt, Lewis, and Silverman (1968), Phares (1968), Rothschild and Horowitz (1970), Ude and Vogler (1969), and Wolk and Ducette (1974). Internals as compared to externals consistently demonstrated superior acquisition of task information, and greater and more immediate awareness of reinforcement contingencies. Conversely, internals showed poorer sensitivity to cues discrepant with their belief of personal control than externals (Lefcourt, Lewis, & Silverman, 1968). Finally, the hypothesis that internals are more likely than externals to gather and put into practice adaptive information from their environment is convincingly supported by studies of the relationship between locus of control and physical health and well-being (James, Woodruff, & Werner, 1965; Johnson, Leventhal, & Dobbs, 1971; McDonald, 1970; Seeman & Evans, 1962; Straits & Sechrest, 1963; Weaver, 1972; Williams, 1972).

In summary, there appears to be ample evidence with which to characterize both specific and generalized expectancies for internal-external control as predictive variables. An internal orientation appears to be related to factors...
which facilitate performance including greater information seeking, better retention, and greater utilization of information. Internals generally do perform more successfully than externals. Further, interns seem to show more striving for competence than externals as indicated by the interns' preference for skill-determined tasks, adaptive cognitive strategies, and greater satisfaction derived from successful completion of challenging tasks.

Expectancies for Success

Internal-external control of reinforcement is only one class of the multidimensional expectancy construct. An extensive literature on a different expectancy—expectancies for success, has shown that it, too, is an important determinant of behavior. The literature review that follows will be confined to the antecedents and consequences of expectancies for success in achievement situations.

Atkinson and Reitman (1956) observed that studies of need achievement demonstrate the efficacy of assessing an individual's expectancies for success. They contended that including a measure of expectancies enhances the behavioral predictability of TAT-like material. Similarly, Battle (1966) reported that expected grade yielded the highest correlation with actual grades received when compared with a number of other variables including the students' minimal standards, their certainty of reaching the standards, and the
importance of doing well. Anticipated grades proved a better predictor, in fact, than students' intelligence quotients.

Todd, Terrell and Frank (1962) contrasted two groups of college students of superior academic aptitude. Students labelled normal achievers had overall grade point averages of 3.00 or higher while those with averages of 2.00 or lower were classified as underachievers. Underachievers revealed lower expectancies for academic recognition than normal achievers indicating a positive relationship between expectancy for academic success and actual success.

Uhlinger and Stephens (1960) employed a sample of freshman college students all of whom had been in the top ten percent of their high school class and were considered by the college to be superior students. A measure of their expectancies for success at college was obtained and compared with subjects' grades. Again, a positive relationship between stated expectancies for success and academic performance was found. Students who expected to perform well in college actually did show superior academic performance with respect to equally competent peers possessing lower expectancies for academic success.

A series of five studies conducted by Crandall and McGhee (1968) lends additional support to the predictive utility of specific expectancy estimates for task performance. The first study obtained measures of expectancy from junior high school boys regarding their performance on an
angle-matching task. Subjects were asked to estimate their perceptual skill relative to fellow subjects. Two measures of academic competence, grades and total achievement test percentile, correlated significantly and positively with expectations for success.

Male and female junior high school students participated in the second study by Crandall and McGhee. Expectancy measures were obtained as previously outlined and subjects were individually administered a novel digit-symbol substitution task described by the experimenter as the type of task included on many intelligence tests. Correlations between expectancies on the digit-symbol task and grade average were .39 (p < .001) for males and .27 (p < .01) for females.

Crandall and McGhee reported comparable levels of significance for correlation between expectancy estimates derived from an angle-matching task characterized by the experimenter as intellectual in nature and performance on the California Achievement Tests. Subjects in this study were drawn from a population of male and female junior high school students.

Male and female college students enrolled in an introductory psychology course comprised the sample for the fourth study. Early in the semester and prior to any course feedback students indicated their expectancy for success in the course on a 12-point grading scale. Crandall and McGhee found once more that expectancy correlated with actual final
grades.

In the fifth and final study reported by Crandall and McGhee expectancies for success with respect to four academic areas were obtained from male and female high school seniors. Students were asked to rate their "true or native ability" as compared to 100 peers on four separate vertical scales corresponding to mathematics, English, natural science, and social science. The researchers found significant positive relationships between the expectancy measures and subtest scores for each of the four academic areas on the Iowa Tests of Educational Development and grade averages for the respective areas. Grades in the natural sciences yielded the highest correlations with expectancy estimates. Achievement test performance in mathematics tended to correlate most strongly of the four areas with expectancy.

Viewed as a group, the studies by Crandall and McGhee provide persuasive support for a positive relationship between a person's subjective belief about future success and actual academic competence across a variety of task and subject matter. The extent of the relationship is shown to vary as a function of the degree of relatedness between the information from which expectancies are generated and the nature of the dependent measure of performance. Progressively stronger relationships were arrived at as this discrepancy decreased. Thus, expectancies based on the angle-matching task more closely approximated intellectual performance when
experimenter provided an intellectual set (experiment #2) than a perceptual set (experiment #1). This corroborates Dean's (1960) findings that correlations between expectancy statements on two tasks were significantly higher when definitions of the tasks were similar than when the definitions were different.

In addition, expectancies proved more powerfully predictive of subsequent performance for studies in which criterion measures more nearly duplicated anticipated reinforcements of the actual outcomes. The results then are consistent with the process of generalization gradency postulated by social learning, that is, along the lines of perceived similarity of reinforcements (Jessor, 1954; Chance, 1959).

Estimations of future success were also shown to be mediated by the amount of directly relevant past experience in the situation. Stronger relationships between expectancy and outcome were thus obtained in the fifth study in which students had received some feedback on work in progress than in the fourth study in which expectancies were obtained prior to any feedback on course work. This bears out social learning theory notions of the interplay of specific expectancies, generalized expectancies, and the relative novelty of the situation. At this juncture it should be cautioned that the research cited has yet to demonstrate a causal relationship between success or failure and expectancies. Two intriguing questions may be posed. First, does prior experience engen-
nder changes in one's expectations of future success? Sec-
ondly, is there a causal relationship between an individual's
expectancies for success and subsequent performance?

Crandall (1951, 1963) and Crandall, Good, and Crandall
(1964) offer compelling evidence that expectancies for future
success may be manipulated by positive and negative feedback
on preceding tasks. The earliest study investigated the ef-
fec ts of negative feedback or failure. Two sets of nine
thematic apperception pictures served as stimulus items for
measuring expectancies. Two groups of male college students
were presented with the first set then half were assigned to
an experimental group in which they were asked to perform
tasks supposedly diagnostic of general athletic ability.
Experimenters gave false negative feedback via fictitious
norms such that no subject in this group scored above the
20th percentile. Subjects in the control group received nei-
ther the task nor feedback of any kind. The second set of
cards was then presented to all subjects. Crandall reported
that subjects given failure feedback on their task perform-
ance scored more negatively on the expectancy measure than
control subjects.

Crandall (1963) extended the effects of previous feed-
tback to positive as well as negative outcomes in a study of
junior high school males. Subjects divided into three treat-
ment groups were given a novel angle-matching task designed
so that subjects were dependent solely on experimenter feed-
back to determine the correctness of their responses. The first group received positive feedback, the second group received negative feedback, and the last group received no feedback on their angle-matching performance. Crandall compared pre- and post-test measures of expectancy for success and found that subjects in the positive reinforcement condition had raised their expectancies significantly in contrast to those in the negative reinforcement condition who had lowered their expectancies significantly. A replication study by Crandall, Good, and Crandall (1964) corroborated these results.

Feather's (1966) data also support the idea that expectancies are mediated by previous reinforcement sequences. He manipulated success or failure of two groups of female undergraduates by presenting half of the subjects with 15 anagrams in which the first five were insoluble and presenting the other half with 15 anagrams in which the first five were very easy. The remaining 10 anagrams were identical for both groups and all 10 were of intermediate difficulty. Expectancy for success ratings taken prior to each anagram showed that subjects who had experienced initial failure with insoluble anagrams had lower expectancies for success than those who had been given easy anagrams with which to start the task. A later study by Feather and Saville (1967) confirmed the role of success and failure in changing expectancies for success.
The group of studies by Crandall and Feather demonstrate that an individual's past experience predictably influences his/her expectancies for future success. Research cited below establishes a link between expectancies for success and subsequent performance, as proposed by Rotter (1954), Atkinson (1957), and Crandall and colleagues (Crandall, Katkovsky, & Preston, 1960). This formulation conceptualizes expectancies as a motivational variable and implies that a high expectancy for success facilitates future performance and increases the likelihood of success. One anticipates, therefore, that a variety of facilitative behaviors are influenced by an individual's expectancies for future performance. Among these are the amount of approach behavior toward a relevant goal and persistence on the task.

Crandall, Katkovsky and Preston (1962) found that time spent on intellectual tasks is a function of expectancies for success in related achievement situations. First, second and third grade girls and boys were asked to estimate their expectancies for successful performance on two successive intellectual tasks. The children were then observed in a free play situation in which a variety of activities, some of which were intellectual, were available. For boys, expectancies for success derived from the two experimental tasks were positively related to amount of time and intensity of effort on intellectual activities in free play.

Battle (1965) extended the above results to females as
well as males. She found that for high school students persistence on a difficult task was predicted by other expectations for success. Subjects indicated their expectancies for success in a mathematics course. Participants in the study were then asked to solve a difficult mathematical problem. No subject was able to complete the problem. Subjects who had high levels of expectancy for success did, however, spend more time working on the problem, thus demonstrating a positive relationship between expectancy for success and task persistence. Results consistent with Battle's data are reported by Feather (1961, 1963). In his studies college-aged subjects with high expectancies for success persisted longer on an insoluble task than those with low initial expectations.

Tyler (1958) tested subjects on a complex conceptual task requiring that they determine the pattern by which an experimenter flashed a series of lights. The pattern was sufficiently difficult as to obviate the possibility of success during the first 30 trials. Two groups were given differential verbal reinforcement during these initial trials. The group received either encouraging statements or discouraging statements over the course of training trials. Fifty test trials followed a hint regarding the pattern solution. No verbal statements were made by the experimenter during test trials. As predicted, significantly more subjects in the positive feedback group solved the problem compared to
those in the negative feedback group. Tyler concluded that expectations established by feedback during training trials influenced subsequent performances.

Feather (1966) offered persuasive evidence that both performance and expectancies are mediated by prior experience. Half of the subjects in his study worked on five insoluble anagrams while the remainder worked on five simple anagrams. Subjects' performance on the same ten anagrams was then contrasted. Feather discovered that subjects provided with initial success experience raised their expectations for success and performed significantly better on the criterion anagrams than subjects in the failure group.

Evidently, expectancies for success generalize across situations, vary systematically as a function of past experience, and are predictive of differential subsequent cognitive behavior. One may reasonably characterize expectancy for success as a factor influencing optimal intellectual functioning.

As noted earlier, the expectancy construct is not viewed as unitary. Expectancy not only varies in level of specificity, or alternatively, in degree of generalization, but also in the nature of the salient dimension. In reviewing both the internal-external construct and the success-failure dimension, a number of similarities become clear. Most basically, both concepts render cognitive functioning differentially predictable. Internal-external beliefs have been shown to
have important implications for verbal conditioning and extinction, information gathering, utilization of information, task persistence, responses to success or failure, preference for activities, task performance, academic achievement and satisfaction derived from them. Expectations about the outcome of events have some predictable consequences for future behavior in some strikingly similar ways, particularly regarding task persistence, task performance, and academic competence. Further, expectancies about contingency of reinforcement and the valence of anticipated reinforcement following behavior generalize across situations.

Expectancies may be consistently and experimentally manipulated as a function of similarity of reinforcement thereby providing valuable empirical support for the assumption that the subjective probability of events is a reliable and ubiquitous predictor of behavior. Rarely, however, have investigators examined the joint effects of the two dimensions of expectancy presently under consideration. James and Rotter (1958), Phares (1957), Cromwell (1967), Davis and Davis (1972), and Wolk and Ducette (1973) are among the few who have attended to both dimensions. As expectancies became increasingly regarded as an individual difference rather than a situational variable, social learning theorists have paid proportionally less attention to the interaction of situational parameters of human learning and motivation. Quite the reverse is true of animal learning literature.
Of special interest and relevance for the present investigation is the extensive programmatic research of Seligman and his colleagues. Their recent efforts to bridge the gap between human and infrahuman learning processes reawaken classical controversies over the viability of invoking internal mediational processes like expectancies. Exploration of the convergence of these heretofore separate bodies of literature appears below.

Learned Helplessness

Extensive investigation of shuttle box escape-avoidance training with experimentally naive dogs has established a typical behavioral pattern. Initial onset of traumatic shock is accompanied by frantic running about, howling, defecating, and urinating until the dog by chance leaps across the barrier and thereby escapes the shock. Gradually, over trials, the dogs learn to escape more quickly until finally they learn to avoid shock altogether.

Overmier and Seligman (1967) and Seligman and Maier (1967) imposed a variation on the escape-avoidance theme and discovered dramatic differences in the typical pattern described above. Their procedure precedes standard escape-avoidance training. The animal is strapped into a hammock and given 64 random, unsignalled, inescapable electric shocks of five seconds duration. One day later, 10 signalled escape-avoidance training trials are given in the shuttlebox.
The conditioned stimulus (CS) precedes shock onset (US) by 10 seconds and remains on throughout the trial. Jumping the shoulder-high barrier within the CS-US interval terminates the CS and no shock occurs. Failure to jump the barrier results in persistent shock for the remainder of a 60-second trial. A group of dogs restrained in a Pavlovian hammock and pretreated with inescapable shock do not learn to escape shock by jumping the barrier in subsequent avoidance training. Instead these dogs soon cease to run and howl and sit or lie quietly whining until shock terminates. They fail to acquire the escape response on succeeding trials, passively accepting as much shock as the experimenter chooses to administer. In the rare case that dogs pretreated with uncontrollable shock do cross the barrier early in escape-avoidance training, they quickly revert to passive acceptance. The dogs seem to fail to recognize the contingency between barrier jumping and shock termination.

Seligman has labelled behaviors of the pretreated animals "learned helplessness" which is delineated by two behaviors: first, the failure or retardation of the initiation of responses to escape shock and second, the failure to learn the contingency between responding and termination of aversive stimulation.

A series of studies by Seligman and his associates were designed to test alternative hypotheses about the origin of the cognitive and motivational deficits exhibited by the ex-
experimental animals and to further clarify the nature of their impairment. Overmeier and Seligman (1967) varied the duration and density of shock during pretreatment trials and found corresponding increments in the degree of interference engendered in the dogs. Higher densities of shock resulted in greater performance deficits. In addition, raising the motivation for acquisition of the appropriate instrumental response during escape-avoidance training by increasing shock intensity did attenuate interference. This indicated not only that motivational factors were at work, but also weakened an alternative explanation that shock pretreatment produced animals who had become adapted to shock. In a third experiment, experimentally induced learned helplessness diminished with the passage of time. After 48 hours animals recovered the ability to acquire the appropriate response.

The transience of the interference effect raised severest criticism from opponents of the learned helplessness paradigm. Weiss, Stone, and Harrell (1970) and Miller and Weiss (1969) suggest that neurochemical processes account better for the phenomenon and demonstrated that depletion of norepinephrine correlates with the behavioral effects of shock pre-treatment in rats. Rats who could control shock showed elevated levels of norepinephrine. They argued that the transience of so-called helplessness is more accurately described by a temporary physiological response than a learning hypothesis.
Seligman and Groves (1970) countered the neurotransmitter hypothesis by producing non-transient learned helplessness. They administered multiple sessions of unescapable shock and found enduring deficits in instrumental responding. Work by Seligman, Maier, and Geer (1968) are also consistent with their results.

Maier (1970) investigated the hypothesis that so-called learned helplessness might be attributable to incompatibility of skeletal-motor responses as a function of experiencing uncontrollable aversive stimulation. He differentially trained three groups of dogs. The first group, the passive differential reinforcement of other behavior (Passive DRO) were taught to escape shock by inhibiting head movements normally elicited by shock. A yoked control group received the same amount of inescapable shock. A third group, the naive control group, received no harness experience. All dogs were then given escape avoidance training in a shuttlebox. Maier found that both dogs in passive DRO and naive conditions learned to escape, in contrast to yoked subjects, who did not learn to escape. The study contradicts the notion that incompatibility of skeletal-motor responses or training per se account for decrements in performance and provides additional indication of motivational deficits. Maier concluded that control of reinforcement is the salient influencing factor.

Evidence from other areas of current animal learning literature substantiate the claim that the independence be-
tween events retards associative learning. Seligman (1968) reported that presenting stimulus and shock independently to rats retarded later learning that a second stimulus signal-led shock. Bresnahan (1969) and Thomas, Freeman, Svinicki, Burr, and Lyon (1970) showed that rats were able to discriminate along other dimensions. McIntosh (1965) arrived at similar conclusions in a review of a substantial body of discrimination-learning research. Gamzu and Williams (1971) reported that independence of a lighted key and grain retard the acquisition of autoshaping in pigeons. Apparently then, learning that responding and reinforcement are independent establishes a cognitive set such that in the future fewer attempts to control reinforcement are initiated and learning the contingency between successful responding and reinforcement is impaired.

Anderson and co-workers disagree with Seligman's interpretations. They advance a generalized internal-cue mediational model that assumes the sensory effects produced by preshock persist through time to serve as conditioned stimuli for a subsequent pre-shock produced pain response. The original pain response is thought to act in the same capacity as any stimulus that might contiguously be paired with an aversive event.

Anderson's hypothesis is weakened, however, by two findings. First, Maier and Testa (1975) observed interference in rats when the test situation required two shuttling re-
responses for shock termination (FR-2), but not when the requirement was only one shuttle response (FR-1). One would be hard pressed to explain this by Anderson's model. Further, learned helplessness has now been demonstrated employing aversive, but cognitive stimulation (failure) in addition to painful physically aversive shock.

Nonetheless, investigators of learned helplessness have succeeded in generalizing the consequences of uncontrollable shock across a number of aversive stimuli. Interference with the acquisition of escape responding can be produced by inescapable tumbling (Anderson & Paden, 1966), loud noises (Hiroto, 1974), passivity from defeat in fighting (Kahn, 1951), or restraint (Richter, 1957).

The learned helplessness phenomenon is not restricted to dogs. Numerous investigators report deficits in escape or avoidance learning following experience with uncontrollable shock in rats (Mowrer, 1940; Dinsmoor & Campbell, 1956a, 1956b; Dinsmoor, 1958). Seward and Humphrey (1967) demonstrated learned helplessness in cats. Studies of fish have produced similar behavioral consequences of the helplessness manipulation (Behrend & Bitterman, 1963; Pinckney, 1967; Padilla, Padilla, Ketterer, & Giacalone, 1970).

The pervasiveness of learned helplessness in infrahuman subjects then is quite apparent. Currently, attention is focusing on the relationship between uncontrollable trauma and its manifestations on human behavior. Thornton and Jacobs
(1971) were the first to explore the implications of the learned helplessness paradigm for human subjects. They solicited volunteers from an introductory psychology class and assigned them to eight groups differing in shock contingency. Half of the groups received a fixed level of shock while the other half received a variable shock level. All subjects were instructed that their task was to depress the button on a display board corresponding vertically to a set of stimulus lights. Subjects in the controllable condition (ERT) were also told about the contingency between shock and slow or incorrect responding. The yoked uncontrollable condition (YRT) were informed that shock would be administered unrelated to the task performance. Additionally, half of the subjects in each group were told that they would receive either a self-selected fixed level (f) or a variable level (v) of shock ranging from low to moderate intensity. All subjects were allowed thirty training trials and ten test trials. Although Thornton and Jacob's results were equivocal in some respects, they found support for the learned helplessness hypotheses with variable shock levels.

Hiroto (1974) refined human analogue study of learned helplessness. Additionally, he also examined the relationship between this model and expectancies for internal versus external control of reinforcement. Hiroto argued that learning the independence between responding and reinforcement is conceptually similar to a belief in external control. He
randomly assigned 96 college students to one of three treatment groups and one of two instructional set groups with each of the cells counterbalanced for sex and locus of control orientation. Two groups of subjects were seated before an apparatus out of which protruded a manipulandum. They were told that from time to time they would hear a loud tone. Their task was to find a way to terminate the tone. Subsequently both groups received 30 unsignalled 5-second trials with a mean intertrial interval of 20 seconds. Escape was possible and contingent in the first group. The second group received unavoidable, inescapable pretreatment. A third group, the control condition, was not exposed to pretreatment, receiving only the test trials with the manipulandum. All subjects were then tested on 18 10-second trials, signalled by a red light which preceded the auditory stimulus by 5 seconds and terminated with the onset of tone. Within each of the three groups, instructional set was varied prior to test trials. Half of each group were presented with "chance" instructions indicating that the experimenter controlled the problem solution making their task essentially a guessing game. Subjects given the skill instructional set were informed that success on the task was dependent on their skill and ability, so that they potentially controlled the situation. Hiroto found that subjects in the inescapable pretreatment group obtained longer response latency scores and more failures than either of the other two groups of subjects.
Subjects given escapable pretreatment or no pretreatment did not differ on subsequent test trials. Hiroto also reported a main effect for locus of control. Externals were slower than internals to respond regardless of pretreatment or instructional set although there were no significant differences for escape-acquisition or failure-to-escape measures. Results of the chance versus skill instructional set revealed that chance set subjects had longer latencies and depressed avoidance responding compared to skill set subjects. Instructional set, however, did not influence escape acquisition or failures to escape.

In summary, Hiroto not only makes a number of interesting points but also poses several intriguing questions. First, learned helplessness can be experimentally produced in human subjects. He dismissed equivocal findings in the study by Thornton and Jacobs by attributing them to the confounding of instructional set with inescapability in the pretreatment. Additionally, Thornton and Jacobs pretreated subjects with unavoidable-escapable shock rather than unavoidable and unescapable shock as the model demands. Secondly, Hiroto revealed a relationship between learned helplessness pretreatment, external locus of control, and specific external expectancies imposed by a chance instructional set. The parallel effects of these variables suggests that a single process may underlie learned helplessness—the expectancy that responding and reinforcement are independent. Moreover, there
is reason to hypothesize that generalized and specific expectancies interact in additive fashion and mediate subsequent performance.

Two recent investigations generalize learned helplessness to noninstrumental responding in human subjects both within and across the pretreatment-test task sequence. Hiroto and Seligman (1975) conducted four experiments simultaneously. Subjects were placed in one of the following conditions: a) pretreatment with inescapable, escapable, or control aversive tone succeeded by shuttlebox escape testing; b) pretreatment with soluble, insoluble, or control discrimination problems followed by an anagram task; c) pretreatment with inescapable, escapable, or control aversive tone followed by an anagram task; or d) pretreatment with insoluble, soluble, or control discrimination problems followed by shuttlebox escape testing. All four experiments produced failure to escape and to solve anagrams in inescapability and insolubility pretreatments respectively. In addition to replication of Hiroto's (1974) work, Hiroto and Seligman demonstrated that learned helplessness can be produced within cognitive tasks (soluble discrimination problems— anagram tasks) and cross-modally (insoluble discrimination→shuttle box escape and inescapable aversive tone→anagram task).

Confirmation of generalization to cognitive behaviors is provided by Klein, Fencil-Morse, and Seligman (1976) using identical discrimination and anagrams tasks. Subjects
were assigned to groups according to scores on the Beck Depression Inventory. The five treatment groups were a) solu-
ble problems, given no instructional set; b) insoluble prob-
lems given no instructional set; c) insoluble problems with
an internal attribution instructional set; d) insoluble prob-
lems with external attribution instructional set; and e) con-
trol group simply exposed to discrimination stimulus pat-
terns.

Instructional set was manipulated by differential nor-
mative task information offered to subjects prior to commen-
cing on discrimination problems. Internal attribution of
failure groups were shown a bar graph depicting generally
high success on the problems. External attribution of fail-
ure groups saw a bar graph indicating failure on the part of
most students to solve the problems. After completing the
four discrimination tasks, all subjects were then adminis-
tered the anagram task. Four dependent measures were ob-
tained for each subject on the anagram task: mean latency
response, trials to criterion for solution of the anagram
task (with a trial defined as the trial number of the third
successive trial with a response latency less than or equal
to 15 seconds), the number of failure to solve an anagram
(with a maximum of 60 seconds per anagram), and the condi-
tional probability of solving an anagram given that the prior
anagram was solved successfully.

Two major hypotheses of the learned helplessness modei
were supported by Klein et al. Unsoluble problems produced deleterious effects in anagram performance of nondepressed subjects as well as slight decrements in the performance of depressed subjects. No significant effect was found for instructional set in nondepressed subjects. The researchers attributed the latter finding to a "floor" effect since depressives typically perform poorly on anagram tasks regardless of pretreatment. They also reported that depressed controls responded in ways parallel to subjects exposed to the helplessness pretreatment thus substantiating Seligman's claims that learned helplessness provides a viable model for reactive depression in humans. Klein et al. concluded that failure itself is an insufficient condition for helplessness. Only failure that leads to a decreased belief in personal competence produces learned helplessness.

Current investigations of the motivational consequences of success and failure include the role of attribution of responsibility for outcomes (Weiner, Frieze, Kubla, Reed, Rest, & Rosenbaum, 1971). Researchers using the causal attribution paradigm consistently report differential attribution for success and failure. Nicholls (1975) and Luganbuhl, Crowe, and Kahan (1975) reported that success more than failure is attributed to the unstable internal factor (effort) rather than a stable internal factor (ability), unstable external factor (luck), or stable external factor (task difficulty). Although the stability dimension was not significantly re-
lated to expectancies for success, Reimer (1975) found that successful subjects who held internal attributional beliefs reported more positive affect than successful subjects who held external attributional beliefs. The studies cited above support and extend the conclusion of Klein et al. that only the interaction of failure and disbelief in one's own effectiveness is not only debilitating but also depressing.

Dweck and Repucci (1973) found that external children, who assumed less responsibility for outcomes, performed more poorly than internals when they must persist in tasks after prolonged noncontingent failure. Additionally, Dweck (1975) reported more effective alleviation of performance decrements in subjects explicitly instructed in the relationship between effort and outcome than in subjects given only success experience. Roth and Bootzin (1974) observed, however, that "helpless" college students initiated more controlling behavior over an aversive event following a learned helplessness pretreatment procedure and experimentally induced expectancies of external control. Resolution of the issue awaits clarification of the situational parameters and their interaction across subject populations and personality attributes.

Seligman (1975) has compared behaviors evoked by pretreatment with uncontrollable aversive stimulation to commonly agreed upon behavioral concommitants of reactive depression (depressive symptomatology). According to his model,
"depression denotes a passive individual with negative cognitive sets about the effects of their own actions" (p. 146).

Gatchel, Paulus, and Maples (1975) investigated the relationship between learned helplessness and self-reported affect. Subjects exposed to unescapable aversive tones subsequently exhibited performance decrements on an anagram task when compared with control group subjects who had been pre-treated with escapable aversive tones. The learned helpless subjects reported themselves to be more depressed, anxious, and hostile as measured by the Multiple Affect Adjective Checklist than the subjects in the control group. The results were interpreted as supportive of Seligman's model of depression.

Klein and Seligman (1976) found that both subjects taught helplessness as well as depressed subjects showed smaller changes in expectancy for success in skill-defined tasks than nonhelpless or nondepressed subjects. As predicted, neither learned helpless subjects' nor depressives' expectancy changes were systematically related on a chance defined task. In Klein and Seligman's view, the data support the claim that uncontrollable events precipitate distorted perceptions of response-reinforcement independence in non-depressives. The inaccurate perceptions are, in turn, responsible for performance deficits parallel to those found in naturally-occurring depression.

Seligman regards earlier learning theories like those of
Ferster (1966), Kaufman and Rosenblum (1967), McKinney and Bunney (1969), and Liberman and Raskin (1971) as limited, though compatible with learned helplessness assumptions. They postulate that depression is caused by extinction processes. Seligman noted that loss of reinforcers, as experienced in the death of a loved one, can be considered a special case of removing the contingencies between responding and reinforcement. He points out that reinforcement with probabilities greater than zero, or in extinction, may still be presented independent of responding and be perceived as independent. Lewinsohn (1972) offered a similar revision of the extinction interpretation, suggesting that low rates of response-contingent reinforcement precipitated depressive symptomatology.

Several researchers found external locus of control to be correlated with reports of depressive feelings (Abramowitz, 1969; Calhoun, Cheney, & Dawes, 1974; Hale, 1975a; Tennen, 1976; Warehime & Woodson, 1971; Goss & Morosco, 1970). Williams and Nickels (1969) found externality to be related to suicide-proneness. The apparent interaction between items on the Rotter IE scale and item mood level (Lamont, 1972a, 1972b), however, mitigate the possibility of assuming a clear-cut relationship. The lack of support for a simple relationship between externality and behavioral analogues of depression is also noted by Miller and Seligman (1973). A more complex relationship as suggested by Rotter (1966) and Phares
(1972) between the locus of control constraint and depression is likely.

Passivity or retarded behavior is generally characteristic of depressives (Beck, 1967; Grinker et al., 1961; Mendels, 1970). Lewinsohn (1971) documented that depressed patients initiate fewer verbal social actions and were slower to respond to the overtures of others. Ekman (1971) observed non-verbal communication in depressed patients. One category of spontaneous hand motions, "illustrators" related to the intent of the conversation were depleted compared to nondepressives, while "adaptors", involuntary adjustive hand motions like hand rubbing, were not reduced. Progress in remediation of depression produced concurrent increases in illustrators and decreases in adaptors.

In the investigation by Klein et al. cited earlier, depressives performed in complementary ways to subjects administered noncontingent failure feedback. Their performances were characterized by longer latencies, although actual performance was only slightly adversely affected.

Loeb, Beck, and Diggory (1971) concurred. They tested depressed and nondepressed patients in a card-sorting task and manipulated success-failure feedback unobtrusively. No significant differences in decrements of performance were found between depressives and nondepressives, though latency was not assessed independently of task performance. The investigator did, however, discover that depressed subjects in-
dicated lower probability of success estimates as a function of failure feedback than nondepressed subjects. Of interest is the fact that Botwinick and Thompson (1967) found no evidence of a relationship between depression and reaction times. Hale (1976) and Tennen (1976), however, found that the performance of depressives was inferior to that of nondepressives.

Beck (1967) regards passive and retarded behavior as cardinal features of depression. He attributes the posture to negative expectations about their future success. Beck commented:

The loss of spontaneous motivation, or paralysis of the will, has been considered a symptom par excellence of depression in the classical literature. The loss of motivation may be viewed as the result of the patient's hopelessness and pessimism. As long as he expects a negative outcome for any course of action, he is stripped of any internal stimulation to do anything (Beck, p. 263).

Other theorists are in agreement about the centrality of the hopelessness/helplessness syndrome associated with depression (Bibring, 1953; Grinker et al., 1961; Mendels, 1970). Loeb, Beck, Diggory, and Tuthill (1967) demonstrated that depressives actually do underestimate their actual performances.

Although evidence is not entirely conclusive, apparently depressives both expect to and actually do perform more poorly than nondepressives. These results confirm the assump-
tions of both the learned helplessness model and social learning theory. Prior experiences of uncontrollable failure seem likely to lower expectancies for success and debilitate performance. Conversely, controllability and success are likely to raise expectancies for success and facilitate performance. Inspite of similarities between the performance of depressives, externals, and subjects who have learned helplessness, transient experimentally-induced states may not be equated with long-standing, multi-determined depression. Either model, learned helplessness or social learning theory, should therefore be cautiously applied.

Statement of the Problem

Theoretically and empirically, expectancies about behavior-reinforcement contingencies have become a central focus in social learning theory and have significant implications for the learned helplessness model. Social learning theorists have demonstrated that prior experiences of success or failure interact with perceived contingencies of reinforcement to produce reliable changes in expectancy and performance. The Crandalls and their co-workers consistently found expectancies for success and actual performance positively and significantly related to prior expectancies for success and previous performance (e.g. Crandall, Katkovsky, & Crandall, 1965; Crandall, Katkovsky, & Preston, 1962; McGhee & Crandall, 1968).
The internal-external dimension of expectancies has also been suggested as a predictor of subsequent behavior. Subjects given internal situational cues or those holding generalized expectancies for internal control of reinforcement tended to adjust expectancies appropriately; upward following success and downward following failure, to a greater extent than externally-oriented subjects (Feather, 1968; Phares, 1957; Lefcourt, 1967). Furthermore, internals were likely to show more behaviors consistent with successful performance, notably, information-seeking, task persistence, retention, and adaptive cognitive strategies (e.g. Davis & Phares, 1967; Lefcourt & Wine, 1969; Ducette & Wolk, 1972; Seeman & Evans, 1962). A positive and significant relationship between internality and actual academic achievement, particularly for males, is also reported (Chance, 1965; Coleman et al., 1966; Crandall, Katkovsky, & Crandall, 1965; Crandall, Katkovsky, & Preston, 1962; McOhee & Crandall, 1968; Nowicki & Strickland, 1973).

In a somewhat similar fashion, Seligman and his associates, while dealing exclusively with aversive events, have shown that the experience of noncontingent failure yields decrements in performance. Researchers in the area of learned helplessness consider a belief in external control of reinforcement as conceptually similar to the effects of helplessness pretreatment. Recent attempts to establish empirical links between learned helplessness and locus of control...
have attained moderate success (Hiroto & Seligman, 1975; Klein et al., 1976).

Seligman and his group, however, have not examined the role of noncontingent success or contingent failure on subsequent task performance. Contrasting only contingent success and noncontingent failure confounds two important dimensions of reinforcement.

In the present study internal versus external locus of control and success versus failure outcomes are conceptualized as separate, but related dimensions of reinforcement. Expectancies may be regarded as cognitive variables mediating the influence of prior experience on subsequent performance. In a given circumstance then, an individual may hold one of four combinations of expectancies for impending reinforcement: a) positive and contingent, b) positive and independent, c) negative and contingent, or d) negative and independent with respect to his/her behavior.

Theoretically, this formulation is parallel to four possibilities generated by Seligman's model. Stimulation may be a) positive and controllable, b) positive and uncontrollable, c) aversive and controllable, or d) aversive and uncontrollable. To date, research conducted by Seligman and his colleagues has omitted the positive-uncontrollable condition. In the one investigation which included the aversive-controllable condition, Klein et al. (1976) concluded that failure alone was insufficient to cause debilitation of perform-
Advocates of the learned helplessness model have not systematically assessed the effects of the helplessness model paradigm on expectancies for success.

In the present study, contingencies of reinforcement and success-failure outcomes are systematically and independently manipulated in an attempt to clarify the effects of prior experience on subsequent performance and expectancies for success. The relative influence of generalized expectancies for success and locus of control is also investigated. Secondly, the present study tests Seligman's (1975) hypothesis that decrements in performance are linearly related to actual reinforcement, a notion which has received limited support (Dweck & Repucci, 1973; Rescorla & Skucy, 1969).

A schematic diagram of the present experiment is presented in Figure 1. Subjects are solicited from introductory psychology classes at the University of Massachusetts and are administered the Generalized Expectancy for Success Scale (Hale & Fiebel, 1976), Collins (1974) version of the Rotter (1966) Internal-External Control of Reinforcement Scale (IE), and the Marlowe-Crowne Social Desirability Scale (MC' SDS, Crowne & Marlowe, 1960). The subject information sheet as well as these paper and pencil measures are presented in Appendices 1-4 respectively. Initially subjects will be randomly assigned to one of three groups: contingent feedback, noncontingent feedback, or control group given no feedback. Subjects in experimental groups will be asked to indicate their expectancies for success for the task to be presented on the specific expectancy
**Figure 1. Flow chart**

<table>
<thead>
<tr>
<th>PRETEST</th>
<th>TREATMENT PHASE</th>
<th>FEEDBACK</th>
<th>CRITERION PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>Failure</td>
<td>Success</td>
<td>Specific Expectancy B</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>0 1 2 3 4</td>
<td>(number of problems correct out of 4)</td>
<td>Criterion Task Performance</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>Contingent</td>
<td>Norms Chart</td>
<td>Trials to criterion</td>
</tr>
<tr>
<td>Specific Expectancy A</td>
<td>Noncontingent</td>
<td></td>
<td>Solutions to criterion</td>
</tr>
<tr>
<td></td>
<td>Control (No treatment feedback)</td>
<td></td>
<td>Failures</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Mean Latency</td>
</tr>
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</table>
for success scale (SPEXA, see Appendix 5). Four helplessness pretreatment discrimination tasks will be presented to the two feedback experimental conditions. Subjects in the contingent condition will receive feedback appropriate to the correctness of their responses (right or wrong). Subjects in the noncontingent group will receive performance feedback, regardless of actual performance, based on a randomized order of feedback provided previously to contingently reinforced subjects. Thus, subjects in contingent and noncontingent conditions are yoked with respect to the percentage of reinforcement they will receive. Following the pretreatment, subjects will compare their performance on the four tasks to a normal frequency distribution with a mean of 2 correct solutions purported to represent the actual performance of their peers. Success, therefore, is operationally defined as 3 or 4 correct solutions while failure is defined as 0 or 1 correct solutions. Subjects scoring 2 correct solutions are included in order to investigate the linearity hypothesis. Control group subjects are exposed to the task materials, but neither perform the task nor receive any feedback. All subjects are then administered a second specific expectancy for success measure, SPEX B, for anticipated performance on a second task. The second task, a series of anagrams, is then presented from which criterion performance and latency measures are obtained. Prior to debriefing, all subjects are requested to complete a brief questionnaire designed to assess the degree of subjective satisfaction with performance, the believability of the procedure, and open-
nded assessment of attributions for their performance.

Based on consistent findings of social learning theorists, subjects in the present study who receive contingent, controllable, skill-determined treatment feedback should reliably and predictably have higher specific expectancies for success following success and lower specific expectancies for success following failure than control subjects. Subjects who receive noncontingent, uncontrollable, random treatment feedback should not significantly alter their expectancies upward following success or downward following failure. Therefore, expectancies of subjects in the noncontingent conditions should not differ from those of subjects in the control condition.

With regard to performance then, contingent reinforcement should heighten or sharpen the effects of success or failure. Since expectancies are postulated by social learning theorists as major determinants of behavior potential, subsequent performance should be consonant with one's expectancies.

On the other hand, Seligman and his colleagues have demonstrated that noncontingent failure is debilitating in comparison to contingent success and controls. They also contend that only failure which is perceived as uncontrollable produces decrements in performance. This hypothesis contradicts the findings from social learning theory that both actual, ostensibly skill-determined failure as well as
low expectancies for success debilitate subsequent performance. Further, the effect of noncontingent success on subsequent performance is not clearly delineated by the learned helplessness model.

These inconsistencies currently limit the utility of both the learned helplessness and social learning models. Social learning theorists provide considerably more extensive data which integrate the cognitive and behavioral components. Therefore, in the present thesis predictions derived from social learning theory are adopted. Thus, success or failure feedback generated noncontingently should not prove salient in regard to reformulating expectancies for success or in either facilitating or debilitating subsequent performance. In other words, only contingent feedback provides information relevant for future expectancies for success and performance. Additionally, more prior experience with success versus failure should have an additive effect.

With respect to generalized expectancies, those for the success dimension, but not for the locus of control dimension, are expected to be positively correlated with initial specific expectancies among experimental groups and with control subjects' expectancies following treatment task exposure without feedback. The relationship between generalized and specific expectancies for the control group is expected to decrease as a function of treatment task feedback. The inclusion of a measure of generalized expectancy for control of
reinforcement as well as success will substantiate the discriminant validity of the latter. Generalized expectancies for success and control of reinforcement are not anticipated, however, to bear significant relationships to performance due to the overriding influence of prior experience with the treatment task and specific expectancies presumably generated as a consequence of this prior experience.

Stated more formally then, the following predictions are made for subjects in the present study.

1. Subjects receiving contingent success will have higher specific expectancies for success and perform better with respect to the control group.

2. Subjects receiving noncontingent success will have lower expectancies for success and perform more poorly than subjects receiving contingent success, but will have neither significantly different specific expectancies for success nor performance than subjects in the control group.

3. Subjects receiving noncontingent failure will have lower expectancies for success, will perform more poorly than subjects in the contingent success, but will not differ significantly from noncontingent success, and control groups.

4. Subjects receiving contingent failure will have lower expectancies for success and perform more poorly than subjects in the control group.
5. For subjects in experimental groups, generalized expectancies for success will be positively and significantly related to initial measures of specific expectancy and become less related on a subsequent measure following treatment task feedback.

6. For subjects in the control group, who did not receive the initial pre-treatment measure of specific expectancies for success, generalized expectancies for success will be positively and significantly related to a measure of specific expectancy for success following exposure to the treatment task without feedback.

7. The effects of the treatment task on subsequent test task performance will bear a linear relationship to the actual relative amount of success versus failure such that the greater the proportion of success, the greater the facilitation of subsequent performance.
CHAPTER II

Method

Subjects

One hundred-twelve female volunteers were solicited from an introductory psychology class of the University of Massachusetts by the principal investigator and a male colleague who did not participate in subsequent portions of the study. Students at the University are predominantly Caucasian, middle-class state residents. Subjects received bonus course credits for their participation. Only one sex was used in the study in order to simplify the design. Females were used so that previous ambiguous findings with respect to the interaction of sex of experimenter and sex of subject may be controlled and because female subjects were more accessible.

Experimenters

Two male and two female advanced undergraduate psychology majors served as experimenters. They are Caucasian and range in age from early twenties to mid thirties. Each experimenter was tutored in administration of the experiment by the principal investigator. They then practiced with each other and ran pilot subjects under the supervision of the principal investigator. All experimenters were uninformed as to the experimental question and the specific hypotheses.
Procedure

Volunteers were randomly assigned to one of four experimenters and then individually contacted, scheduled, and administered the experimental task. On arrival, subjects were assigned to one of three experimental groups in the fixed rotating order: contingent feedback (C), noncontingent feedback (N), or no feedback control (O). The sequence, C, N, O was repeated for 34 sets of 3 subjects each so that one-third of the total 102 subjects was assigned to each group.

Initially, the subject was greeted, escorted into the treatment room, and seated at a desk. The treatment room was equipped with a one-way mirror and an intercom system so that the subject could be seen and heard from the adjacent experimenter's room. Subjects were given a questionnaire packet and instructed to signal via the intercom when they had completed the packet. The experimenter then went to the experimenter room.

Pretest

The pretest questionnaire packet consisted of the following questionnaires in fixed order:

Information sheet. The subject's name, identification number, age, year in school, and grade point average were recorded on the sheet.

Generalized Expectancy for Success Scale (GES). The scale, originally conceptualized by Hale (1975b), is designed to assess an individual's belief that s/he will obtain positive reinforcement or attain desired goals.
The scale contains 30 items in Likert format. All items begin with the same stem phrase: "In the future I expect that I will..." which is printed at the top of each page. Seventeen items are phrased in the positive or success direction, while 13 items are phrased in the negative or failure direction. An example of a success item is: "...succeed in the projects I undertake." An example of a failure item is: "...deal poorly with emergency situations." Hale and Fibel (1976) reported a split-half reliability for odd versus even items of .90 for females and .91 for males using the Spearman-Brown correction formula. A correlation of .82 and .83 for females and males respectively was found between the first 15 items and the second 15 items also using the Spearman-Brown correction formula. A low, but significant correlation between the GES and the Marlowe-Crowne Social Desirability Scale for females (r = .25, p < .02), but not for males (r = .15, p < .10). Significant negative correlations with the Self-Rating Depression Scale, Beck Depression Inventory, and the Hopelessness Scale provide initial indication of construct validity. Further, subjects' GES scores were correlated negatively and significantly with the amount of suicidal ideation reported. Subjects with high GES scores had higher performance estimates on the level of Aspiration Board than did subjects with low GES scores. Test-retest reliability is reported as .83 overall, .89 for males, and .80 for females.
Collins Internal-External Control Scale (CIE). Collins (1974) converted Rotter's (1966) measure to a 46-item scale in Likert-type agree-disagree format. Collins' version allows the scale to be factor analyzed into four relatively orthogonal sub-scales: a) belief in a difficult world, b) belief in an unjust world, c) belief in a world governed by luck, d) belief that the world is politically unresponsive. Collins reported a very strong positive correlation \( r = .82 \) with the Rotter IE Scale and a strong similarity between factor structures of the Likert and forced-choice formats for a large sample of college undergraduates. Data on the reliability and validity of the Rotter IE scale is presented by Rotter (1966). Reported are test-retest reliability \( r = .49 \) to .83, internal consistency \( r = .65 \) to .79, correlations with intellectual measures \( r = .22 \) to .05, the Marlowe-Crowne Social Desirability Scale \( r = -.41 \) to -.12. The scale correlates satisfactorily with other IE assessment techniques. Relatively low correlations with intelligence provided indications of discriminant validity. Construct validity was demonstrated by correlations of IE scores and numerous behavioral criteria including alertness to relevant environment cues, utilization of cues for the improvement of environmental conditions, value placed on skill or achievement reinforcements and resistance to subtle attempts to influence him/her. Additional construct validation is reviewed by Joe (1971), Lefcourt (1966, 1972, 1976), and Phares (1973,
The Marlowe-Crowne Social Desirability Scale (MC SDS). Crowne and Marlowe (1960) present convergent validity with the widely used and accepted Edwards Personal Preference Schedule scale of social desirability as well as construct validity through the MMPI validity scales and corresponding negative correlations with clinical scales of the MMPI. Test-retest reliability is reported ($r = .89$) and internal consistency of .88 was obtained. The scale consists of 33 items answered true or false. Eighteen items are keyed true, 15 items are keyed false. High scores indicate high social desirability. Normative data for college students is provided by Crowne and Marlowe (1964). The present study includes this measure so that the possibly confounding effects of social desirability may be assessed and partialed out of subsequent analyses.

Specific Expectancy for Success Scale A (SPEXA). The scale consists of a series of 5 points along a continuum from not at all well (1) to very well (5). Subjects are asked to state how well they expect to do on the task that follows.

Subjects assigned to the control condition, group 0, were administered the identical packet with the omission of the final measure, SPEXA.
Treatment Phase

When subjects had completed the packet they were read the following instructions:

Please put the packet of questionnaires aside. Take the yellow booklet on the table and open it to the first card only. As you can see, the card has two patterns on it, one on the left side of the card and one on the right side of the card. Each pattern is composed of 4 different dimensions: letter, size of the letter, color of the letter, and border around the letter. Two values are associated with each dimension. For the dimension letter the two values are X and Y. For the dimension size the two values are small and large. For the dimension color the two values are red and green. For the dimension border the two values are circle and square. Thus the pattern on the left is composed of a small red X bordered by a circle while the pattern on the right is composed of a large green Y bordered by a square. Do you understand what I have just explained?

The discrimination treatment task is a series of 40 four-dimensional stimulus patterns adapted from Levine (1966) by Hiroto and Seligman (1975). Each of the four dimensions has two associated values: 1) letter (A or T), 2) letter color (shaded or unshaded), 3) letter size (large or small), and 4) type of border surrounding letter (circle or square). The patterns are drawn on 4 x 6 index cards which are bound into booklet form.

Contingent feedback group. Subjects assigned to either contingent or noncontingent feedback received the following instructions:
Part 1

I have arbitrarily chosen one of the values as the solution value to the problem—that is, either X, Y, small, large, red, green, circle, or square. One and only one of these values is the correct solution. The first five cards are a sample problem. For each card in the sample problem you are to choose a pattern, either the one on the left or the one on the right. Then tell me. I will answer either "correct" or "incorrect" depending on whether you have chosen the side which contains the value I have chosen as the solution. After you have done this for all the cards in a problem, it is possible to determine which value I have chosen as the solution to the problem. At the end of the problem I will ask you which value—X, Y, small, large, red, green, circle, or square is the solution and tell you whether you are correct or incorrect. Do you understand what you are supposed to do?

Subjects were then administered the sample problem. Four subjects who did not understand the instructions after having them repeated and/or failed the sample problem twice were dismissed. Their scores are not included in any portion of the data analysis. Subjects then totalled 98.

The following instructions were then given to each subject:

Part 2

The remaining 4 problems are similar but contain 10 cards each. Like the sample problem, each card has 2 patterns composed of 4 dimensions and 2 values associated with each dimension. This time, however, the dimensions and their values are: letter (A or T), size of the letter (small or large), shading of the letter (filled or unfilled), and border around the letter (circle or square). Remember one and only one of these values is the correct solution. I will tell you when to turn to the next card. After you have completed all 10 cards of the problem I will ask you to tell me the solution and I will
tell you whether you are correct or incorrect. Stop at the end of each problem. Now turn to the first card of the first problem and tell me which side you have chosen, left or right.

When contingent group subjects had completed the discrimination task, the experimenter tallied their actual score, the number of correct solutions out of 4 problems, and entered the treatment room with a norms chart, Specific Expectancy for Success Scale B (SPXB), and a blue book containing the anagram task.

The norms chart, a frequency distribution, purportedly depicts the performance on the discrimination task for large numbers of college students. The frequency distribution shows that roughly 80% of the students score 2 correct out of 4, while only 10% do as poorly as 0 or 1 correct or as well as 3 or 4. The experimenter stated:

Here is a graph which shows how college students like yourself have done on this task in the past. You got (_) problems correct out of the 4 problems. As you can see the majority of students get 2 of the 4 problems correct and very few do as poorly as 0 or 1 or as well as 3 or 4.

**Noncontingent feedback group.** Subjects assigned to the noncontingent feedback group received the identical pretest questionnaires, treatment task, and instructions as contingent subjects. Experimenter feedback to noncontingent subjects was, however, yoked to the previously run contingent subjects such that the yoked noncontingent subjects heard the
same proportion of "corrects" per problem and the same total number of problems correct as the previous contingent subject. The sequence of "correct" and "incorrect" feedback for noncontingents was a randomized order of the contingent feedback given to the previous subject. In this way the percentage of positive reinforcement both within a problem and across the 4 problems was equated, but feedback to the noncontingent group was independent of their responses.

Control-no feedback group. Individuals in the control group were administered all pretest questionnaires except the SPEXA. The treatment task and instructions for controls were the same up to treatment phase, part 2. At that point control subjects were told:

Please continue to study each pattern on each card, but wait for me to say "Go on to the next card" before turning. Be sure to turn only one card at a time. Begin.

Control subjects were allowed 5 seconds to examine each card, but were neither required to respond in any way nor given any feedback from the experimenter.

When control subjects completed the booklet the experimenter presented them with SPEXB and the blue book.

Criterion Phase

All groups of subjects were treated identically in this phase. The experimenter returned to the experimenter room
and delivered the following instructions:

Now I'm going to ask you to work on another task. Complete the form (SPEXB) and wait until I give you further instructions. Do not open the booklet until you are told to do so. [Pause]

You will be asked to solve some anagrams. As you know, anagrams are words with the letters scrambled. The problem for you is to unscramble the letters so they form an English word. When you've found the word, tell me what it is. There could be a pattern or principle by which to solve the anagrams, but that's up to you to figure out. Don't turn to the next card until I tell you to do so. Please be sure to turn only one card at a time. Now please turn to the first card and tell me the word as soon as you know it.

Subjects were allowed a maximum of 60 seconds for each of 20 words. The anagrams were devised and used by Hiroto and Seligman (1975). Each anagram was placed individually on a 4 x 6 laminated card. The words, selected from a list of five letter anagrams of moderately difficulty (Tresselt & Mayzner, 1966), consisted of 5 letters arranged in a standard sequence: 3-4-2-5-1. Thus the first letter of the solution word was the fifth letter of the anagram, the second letter of the solution word was the third letter of the anagram, and so on. The list of anagrams and their solution words is presented in Appendix 7.

Dependent measures. Four dependent measures were obtained from the anagram task. The four measures were:

a) the number of trials to criterion for solving the anagram pattern, operationalized as the trial number
of the third successive trial with a response latency of less than or equal to 15 seconds. For subjects who failed to reach the criterion the number was determined by calculating the earliest possible trial by which the subject could have reached the criterion. Thus a subject who did not solve any (consecutive) anagrams under the 15-second limit was scored 23, a subject who solved the 20th within 15 seconds was scored 22, and so on;

b) the number of solutions within 60 seconds prior to reaching criterion;

c) the total number of failures; and

d) the mean latency of response.

**Post Hoc Questionnaire**

All subjects were asked to complete a brief questionnaire designed to assess the degree of satisfaction with performance, the believability of the procedure, and open-ended assessment of attributions for their performance. The post hoc questionnaire is presented in Appendix 6. Following the questionnaire, all subjects were briefed as to the nature of the experiment. Questions from them were solicited by the experimenter, and the subject was asked not to discuss the experiment with friends or classmates. Subjects were then given their credit slips, thanked, and dismissed.
CHAPTER III

Results

Only one subject in the contingent condition and thus only one yoked noncontingent subject failed the treatment task based on the operationally defined criterion of either 0 or 1 out of the 4 problems correct. Since one subject in each of these two experimental conditions was insufficient to test any hypotheses about the effect of failure feedback, the data on these two subjects were discarded. All analyses were performed on the remaining 96 subjects.

Subjects ranged in age from 17 to 35 years old. The mean age for subjects was 19.39 and the modal age was 19. Over half the subjects, 52, were freshman. The remaining 44 subjects were almost equally distributed among sophomore (15), junior (14), and senior (15) level students. Grade point averages could only be computed for non-freshman in the sample. The total mean grade point average on a 4-point scale was 3.13 (n = 44). By group, the mean grade point averages were as follows: contingent-high success, 3.15 (n = 8), contingent-moderate success, 3.03 (n = 6), noncontingent-high success, 3.00 (n = 8), noncontingent-moderate success, 3.03 (n = 6), and control, 3.25 (n = 15). A t-test for independent samples of unequal size comparing the extreme low and extreme high group means in the sample (noncontingent-high success versus control conditions) did not reach significance.
Thus, for subjects for whom self-reported grades were available, groups did not differ in academic achievement as measured by grade point average.

Means and standard deviations of each dependent measure grouped by sex of experimenter are presented in Table 1. One way analyses of variance were performed to test for any unpredicted effects of the sex of experimenter on each of the five dependent measures. Results are presented in Table 2. No F-values reached significance. The data of all experimenters were therefore combined for subsequent analyses.

Two levels of success, either 3 or 4 problems correct out of the total 4 problems, were obtained in each of the two contingency conditions. A total of 38 subjects, 19 in the contingent condition and 19 yoked subjects in the noncontingent condition, received feedback that they had correctly solved all 4 problems (high success) of the treatment task. A total of 26 subjects, 13 in the contingent and 13 yoked subjects in the noncontingent condition, received feedback that they had correctly solved 3 of the 4 problems (moderate success). Means and standard deviations for subjects in the contingent conditions and noncontingent conditions for each of the five dependent measures are presented in Tables 3 and 4 respectively. Thirty-two subjects were in the control condition and had been exposed to the treatment task, but neither performed the task nor received any feedback. Means and standard deviations for subjects in the con-
Table 1
Means and Standard Deviations for Subjects' Scores on Dependent Measures for Male and Female Experimenters

<table>
<thead>
<tr>
<th>Dependent Measures</th>
<th>Experimenters</th>
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<tbody>
<tr>
<td></td>
<td>Males</td>
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<tr>
<td>Specific Expectancy B</td>
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<tr>
<td>Mean</td>
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<tr>
<td>Standard deviation</td>
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<tr>
<td>(n = 47)</td>
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<tr>
<td>Trials</td>
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</tr>
<tr>
<td>Mean</td>
<td>14.70</td>
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<tr>
<td>Standard deviation</td>
<td>6.89</td>
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<tr>
<td>(n = 47)</td>
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<tr>
<td>Solutions</td>
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<tr>
<td>Mean</td>
<td>4.43</td>
</tr>
<tr>
<td>Standard deviation</td>
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<tr>
<td>(n = 47)</td>
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<tr>
<td>Failures</td>
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<tr>
<td>Mean</td>
<td>6.97</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>5.00</td>
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<tr>
<td>(n = 47)</td>
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<tr>
<td>Mean Latency</td>
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<tr>
<td>Mean</td>
<td>29.50</td>
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<td>Standard deviation</td>
<td>15.61</td>
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<td>(n = 47)</td>
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Table 2
One-Way Analyses of Variance: Effect of Sex of Experiment on Dependent Measures

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<thead>
<tr>
<th>Source</th>
<th>df</th>
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<td>Specific Expectancy B</td>
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<td>.86</td>
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<td>Trials</td>
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<td>.91</td>
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<tr>
<td>Solutions</td>
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<td>3.42</td>
<td>.07</td>
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<tr>
<td>Failures</td>
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<td>.28</td>
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<tr>
<td>Mean Latency</td>
<td>1.94</td>
<td>.64</td>
<td>.43</td>
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<td>Dependent Measure</td>
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<td>Standard Deviation</td>
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<td>--------------------</td>
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<tr>
<td><strong>High Success (n = 19)</strong></td>
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<tr>
<td>Specific Expectancy B</td>
<td>4.31</td>
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<tr>
<td>Trials</td>
<td>13.05</td>
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<tr>
<td>Solutions</td>
<td>16.00</td>
<td>4.18</td>
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<tr>
<td>Failures</td>
<td>5.47</td>
<td>4.97</td>
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<tr>
<td>Mean Latency</td>
<td>24.27</td>
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<td><strong>Moderate Success (n = 13)</strong></td>
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<tr>
<td>Specific Expectancy B</td>
<td>4.31</td>
<td>.63</td>
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<tr>
<td>Trials</td>
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<td>Solutions</td>
<td>4.92</td>
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<tr>
<td>Failures</td>
<td>6.31</td>
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<tr>
<td>Mean Latency</td>
<td>27.20</td>
<td>16.78</td>
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<tr>
<td>Dependent Measure</td>
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<td>Standard Deviation</td>
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<td></td>
</tr>
<tr>
<td><strong>High Success (n = 19)</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>4.63</td>
<td>1.07</td>
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<tr>
<td>Trials</td>
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<tr>
<td>Solutions</td>
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</tr>
<tr>
<td>Failures</td>
<td>7.37</td>
<td>4.36</td>
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<tr>
<td>Mean Latency</td>
<td>30.50</td>
<td>15.02</td>
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<tr>
<td><strong>Moderate Success (n = 13)</strong></td>
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<tr>
<td>Specific Expectancy B</td>
<td>4.38</td>
<td>.77</td>
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<tr>
<td>Trials</td>
<td>12.97</td>
<td>6.59</td>
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</tr>
<tr>
<td>Solutions</td>
<td>5.15</td>
<td>3.67</td>
<td></td>
</tr>
<tr>
<td>Failures</td>
<td>5.70</td>
<td>4.91</td>
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</tr>
<tr>
<td>Mean Latency</td>
<td>24.85</td>
<td>16.10</td>
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</table>
trol condition and for the total ungrouped sample are presented in Table 5.

Two-way analyses of variance were performed on data from subjects in experimental conditions for each dependent measure to test for the effect of prior task contingencies of reinforcement and level of success on specific expectancies and subsequent task performance. Results of the 2 X 2 analyses of variance for cells of unequal size are presented in Table 6. Tests for the main effects of contingency and level of success did not reach significance for any dependent measure. Thus in contradiction to present hypotheses, specific expectancies for success and performance do not appear to differ significantly as a function of contingencies of reinforcement and level of success feedback.

Since no significant differences were found between subjects who had received different levels of success feedback, data were combined across the two levels within each of the two contingency conditions. Each condition then contained 32 subjects. Means and standard deviations for contingent and noncontingent conditions (ungrouped) are presented in Table 7. The effect of manipulating contingencies of reinforcement was then retested using the more powerful F-test for equal cell size on more degrees of freedom. Results of the one way analyses of variance are presented in Table 8. The test of a main effect for contingency on expectancies and performance did not reach significance. Thus, among subjects
Table 5
Means and Standard Deviations for Subjects' Scores on Dependent Measures Control Condition and Total Sample (Ungrouped)

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>Mean</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n = 32)</td>
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<tr>
<td>Specific Expectancy B (n = 31)</td>
<td>4.48</td>
<td>.93</td>
</tr>
<tr>
<td>Trials</td>
<td>15.75</td>
<td>6.12</td>
</tr>
<tr>
<td>Solutions</td>
<td>5.81</td>
<td>4.94</td>
</tr>
<tr>
<td>Failures</td>
<td>6.72</td>
<td>4.84</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>30.23</td>
<td>13.84</td>
</tr>
<tr>
<td>Total Sample, Ungrouped (n = 96)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>4.46</td>
<td>.86</td>
</tr>
<tr>
<td>Trials</td>
<td>14.63</td>
<td>6.49</td>
</tr>
<tr>
<td>Solutions</td>
<td>5.24</td>
<td>4.28</td>
</tr>
<tr>
<td>Failures</td>
<td>6.41</td>
<td>4.85</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>27.96</td>
<td>14.84</td>
</tr>
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</table>
Table 6
Two Way Analyses of Variance:
Effect of Contingency and Level of Success

<table>
<thead>
<tr>
<th>Source</th>
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<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Measure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B (n = 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (A)</td>
<td>1,60</td>
<td>.55</td>
<td>.99</td>
</tr>
<tr>
<td>Level of Success (B)</td>
<td>1,60</td>
<td>.70</td>
<td>.99</td>
</tr>
<tr>
<td>A x B</td>
<td>1,60</td>
<td>.10</td>
<td>.99</td>
</tr>
<tr>
<td>Trials (n = 64)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (A)</td>
<td>1,60</td>
<td>.45</td>
<td>.99</td>
</tr>
<tr>
<td>Level of Success (B)</td>
<td>1,60</td>
<td>.27</td>
<td>.99</td>
</tr>
<tr>
<td>A x B</td>
<td>1,60</td>
<td>1.36</td>
<td>.25</td>
</tr>
<tr>
<td>Solutions (n = 64)</td>
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<td></td>
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</tr>
<tr>
<td>Contingency (A)</td>
<td>1,60</td>
<td>1.56</td>
<td>.22</td>
</tr>
<tr>
<td>Level of Success (B)</td>
<td>1,60</td>
<td>.02</td>
<td>.99</td>
</tr>
<tr>
<td>A x B</td>
<td>1,60</td>
<td>1.50</td>
<td>.22</td>
</tr>
<tr>
<td>Failures (n = 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (A)</td>
<td>1,60</td>
<td>.50</td>
<td>.99</td>
</tr>
<tr>
<td>Level of Success (B)</td>
<td>1,60</td>
<td>.11</td>
<td>.99</td>
</tr>
<tr>
<td>A x B</td>
<td>1,60</td>
<td>1.00</td>
<td>.99</td>
</tr>
<tr>
<td>Mean Latency (n = 64)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (A)</td>
<td>1,60</td>
<td>.51</td>
<td>.99</td>
</tr>
<tr>
<td>Level of Success (B)</td>
<td>1,60</td>
<td>.12</td>
<td>.99</td>
</tr>
<tr>
<td>A x B</td>
<td>1,60</td>
<td>1.20</td>
<td>.28</td>
</tr>
</tbody>
</table>
Table 7
Means and Standard Deviations for Subjects' Scenes on Dependent Measures for Contingent and Noncontingent Conditions (Ungrouped)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingent (ungrouped) (n = 32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>2.63</td>
<td>.71</td>
</tr>
<tr>
<td>Trials</td>
<td>13.50</td>
<td>6.53</td>
</tr>
<tr>
<td>Solutions</td>
<td>5.56</td>
<td>4.00</td>
</tr>
<tr>
<td>Failures</td>
<td>5.81</td>
<td>5.19</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>25.46</td>
<td>15.24</td>
</tr>
<tr>
<td>Noncontingent (ungrouped) (n = 32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>2.47</td>
<td>.95</td>
</tr>
<tr>
<td>Trials</td>
<td>14.63</td>
<td>6.80</td>
</tr>
<tr>
<td>Solutions</td>
<td>4.34</td>
<td>3.80</td>
</tr>
<tr>
<td>Failures</td>
<td>6.69</td>
<td>4.59</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>28.20</td>
<td>15.47</td>
</tr>
</tbody>
</table>
Table 8
One Way Analyses of Variance:
Effect of Contingency versus Noncontingency

<table>
<thead>
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<th>Source</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Expectancy B</td>
<td>1,62</td>
<td>.56</td>
<td>.46</td>
</tr>
<tr>
<td>Trials</td>
<td>1,62</td>
<td>.46</td>
<td>.50</td>
</tr>
<tr>
<td>Solutions</td>
<td>1,62</td>
<td>1.56</td>
<td>.22</td>
</tr>
<tr>
<td>Failures</td>
<td>1,62</td>
<td>.51</td>
<td>.48</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>1,62</td>
<td>.51</td>
<td>.48</td>
</tr>
</tbody>
</table>
who had received success feedback on a treatment task, contingencies of reinforcement did not differentiate subjects' later task specific expectancies for success (B) or their subsequent criterion task performance. With respect to success, hypotheses related to the intensifying or sharpening effect of contingent feedback on expectancies and performance were not supported.

In order to compare the task specific expectancies for success and performance of subjects in the four experimental conditions with those of subjects in the control-no feedback condition, a series of two-tailed Dunnetts tests were performed. For each dependent measure, data of each experimental group were compared with that of the control group. Use of the Dunnetts test controlled for the post hoc experiment-wise Type I error rate for multiple nonindependent comparisons. Dunnetts comparisons did not reach significance for any of the four sets of pair-wise group comparisons. Results for each set of comparisons are presented in Tables 9 and 10 for contingent and noncontingent conditions respectively. Contrary to hypotheses about the differential effects of actual contingencies of reinforcement and levels of success feedback, subjects who had received contingent feedback did not report higher specific expectancies for success (B) following experimental manipulation compared to controls who received no feedback. Nor were differences in performance found between each experimental group and the control group. Thus
Table 9

Dunnetts Tests for Dependent Measures:
Contingent Conditions versus Control Conditions (two-tailed)

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>error</th>
<th>df</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Success</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>91</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>91</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>Solutions</td>
<td>91</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Failures</td>
<td>91</td>
<td>.90</td>
<td></td>
</tr>
<tr>
<td>Mean Latency</td>
<td>91</td>
<td>-1.41</td>
<td></td>
</tr>
<tr>
<td><strong>Moderate Success (n = 13)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>91</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Trials</td>
<td>91</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Solutions</td>
<td>91</td>
<td>-1.67</td>
<td></td>
</tr>
<tr>
<td>Failures</td>
<td>91</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>Mean Latency</td>
<td>91</td>
<td>.06</td>
<td></td>
</tr>
</tbody>
</table>

Critical d value = 2.53 with α = .025
Table 10
Dunnetts Tests for Dependent Measures:  
Noncontingent Conditions versus Control Conditions

<table>
<thead>
<tr>
<th>Dependent Measure</th>
<th>error</th>
<th>df</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Success (n = 19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>91</td>
<td></td>
<td>-.59</td>
</tr>
<tr>
<td>Trials</td>
<td>91</td>
<td></td>
<td>.08</td>
</tr>
<tr>
<td>Solutions</td>
<td>91</td>
<td></td>
<td>.63</td>
</tr>
<tr>
<td>Failures</td>
<td>91</td>
<td></td>
<td>-.25</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>91</td>
<td></td>
<td>-.61</td>
</tr>
<tr>
<td>Moderate Success (n = 13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Expectancy B</td>
<td>91</td>
<td></td>
<td>-.34</td>
</tr>
<tr>
<td>Trials</td>
<td>91</td>
<td></td>
<td>-1.32</td>
</tr>
<tr>
<td>Solutions</td>
<td>91</td>
<td></td>
<td>-.46</td>
</tr>
<tr>
<td>Failures</td>
<td>91</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Mean Latency</td>
<td>91</td>
<td></td>
<td>-1.09</td>
</tr>
</tbody>
</table>

Critical d value = 2.53 with \( \alpha = .025 \)
two major hypotheses were not confirmed. First, unconfirmed was the prediction that contingent success, but not noncontingent success would yield higher specific expectancies for success (B) and would facilitate subsequent performance. Nor as predicted did the level of success, either high or moderate, influence subsequent performance additively. As predicted, however, subjects who had received noncontingent success feedback did not differ significantly from control in their reported specific expectancies for success although this conclusion is weakened by the inability to differentiate between the contingent and noncontingent success groups.

To test the relationship between generalized and specific expectancies for success, Pearson correlation coefficients were computed for all pretest measures with both specific expectancy for success measures. Correlations between post hoc ratings of performance satisfaction on both tasks and pretest measures were also found. Means and standard deviations for these measures are presented in Tables 11, 12, and 13 for each condition: contingent, noncontingent, and control. Correlation coefficients and significant levels for subjects' scores (n = 96) between pretest measures and, for experimental groups (n = 64), between pretest measures and specific expectancies prior to any experimental manipulation (A) are presented in Table 14. Scores on the Marlowe-Crowne Social Desirability Scale were positively and significantly related to Generalized Expectancy for Success Scale scores
Table 11
Means and Standard Deviations for Pretest and Performance Satisfaction Measures Contingent Conditions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Success (n = 19)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>112.26</td>
<td>14.21</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>186.74</td>
<td>23.99</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>13.11</td>
<td>4.53</td>
</tr>
<tr>
<td>Specific Expectancy A</td>
<td>4.21</td>
<td>.79</td>
</tr>
<tr>
<td>Performance Satisfaction (Treatment)</td>
<td>4.68</td>
<td>.48</td>
</tr>
<tr>
<td>Performance Satisfaction (Criterion)</td>
<td>2.95</td>
<td>1.31</td>
</tr>
<tr>
<td><strong>Moderate Success (n = 13)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>111.85</td>
<td>11.27</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>167.77</td>
<td>54.90</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>14.08</td>
<td>4.68</td>
</tr>
<tr>
<td>Specific Expectancy A</td>
<td>4.23</td>
<td>.60</td>
</tr>
<tr>
<td>Performance Satisfaction (Treatment)</td>
<td>4.85</td>
<td>.56</td>
</tr>
<tr>
<td>Performance Satisfaction (Criterion)</td>
<td>2.77</td>
<td>1.36</td>
</tr>
</tbody>
</table>
Table 12
Means and Standard Deviations for Pretest and Performance Satisfaction Measures for Noncontingent Conditions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Success (n = 19)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>117.90</td>
<td>10.75</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>184.37</td>
<td>25.01</td>
</tr>
<tr>
<td>Marlow-Crowne Social Desirability Scale</td>
<td>13.42</td>
<td>5.22</td>
</tr>
<tr>
<td>Specific Expectancy A</td>
<td>4.68</td>
<td>.67</td>
</tr>
<tr>
<td>Performance Satisfaction (Treatment)</td>
<td>3.85</td>
<td>.56</td>
</tr>
<tr>
<td>Performance Satisfaction (Criterion)</td>
<td>2.77</td>
<td>1.36</td>
</tr>
<tr>
<td><strong>Moderate Success (n = 13)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>120.92</td>
<td>12.83</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>183.39</td>
<td>35.84</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>13.85</td>
<td>5.71</td>
</tr>
<tr>
<td>Specific Expectancy A</td>
<td>4.54</td>
<td>.78</td>
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<tr>
<td>Performance Satisfaction (Treatment)</td>
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<td>1.39</td>
</tr>
<tr>
<td>Performance Satisfaction (Criterion)</td>
<td>2.92</td>
<td>1.44</td>
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</table>
Table 13  
Means and Standard Deviations for Pretest and Performance Satisfaction Measures for Control Condition (n = 32)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Expectancy for Success Scale</td>
<td>114.59</td>
<td>14.27</td>
</tr>
<tr>
<td>Collins Internal-External Control Scale</td>
<td>184.97</td>
<td>26.09</td>
</tr>
<tr>
<td>Marlowe-Crowne Social Desirability Scale</td>
<td>15.47</td>
<td>6.44</td>
</tr>
<tr>
<td>Performance Satisfaction (Treatment)</td>
<td>4.34</td>
<td>1.72</td>
</tr>
<tr>
<td>Performance Satisfaction (Criterion)</td>
<td>3.06</td>
<td>1.70</td>
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</tbody>
</table>
Table 14
Pearson Correlation Coefficients Matrix for Pretest Measures and Specific Expectancy A Total Sample (Ungrouped) (n = 96)

<table>
<thead>
<tr>
<th></th>
<th>CIE</th>
<th>MCSDS</th>
<th>Specific Expectancy A (n = 64) Exp. groups only</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generalized Expectancy for Success Scale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r )</td>
<td>-.28**</td>
<td>.36***</td>
<td>.36</td>
</tr>
<tr>
<td>( p )</td>
<td>.003</td>
<td>.001</td>
<td>.102</td>
</tr>
<tr>
<td><strong>Collins Internal-External Control Scale (CIE)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r )</td>
<td>-.24**</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>( p )</td>
<td>.01</td>
<td>.40</td>
<td></td>
</tr>
<tr>
<td><strong>Marlowe-Crowne Social Desirability Scale (MCSDS)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( r )</td>
<td></td>
<td></td>
<td>.15</td>
</tr>
<tr>
<td>( p )</td>
<td></td>
<td></td>
<td>.07</td>
</tr>
</tbody>
</table>

*\( p < .05 \)
**\( p < .01 \)
***\( p < .001 \)
(r = 36, p < .001) and negatively and significantly related to Collins Internal-External Scale scores (r = -.28, p < .003). Correlations between Generalized Expectancy for Success Scale scores and initial specific expectancies for success (A) for experimental groups only (n = 64) approached significance (r = .36, p < .10).

Since the confounding effects of social desirability on the relationship between measures of expectancy for success had been anticipated, the variability due to scores on the Marlow-Crowne Social Desirability Scale were partialed out and new correlation coefficients were computed. Results for combined experimental groups are presented in Table 15. After partialing out social desirability, Generalized Expectancy for Success scores and initial specific expectancies for success were positively and significantly correlated (r = .50, p < .001). With social desirability partialed out then, subjects' generalized expectancies for success are positively related to an expectancy for a novel task, as predicted.

Correlations for scores on pretest measures with task specific expectancies for success and post hoc ratings of performance satisfaction for treatment and criterion tasks are presented by group in Tables 16, 17, and 18. As anticipated, scores on the Generalized Expectancy for Success Scale were less related to a task specific expectancy for success, following feedback for experimental groups and positively and significantly related to satisfaction ratings for both the
Table 15
Zero Order Partials and Partial Correlation Coefficients for Generalized Expectancy for Success Scale and Specific Expectancy A Scores Controlling for Variability due to Marlowe-Crowne Social Desirability Scale Scores for Experimental Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Specific Expectancy A</th>
<th>Marlowe-Crowne Social Desirability Scale</th>
<th>Specific Expectancy A partialled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Expectancy for Success Scale (n = 62)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.48***</td>
<td>.29**</td>
<td>.50***</td>
</tr>
<tr>
<td>p</td>
<td>.001</td>
<td>.01</td>
<td>.001</td>
</tr>
<tr>
<td>Specific Expectancy A (n = 62)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td></td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td></td>
<td>.48</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01  
***p < .001
Table 16
Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Contingent Conditions

<table>
<thead>
<tr>
<th>Pretest Measures</th>
<th>Specific Expect. B (with MC SDS partialed out)</th>
<th>Specific Expect. B</th>
<th>Performance Satisfaction (Treatment)</th>
<th>Performance Satisfaction (Criterion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Success</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General. Expect. for Suc. Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(r)</td>
<td>.30</td>
<td>.26</td>
<td>-.05</td>
<td>.28</td>
</tr>
<tr>
<td>(p)</td>
<td>.11</td>
<td>.14</td>
<td>.42</td>
<td>.13</td>
</tr>
<tr>
<td>Collins I-E Control Sc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(r)</td>
<td>-.16</td>
<td>-.23</td>
<td>-.25</td>
<td></td>
</tr>
<tr>
<td>(p)</td>
<td>.26</td>
<td>.17</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>Marlowe-Crowne Soc. Desir. Scale</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(r)</td>
<td>-.11</td>
<td>.17</td>
<td>-.03</td>
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*p < .05  
**p < .01  
***p < .001
Table 17
Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Noncontingent Conditions

<table>
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<tr>
<th>Pretest Measures</th>
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<th>Performance Satisfaction (Criterion)</th>
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Table 17 (continued)

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<th>Performance Satisfaction (Criterion)</th>
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*p < .05

**p < .01

***p < .001
Table 18

Pearson Correlation Coefficients for Scores on Pretest Measures with Specific Expectancy B and Post Hoc Ratings of Performance Satisfaction for Control Condition (n = 32)

<table>
<thead>
<tr>
<th>Pretest Measures</th>
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<th>Specific Expect. B</th>
<th>Performance Satisfaction (Treatment)</th>
<th>Performance Satisfaction (Criterion)</th>
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<td>Generalized Expectancy for Success Scale</td>
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<td>p</td>
<td>.42</td>
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*p < .05
**p < .01
***p < .001
experimental and criterion task for subjects in the four experimental groups. Additionally, Generalized Expectancy for Success scores were highly positively related to specific expectancies for success following treatment task exposure among subjects in the control-no feedback group. Ratings of performance satisfaction for both "tasks" were highly positively correlated with control subjects' Generalized Expectancy for Success scores although they had received no task performance instructions or requisites on the treatment task.

In order to investigate the relative effect of the two generalized expectancy dimensions, success and control of reinforcement, on criterion task performance, Pearson correlation coefficients were computed for each group. Results are presented in Tables 19 and 20 for contingent and noncontingent conditions respectively. No correlations reached significance. Thus, following treatment manipulations neither generalized expectancies for success nor for internal versus external control of reinforcement appear to be related to criterion task performance. No significant correlations between scores on the Collins Internal-External Control Scale and specific expectancy measures were obtained. Support is thus provided for the discriminant validity of the Generalized Expectancy for Success Scale.

Since no differences had been found between high and moderate success conditions on any variables, these groups were combined within each contingency condition to test for
Table 19
Pearson Correlation Coefficients and Significance Levels for Generalized Expectancy and Criterion Task Performance Measures for Contingent Conditions

<table>
<thead>
<tr>
<th>Dependent Measures</th>
<th>Generalized Expectancy Measures</th>
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<td>.11</td>
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<td>Failures</td>
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<td>.14</td>
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<tr>
<td>Mean Latency</td>
<td>-.16</td>
<td>.27</td>
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High Success (n = 19)

| Trials             | -.03                             | -.18 |
| Solutions          | .47                              | .28 |
| Failures           | -.14                             | .27 |
| Mean Latency       | .11                              | -.42 |

Moderate Success (n = 13)

| Trials             | .09                              | -.34 |
| Solutions          | .36                              | .08 |
| Failures           | .38                              | .13 |
Table 20
Pearson Correlation Coefficients and Significance Levels for Generalized Expectancy and Criterion Task Performance Measures for Noncontingent Conditions

<table>
<thead>
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<th>Dependent Measures</th>
<th>Generalized Expectancy Measures</th>
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<td>Mean Latency</td>
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<td></td>
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High Success (n = 19)

| Trials             | -.24                            |   .19     |
| Solutions          | .21                             |   .27     |
| Failures           | .16                             |   .26     |
|                     | .30                             |   .20     |
| Mean Latency       | -.25                            |   .11     |
|                     | .21                             |   .36     |

Moderate Success (n = 13)

| Trials             | .17                             |   .05     |
| Solutions          | .29                             |   .43     |
differences in performance satisfaction. Results of \( t \)-tests for independent samples of equal size (\( n = 32 \)) did not reach significance for either treatment (\( t = .84, \ p > .05 \)) or criterion (\( t = .30, \ p > .05 \)) performance satisfaction. The \( t \)-test for combined experimental groups (\( n = 64 \)) versus the control group (\( n = 32 \)) for independent samples of unequal size did not reach significance for either treatment (\( t = .59, \ p > .05 \)) or criterion (\( t = .80, \ p > .05 \)) ratings. In summary then, performance satisfaction did not differ as a function of experimental condition as measured by the post hoc questionnaire.

Although no predictions were made regarding the relationship between pretest and post hoc measures, ratings of treatment performance satisfaction were strongly negatively correlated with Collins Internal-External Control Scale scores (\( r = -.57, \ p < .02 \)) and positively and significantly related to initial specific expectancy ratings (\( r = .62, \ p < .01 \)) for the contingent-moderate success condition only. Among subjects in the control condition, Generalized Expectancy for Success Scale scores were positively correlated with performance satisfaction for both treatment (\( r = .53, \ p < .001 \)) and criterion (\( r = .37, \ p < .02 \)) tasks. Results of attributional ratings on the open-ended questions are not presented since inter-rater reliability was so poor (\( r = .46, \ p > .10 \)). Anecdotal evidence revealed that subjects in experimental groups believed the experimenter's feedback on the treatment
task while subjects in the control group perceived exposure to the treatment task as confusing. They expressed uncertainty about its purpose and the intended nature of their participation.
CHAPTER IV
Discussion

Results of the present investigation confirmed none of the testable major hypotheses concerning the differential effects of contingency versus noncontingency of reinforcement on specific expectancies for success and subsequent performance. Subjects who had performed the treatment task and had been given success feedback contingent on their actual performance did not significantly differ from either noncontingently successful or control subjects on any of the five dependent measures. With respect to success conditions, no support, therefore, is established for the hypothesized differential salience of contingent versus noncontingent reinforcement in formulating expectancies for success or in influencing subsequent performance when compared to a control condition in which no feedback was provided. The absence of a significant difference between the noncontingent success and control conditions is consistent with present hypotheses, although the failure to obtain any significant differences substantially weakens the validity of this finding.

In attempting to replicate Seligman's methodology while controlling for the ratio of correct versus incorrect feedback within the treatment task two crucial conditions, contingent and noncontingent failure, could not be obtained. Also unassessed are the interactions of contingencies with
failure feedback. Consequently, two major hypotheses remain untested: first, the debilitating effects of contingent failure; and secondly, the differential salience of contingent versus noncontingent failure feedback.

Thus, the failure to obtain any significant differences among contingency conditions is inconclusive with respect to present hypotheses. Results may suggest, on one hand, that the differential salience of contingent versus noncontingent feedback is specific only to failure conditions. This interpretation is least discrepant with the present formulation and remains consistent with the learned helplessness model which contends that only failure coupled with noncontingency is debilitating. The question of the relative effects of contingency versus noncontingency within the failure condition is still unresolved, however.

Several alternative interpretations remain plausible. The attempt to assess subjects' attributions was unsuccessful, however, individuals' perceptions of the contingencies may have been superordinately potent over the actual contingencies. Seligman in his later work argues that only failure which is perceived as uncontrollable produces deficits in subsequent performance. Applying this framework to the present results, perhaps subjects given success feedback are less sensitive to the contingencies of reinforcement. Given an ambiguous task, subjects in the success conditions may have assumed that feedback on the treatment task was not directly
contingent on their behavior. This may account for the failure to find significant differences between experimental and control conditions, although the interpretation remains purely speculative.

The effectiveness of the manipulation itself remains questionable. Two possibly mitigating factors are plausible. First, since no assessment of the reinforcement value of performance in the experimental setting was made, subjects may not have perceived success feedback as potent information and may therefore have responded to the criterion task as though no feedback had been provided. This would account for the lack of differences between success and control conditions. The lack of differences between high and moderate success is also explained in this way. This interpretation is consistent with the finding that groups did not differ with respect to performance satisfaction. Possibly then, the success manipulation did not adequately tap the success versus no feedback dimension of reinforcement. Alternatively, the contingency dimension may not have been sufficiently powerful to subjects since by controlling for the ratio of correct versus incorrect feedback yielded a very high percentage of "correct" in success conditions. These methodological weaknesses raise questions about the appropriateness of the experimental design for testing hypotheses about the effects of noncontingent success and contingent failure.

Several potentially competing hypotheses appear unlikely.
Since no differences between subjects were found as a function of the experimenter's sex, results do not appear to be confounded by this factor. Although incompletely assessed, neither did subjects appear to differ significantly across conditions on the basis of academic achievement. The inability to obtain subjects who failed contingency, and therefore, yoked subjects who were failed noncontingently, may, however, be a function of a sampling bias which favored high achievers. In any case, possible implications of results should be restricted not only to female undergraduates, but also to a fairly narrow band of moderately high academic achievers.

The strongly negative correlation between performance satisfaction and scores on the Collins Internal-External Control Scale and the positive significant relationship between performance satisfaction and initial specific expectancy ratings for the moderately successful contingent condition is not easily interpreted by any of the present alternatives. For these subjects only then, externality and relatively high initial specific expectancies for success were related to high performance satisfaction. Since these relationships are not consistent across conditions or between performance satisfaction and other measures, a random rather than systematic relationship seems most likely in this case.

Results are strongly supportive of the discriminant validity of the Generalized Expectancy for Success Scale. As postulated by social learning theory, one's generalized expect-
ancy for success is positively related to specific expectancies for success in both novel (experimental conditions) and ambiguous (control) situations. Subjects' expectancies for success, as found in the present investigation, become relatively less related to generalized expectancies as the situation becomes more clearly defined, less ambiguous, or more familiar. The absence of a relationship between generalized expectancies for internal versus external control of reinforcement and specific expectancies for success, by contrast, provide support for the discriminant validity of the Generalized Expectancy for Success Scale. Further, the relationship between generalized and specific expectancies for success does not appear to be the function of a general cognitive or expectancy factor, but rather a strong empirical and theoretically well-founded interrelationship. Since the present study attempted to delineate the predictive utility of the generalized expectancy for success to specific expectancies for success, but not with respect to performance or other behavioral indices, the external validity of the measure remains unestablished. Further, the nature of the relationship between generalized and specific expectancies must still be extended beyond the paradigm currently investigated. Questions remain as to the situational parameters in which expectancies for success will prove predictive and the relative contribution of the generalized factor given different situational constraints. Nonetheless, the Generalized Expectancy
for Success Scale appears to hold promise for future investigation of the effect of cognitions on behavior.

In summary, conclusions drawn from the present results must be viewed cautiously. A number of possible methodological weaknesses mitigate against drawing firm conclusions or deciding among the possible alternative interpretations. First, the effectiveness of the experimental manipulation and its appropriateness for the investigation of all permutations of contingency and success are unclear, since no differences between groups were found on any of the five dependent measures. Particularly regrettable then is the inability to generate failure groups with which to contrast the expectancies and performance variables. A number of interpretations of the results are equally plausible on the basis of results of this study. Among the most compelling is the unsuccessful attempt to replicate Seligman's findings to the extent that he reported differences in performance between contingently successful and control subjects. Results of this study suggest that a careful assessment of experimental demand characteristics, particularly with respect to attributions, is essential. The viability of the now classic learned helplessness paradigm in assessing the differential effects of a yoked and variable as opposed to fixed within task reinforcement ratio is also questionable. The validity of the learned helplessness model will depend upon its generalizability beyond the narrowly circumscribed ex-
perimental paradigm currently used. Desirable are designs which remain conceptually consistent with the model, but which also allow flexibility in the assessment of potentially related variables. The potency of the treatment for this and perhaps other populations must also be investigated.

Unresolved then are questions regarding the role of cognitive variables within the learned helplessness paradigm, particularly with respect to noncontingently successful versus contingently failing subjects. A design employing an entirely ambiguous treatment task in which feedback can be believably but arbitrarily manipulated according to condition is crucial. The systematic assessment of both subjects' expectancies for and attributions of success and failure will also help to delineate the manner in which cognitive variables mediate subsequent performance as a function of prior experience. Finally, the validity of the model for understanding one's self-perceptions with respect to expectancies and ultimately depressive cognitions, must be further investigated.
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(a)


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## APPENDIX 1

**Information Sheet**

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APPENDIX 2

Generalized Expectancy for Success Scale

This is a questionnaire to find out how people believe they will do in certain situations. Each item consists of a five-point scale and a brief statement regarding one's expectations about events. Please indicate the degree to which you believe the statement would apply to you personally by circling the appropriate number. Give the answer that you truly believe best applies to you and not what you would like to be true or think others would want to hear. Answer the items carefully, but do not spend too much time on any one item. Be sure to find an answer for every item, even if the statement describes a situation you presently do not expect to encounter. Answer as if you were going to be in each situation. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

In the future I expect that I will...

1. ... find that people don't seem to understand what I am trying to say.

   highly improbable 1 2 3 4 5

2. ... be discouraged about my ability to gain the respect of others.

   highly improbable 1 2 3 4 5

3. ... be a good parent.

   highly improbable 1 2 3 4 5

4. ... be unable to accomplish my goals.

   highly improbable 1 2 3 4 5

5. ... have a successful marital relationship.

   highly improbable 1 2 3 4 5
In the future I expect that I will...

6. . . . deal poorly with emergency situations.

   highly improbable 1 2 3 4 5 highly probable

7. . . . find my efforts to change situations I don't like are ineffective.

   highly improbable 1 2 3 4 5 highly probable

8. . . . not be very good at learning new skills.

   highly improbable 1 2 3 4 5 highly probable

9. . . . carry through my responsibilities successfully.

   highly improbable 1 2 3 4 5 highly probable

10. . . . discover that the good in life outweighs the bad.

    highly improbable 1 2 3 4 5 highly probable

11. . . . handle unexpected problems successfully.

    highly improbable 1 2 3 4 5 highly probable

12. . . . get the promotions I deserve.

    highly improbable 1 2 3 4 5 highly probable

13. . . . succeed in the projects I undertake.

    highly improbable 1 2 3 4 5 highly probable

14. . . . not make any significant contributions to society.

    highly improbable 1 2 3 4 5 highly probable
In the future I expect that I will . . .

15. . . . discover that my life is not getting much better.
   highly improbable 1 2 3 4 5 highly probable

16. . . . be listened to when I speak.
   highly improbable 1 2 3 4 5 highly probable

17. . . . discover that my plans don't work out too well.
   highly improbable 1 2 3 4 5 highly probable

18. . . . find that no matter how hard I try, things just don't turn out the way I would like.
   highly improbable 1 2 3 4 5 highly probable

19. . . . handle myself well in whatever situation I'm in.
   highly improbable 1 2 3 4 5 highly probable

20. . . . be able to solve my own problems.
   highly improbable 1 2 3 4 5 highly probable

21. . . . succeed at most things I try.
   highly improbable 1 2 3 4 5 highly probable

22. . . . be successful in my endeavors in the long run.
   highly improbable 1 2 3 4 5 highly probable

23. . . . be very successful working out my personal life.
   highly improbable 1 2 3 4 5 highly probable
In the future I expect that I will . . .

24. . . . experience many failures in my life.

highly improbable 1 2 3 4 5 highly probable

25. . . . make a good impression on people I meet for the first time.

highly improbable 1 2 3 4 5 highly probable

26. . . . attain the career goals I have set for myself.

highly improbable 1 2 3 4 5 highly probable

27. . . . have difficulty dealing with my superiors.

highly improbable 1 2 3 4 5 highly probable

28. . . . have problems working with others.

highly improbable 1 2 3 4 5 highly probable

29. . . . be a good judge of what it takes to get ahead.

highly improbable 1 2 3 4 5 highly probable

30. . . . achieve recognition in my profession.

highly improbable 1 2 3 4 5 highly probable
APPENDIX 3

Collins Internal-External Control Scale

Debatable Issues

Listed below are a series of statements with which some people agree and others disagree. Evidence can be advanced in favor of each statement, and against each statement.

Please indicate the extent to which you agree or disagree with a statement by placing a checkmark or X in one of the spaces on the line below the statement. Please don't skip any statements even if you don't have much feeling one way or the other.

1. Children get into trouble because their parents punish them too much.
   Agree :__ :__ :__ :__ :__ :__ :__ :__ :__ : Disagree

2. The trouble with most children nowadays is that their parents are too easy with them.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree

3. Many of the unhappy things in people's lives are partly due to bad luck.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree

4. People's misfortunes result from the mistakes they make.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree

5. One of the major reasons why we have wars is because people don't take enough interest in politics.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree

6. There will always be wars, no matter how hard people try to prevent them.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree

7. In the long run people get the respect they deserve in this world.
   Agree :__ :__ :__ :__ :__ :__ :__ : Disagree
8. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

Agree :___:___:___:___:___:___: ___ Disagree

9. The idea that teachers are unfair to students in nonsense.

Agree :___:___:___:___:___:___: ___ Disagree

10. Most students don't realize the extent to which their grades are influenced by accidental happenings.

Agree :___:___:___:___:___:___: ___ Disagree

11. Without the right breaks, one cannot be an effective leader.

Agree :___:___:___:___:___:___: ___ Disagree

12. Capable people who fail to become leaders have not taken advantage of their opportunities.

Agree :___:___:___:___:___:___: ___ Disagree

13. No matter how hard you try some people just don't like you.

Agree :___:___:___:___:___:___: ___ Disagree

14. People who can't get others to like them don't understand how to get along with others.

Agree :___:___:___:___:___:___: ___ Disagree

15. I have found that what is going to happen will happen.

Agree :___:___:___:___:___:___: ___ Disagree

16. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

Agree :___:___:___:___:___:___: ___ Disagree

17. In the case of the well prepared student there is rarely, if ever, such a thing as an unfair test.

Agree :___:___:___:___:___:___: ___ Disagree
18. Many times exam questions tend to be so unrelated to course work that studying is really useless.

Agree : ___:___:___:___:___:___:___: Disagree

19. Becoming a success is a matter of hard work; luck has little or nothing to do with it.

Agree : ___:___:___:___:___:___:___: Disagree

20. Getting a good job depends mainly on being in the right place at the right time.

Agree : ___:___:___:___:___:___:___: Disagree

21. The average citizen can have an influence in government decisions.

Agree : ___:___:___:___:___:___:___: Disagree

22. This world is run by the few people in power, and there is not much the little guy can do about it.

Agree : ___:___:___:___:___:___:___: Disagree

23. When I make plans, I am almost certain that I can make them work.

Agree : ___:___:___:___:___:___:___: Disagree

24. 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.

Agree : ___:___:___:___:___:___:___: Disagree

25. In many cases getting what I want has little or nothing to do with luck.

Agree : ___:___:___:___:___:___:___: Disagree

26. Many times we might just as well decide what to do by flipping a coin.

Agree : ___:___:___:___:___:___:___: Disagree

27. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

Agree : ___:___:___:___:___:___:___: Disagree
28. Getting people to do the right thing depends upon ability: luck has little or nothing to do with it.

Agree :____:____:____:____:____:____:____:____: Disagree

29. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.

Agree :____:____:____:____:____:____:____:____: Disagree

30. By taking an active part in political and social affairs the people can control world events.

Agree :____:____:____:____:____:____:____:____: Disagree

31. Most people don't realize the extent to which their lives are controlled by accidental happenings.

Agree :____:____:____:____:____:____:____:____: Disagree

32. There really is no such thing as "luck."

Agree :____:____:____:____:____:____:____:____: Disagree

33. It is hard to know whether or not a person really likes you.

Agree :____:____:____:____:____:____:____:____: Disagree

34. How many friends you have depends on how nice a person you are.

Agree :____:____:____:____:____:____:____:____: Disagree

35. In the long run the bad things that happen to us are balanced by the good ones.

Agree :____:____:____:____:____:____:____:____: Disagree

36. Most misfortunes are the results of lack of ability, ignorance, laziness, or all three.

Agree :____:____:____:____:____:____:____:____: Disagree

37. With enough effort we can wipe out political corruption.

Agree :____:____:____:____:____:____:____:____: Disagree
38. It is difficult for people to have much control over the things politicians do in office.

39. Sometimes I can't understand how teachers arrive at the grades they give.

40. There is a direct connection between how hard I study and the grades I get.

41. Many times I feel that I have little influence over the things that happen to me.

42. It is impossible for me to believe that chance or luck plays an important role in my life.

43. People are lonely because they don't try to be friendly.

44. There's not much use in trying too hard to please people; if they like you, they like you.

45. What happens to me is my own doing.

46. Sometimes I feel that I don't have enough control over the direction my life is taking.

47. Most of the time I can't understand why politicians behave the way they do.
48. In the long run people are responsible for bad government on a national as well as on a local level.

Agree :____:____:____:____:____:____: Disagree
APPENDIX 4

Marlowe-Crowne Social Desirability Scale
Personal Reaction Inventory

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

Please record your responses on the enclosed IBM sheet. If the statement is true as it pertains to you, the correct response column is (1). If the statement is false as it pertains to you, the correct response column is (2). Fill in your student number and sex on the answer sheet.

Remember: Answer each item as it pertains to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

13. No matter whom I'm talking to, I'm always a good listener.

14. I can remember "playing sick" to get out of something.

15. There have been occasions when I took advantage of someone.

16. I'm always willing to admit it when I made a mistake.

17. I always try to practice what I preach.

18. I don't find it particularly difficult to get along with loud-mouthed obnoxious people.

19. I sometimes try to get even rather than forgive and forget.

20. When I don't know something I don't at all mind admitting it.

21. I am always courteous, even to people who are disagreeable.

22. At times I have really insisted on having things my own way.

23. There have been occasions when I felt like smashing things.

24. I would never think of letting someone else be punished for my wrongdoing.

25. I never resent being asked to return a favor.

26. I have never been irked when people expressed ideas very different from my own.

27. I never make a long trip without checking the safety of my car.

28. There have been times when I was quote jealous of the good fortune of others.

29. I have almost never felt the urge to tell someone off.

30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.

32. I sometimes think when people have a misfortune they only got what they deserved.

33. I have never deliberately said something that hurt someone's feelings.
APPENDIX 5

Specific Expectancy (A and B)
Self-Rating Performance Scale

Please indicate on the scale below how well you expect to do on the task which follows.

Not at all well  1  2  3  4  5  Very well
APPENDIX 6

Post Hoc Questionnaire

Please answer the following questions on the blank sheet of paper provided. Number your answers according to the corresponding question number. Answer as honestly as you can.

1. In your own opinion, indicate how you would rate your performance on the first set of tasks (yellow booklet).
   
   I performed:
   not at all well 1 2 3 4 5 very well

2. Briefly comment on any factors you felt may have influenced your performance on the first set of tasks.

3. In your own opinion, indicate how you would rate your performance on the second set of tasks (blue booklet).

   I performed:
   not at all well 1 2 3 4 5 very well

4. Briefly comment on any factors you felt may have influenced your performance on the second set of tasks.
## APPENDIX 7
### Anagram Test

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