DEPRESSION, PERCEIVED HELPLESSNESS

AND GOAL OVER-EXPECTANCY

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Depression is perhaps the oldest and most common of all the mental disorders. The Book of Job in the Old Testament is a self-report of classical clinical depression. Within a normal population, up to fifteen percent of the people may be afflicted by significant depressive symptoms (Secunda, 1973). Depression as a clinical problem is characterized by more than the mood deviation commonly associated with this disorder. Along with the mood alteration are cognitive, behavioral and physical symptoms of depression (Beck, 1967; Zung, 1973).

From the time of Emil Kraeplin much interest has been focused on depression as a disease, with the etiology of the problem thought to be some physiological malfunction. Recent work in this area tends to indicate that there exists a genetic basis for a subset of the depressive disorders, the manic depressive disease (Winokur, Clayton and Reich, 1969). It was found that patients with manic behaviors tended to have two generations of affective illness in their families. The existance of two types of

affective illness was postulated: manic-depressive
(bipolar) and depressive (unpolar). Using markers
located on the X - chromosome, evidence was found
supporting an X - linked dominant transmission of
bipolar but not unipolar psychoses.

Schildkraut (1965) proposed a catecholamine
theory of depression. It was thought that mania is
associated with an excess of norepinephrine at the
synaptic junctions in the brain, while depression is
due to an absolute or relative deficiency of
norepinephrine. Norepinephrine, serotonin and
dopamine are transmitter substances which "carry"
the impulse of one neuron across a synapse to another
neuron. As originally proposed the biogenic animes
theory is over simplified. Secunda (1973) reported
that the unipolar - bipolar distinction is reinforced
and modified by pharmacological manipulation. Mono-
amine oxidase (a chemical which deactivates
transmitter substances), when chemically inhibited,
had antidepressant effects with unipolar patients but
not with bipolar patients. L-dopa (which increases
dopamine levels in the brain) had no antidepressant
effect in 25 percent of the unipolar patients but
lessened depression in the rest of the patients. In
bipolar patients this substance produces mania, but
without relieving depression. Lithium has moderate

antidepressant properties in bipolar patients but it
also has antimanic effects. Schildkraut (1971) has
modified his original position and states that the
previously proposed relationship between mood and
catacholoamines is not as simple or direct as inital-
ly thought.

Bourdillon and Ridges (1971) have proposed a
theory of schizophrenia based on abnormal levels of
cerebral catecholamines. There is a problem with
chemical theories in that starting with psychopath-
ology and going to a physiological abnormality the
route is fairly direct; but the physiological aspects
of these theories are not different enough to be able
to specify if a person with a specific physiological
abnormality would be depressed or schizophrenic. In
other words, abnormal catacholamine levels may be
necessary for both schizophrenia and affective dis-
orders, but sufficient conditions include other
factors which allow for differentiation of the dis-
orders above and beyond physiological differentiation.

Diaz-Guerrero, Gottlieb and Knott (1946) first
reported differences in the electroencephalographic
tracings of depressed and normal individuals. Manic-
depressives had difficulty falling asleep and frequent
and early awakening. Their sleep was characterized
by a greater proportion of light sleep and more and

frequent oscillation from one level to another. A
recent review (Secunda, 1973) reports continued sup-
port for the importance of fragmentation and
shallowness of sleep to depression. It is also re-
ported that rapid-eye-movement (REM) sleep is reduced
among depressed patients and that it is reduced out of
proportion to the amount of total loss of sleep.

Recently, social learning theorists (Ferster, 1973;
Lazarus, 1968; Lewinsohn, Weinstein and Shaw, 1969) have
stated that one of the major features of depression is a
reduced frequency of behaviors. The low frequency of
behaviors is thought to be caused by a low rate of rein-
forcement (Lewinsohn and Atwood, 1969) coupled perhaps
with aversive stimulation (Ferster, 1973). Originally
Lewinsohn (Lewinsohn and Atwood, 1969) hypothesized that
depression was caused by decrease in reinforcement ir-
respective of the contigencies of the reinforcement.
However, more recently Lewinsohn (Lewinsohn and Graf,
1973; Lewinsohn and Libet. 1972) has modified his
position, specifying that a decreased rate of response-
contingent reinforcement acts as an eliciting stimulus
for some depressive behaviors. The idea of loss of re-
inforcement irrespective of contingencies is
incorporated into the revised model in that certain
environmental events (e.g. death of a spouse) and some
traits and states (e.g. lack of social skills) are

related to low rate of positive reinforcement and thus depression occurs. It is thought that the deressed person is on an extended extinction schedule. This lesser rate of reinforcement causes a lower output of behaviors which, in turn, elicits less reinforcement from the environment. The social environment is thought, in other words, to interact with the depressed person to worsen his condition by reinforcing depressive symptoms.

Lewinsohn (Lewinsohn and Graf, 1973) has found that there is a significant relationship between mood and the number of pleasant activities in which subjects engage. This relationship is predicted by the behavioral model, with a more depressed mood corresponding to fewer pleasant activities. While the pleasant activities reported by the subjects do not constitute a measure of the total amount of reinforcement received by people, the pleasant event schedule employed is an index of the amount of pleasure obtained by the individual.

One problem with these studies has to do with the direction of causality. The behavioral model states that a low rate of reinforcement precipitates depression. It is just as reasonable on a priori basis to speculate that the depressed person will reduce his activities. Cross-lagged correlations (mood correlated with the pleasant event of the

preceding and the following days) were obtained (Lewinsohn and Graf, 1973) to hopefully clarify this problem, but neither explanation was supported as no relationship of causality could be predicted. It is interesting to note that the activities most associated with mood fell into three catagories; activities involving positive social interactions, affect incompatable with depression and ego-supportive activities. The ego-supportive activities imply a cognitive aspect which will be discussed later. The relationship between depression and social interaction has been demonstrated empirically.

Libet and Lewinsohn (1973) have defined social skills in terms of the social consequences of behaviors. In other words, the actions emitted by the person as well as the responses elicited from the environment determine the social competence of a person. It was argued that depressed people have lower social skills and, therefore, elicit less positive reinforcement from the environment. It was found that depressed subjects emitted about half as many actions as nondepressed subjects. Reciprocity was evident in that the subjects who emitted the largest number of behaviors tended to have the most actions directed toward them (correlations of elicited to emitted behaviors varied from .85 to .96). There was no

difference in the number of negative reactions emitted
by the depressed and nondepressed subjects. However,
nondepressed subjects emitted more positive reactions
than the depressed group. It is evident from these
findings that depressed people generally have lower
social skills and therefore tend to elicit less rein-
forcement from the environment. This relative absence
of reinforcement tends to support the behavioral view
of depression which ties the level of depression direct-
ly to the amount of reinforcement an individual receives.
But, again, the direction of causation is an open
question.

Seligman (Seligman, 1973; Seligman, 1975; Miller
and Seligman, 1973) has proposed a model of depression
that may help explain the lack of data indicating a di-
rect causal relationship between depression and amount
of reinforcement. An indirect relationship is thought
to exist, with the intervening variable being of a cog-
nitive nature. The learned helplessness model of
depression is an outgrowth of animal studies in which
inescapable shock was administered to dogs. After a
series of trials the animals no longer tried to escape
and when put into a situation in which escape was easy,
the animals did not learn the response which would ter-
minate the pain. Similar results of learned helpless-
ness have been found with human subjects (Thornton and

Jacobs, 1971). Many of the symptoms that learned
helplessness animals exhibit are strikingly similar to
those of a depressed person (Secunda, 1973). Among
the similarities are passivity, lack of aggression,
norepinephrine depletion and loss of libido. From
these data a theory of human depression emerged.

The learned helplessness model states that it is
not the trauma per se (electric shock for dogs or loss
of reinforcement for humans) that causes the pathology,
but it is the experience of having no control over the
trauma. In other words, the individual learns that
he is helpless and can no longer affect his world in a
significant way. According to this model rewards as
well as punishment and nonreward can cause depression.
The main factor involved is whether or not the rewards
or punishments are contingent upon the behaviors of a
person. If there is independence between one's
efforts and positive and negative experiences, this
will lead to learned helplessness or depression.

An alternative explanation to the behaviors
classified as learned and helplessness is offered by
Weis, Glazer and Pohorecky (1974). After observing a
norepinephrine depletion in the brain following stress,
it was thought that a chemical as opposed to a cogni-
tive change may give a better explanation for the
behaviors of animals given inescapable shock. After

a delay period (48 hours) animals had no trouble learning the proper response to escape the shock. This recovery is indicative of a temporary physiological change and not a more permanent cognitive alteration. A brief cold swim produces a norepinephrine depletion in rats, but is not thought to be traumatic enough to produce learned helplessness. After the swim, the animals behaved in a way similar to those administered inescapable shock. The behavior deficit was not present when the rats swam in warm water (which does not decrease norepinephrine levels).

Weis et al. constructed an escape situation in which less movement was required to terminate the shock. If the learned helplessness model is correct the amount of motor activity required to escape should make no difference. If the animals failed to terminate the shock because they could not move due to low norepinephrine level, however, they should be able to succeed with the simpler task. With the less demanding task neither inescapable shock nor a cold swim impaired the escape performance of the animals. To further confirm the physiological explanation levels of norepinephrine were measured. Again support was obtained as levels of the drug were consistent with the behavioral results. It is important to note that Weis, et al. do not rule out the existance of learned helplessness.

They only argue that the original studies do not present evidence supporting such a hypothesis.

Recently Seligman (1975) has pointed out some data that the chemical theory cannot easily handle. Rats who were presented unsolvable discrimination tasks did not have norepinephrine depletions but failed to solve subsequent problems. Animals who received non-contingent food had trouble later learning to press a bar for food. An important study overlooked by Weis et al. (1974) was performed by Seligman and Maier (1967). Three sets of dogs were placed in Pavlovian hammocks. The first group received no shock. The second group was shocked, but could terminate the shock by pressing a bar with their nose. The third group had no control over the shock, but received the same intensity and duration shock as the animals in the second group. Only the third group exhibited learned helplessness in a later escape situation. Therefore, it appears that the learning (or lack of it) is more important in exhibiting helpless behaviors than the shock per se. One must again go beyond a chemical explanation to understand the mechanisms of learned helplessness.

It is thought here that a cognitive explanation best suits the purpose of adding the missing dimension to a better understanding of depression. Even in normal people stress will cause an increase in

catechol excretion. The question then is why does
some environmental event (or series of events) cause
depression in some people, and schizophrenia in others,
while a large group of people are not adversely affect-
ed to any significant degree. According to the learned
helplessness model depression is characterized by a
specific cognitive distortion in the perception of one's
ability to change the environment. Miller and Seligman
(1973) have demonstrated that this perceived helplessness
exists in depressed students. Students were divided
into four groups based on their scores on a depression
inventory (Beck, 1967) and Rotter's (1966) internal-
external locus of control scale. The subjects were
presented two tasks: a skill task (really under the
experimenter's control) requiring the subject to raise
a platform without having a ball positioned on it roll
off, and a chance task in which subjects were required to
predict four out of five times per trial whether an X or
an 0 would appear on a screen. It was arranged so that
every subject succeeded on the first and final trial of
both tasks. Subjects were asked before each trial their
certainty (on a scale of 0 to 10) of success on the
following trial, and were promised a $.10 reward for
each success and $.10 was subtracted for each failure.
Success was controled so that each subject had a 50%
reinforcement schedule for both tasks. The dependent

measures were the change in expectancy after the first
success and two measures of cumulative expectancy
change.

On the initial expectancy, there were no differ-
ences between any groups. Overall, the learned
helplessness model was supported. There were no sig-
nificant differences along the internal-external locus
of control dimension, so subjects will only be discussed
as high and low depression groups. The nondepressed
and depressed groups did not differ in their expectancy
changes on any of the measures in the chance task. In
the skill task the low depression group showed greater
expectancy changes than the depressed group. The non-
depressed group also showed higher expectancy changes
in the skill task than in the chance task. Depression
scores were negatively correlated with expectancy
change in the skill task but not in the chance task.
The results indicated that in the skill task, depres-
sed subjects were less affected by success experiences
than the nondepressed subjects. This lack of influ-
ence was attributed to the cognitive distortion that
one is helpless and therefore cannot affect the envi-
ronment in a significant way.

Another interpretation is offered here for the
lack of effect of reinforcement on depressed sub-
jects which involves a cognitive distortion different

from learned helplessness. It is proposed that each person has a level of competency of acceptance above which self-reinforcement will occur. For example, a beginning golfer will reinforce himself for getting a score below 100, but a pro must be within a few strokes of par before he defines the event as rewarding. A depressed person is thought to set his expectations so high that the environmental reinforcement looses its reinforcement value. Loss of reinforcer effectiveness has been proposed by Costello (1972) as an explanation for depression. His explanation differs from the one presented here in that Costello links the loss of effectiveness to the interruption of a chain of behaviors leading to the goal.

The idea of perceptual and cognitive distortion among depressed people has support from the literature. Mezey and Cohen (1964) found that depressed people feel that time passes more slowly than normals and this distortion disappears on recovery from depression. Distortion of spatial judgement has been reported by Fisher (1964). Beck (1967) has proposed a model of depression based upon cognitive distortions. The faulty cognitions are hypothesized to have an etiological relationship to the affective, motivational and physical aspects of depression. Beck hypothesized a primary cognitive triad composed of an

individual viewing himself, his world and his future in a negative way. The negative triad is thought to originate out of stress experiences or is transmitted to the person from significant others.

The idea presented here is not incompatable with Beck's cognitive triad, nor with Seligman's learned helplessness. Inordinantly high goals may have an etiological influence and, more importantly, a maintaining relationship with depression. While learned helplessness may come about solely through failure to receive contingent reinforcement, in humans this condition is preceded, perhaps, by too high of an expectation level for self-reinforcement. The variation in self-reinforcement levels is thought to be why stressful situations will cause depression in some people and not in others. Those people predisposed to depression have contingency levels higher than those not so predisposed. The cognitive triad of Beck can also be understood in terms of an expectancy level which is unrealistically high. The person perceives himself as helpless because he is unable to be as inordinantly successful as his expectations demand. The world is bad because it does not allow him to satisfy his unrealistic goals. Because his behavioral repertoire is exhausted, the future also looks dim.

Depressed people probably do not have inordinant expectations for everything they do. In some severe cases, however, extreme goals may be pervasive. The amount of depression is thought to be positively related to the number and importance of areas in which too much is demanded. The amount of ego involvement in an area is thought to be the factor determining whether or not inordinant expectations will be employed in the area. Miller and Seligman (1973) found no differences in the initial expectancies between depressed and non-depressed students for predicting success on a chance task or a skill task. Even though monetary rewards were given for success ($.10 per trial), it is not enough to warrant any major degree of ego involvement among college students.

Schwartz (1974) found overly high expectations for depressed students in an ego involved task. The differences between actual and predicted final grades, along with a measure of depression, were obtained from male college students. The goal discrepancy (predicted minus actual grade) was found to correlate with the depression scale scores. In other words, those students who overestimated their final grades (i.e. set an expectancy level which was too high) were the most depressed students. It may be assumed that the final grades for the students in the Schwartz study entailed

much greater ego involvement than the simple tasks
in Miller and Seligman's study, thus making grade
expectancy a predictor of depression.

The purpose of the present study was to further
explore the relationship of ego involvement in a task
to depression. The basic design of Miller and
Seligman (1973) was employed. The chance task was
assumed to have minimal ego involvement and the skill
task was thought to have some ego involvement, since it
required some competancy in perceptual-motor skill, but
for students this involvement was assumed to be little.
No monetary rewards were given for either task in
order to determine the effects of rewards. A third
task was used to determine if the expectancies of
success are overestimated on tasks in which the sub-
jects are very ego involved. Test scores on midterm
examinations were used as this latter task.

It was hypothesized that depressed and nondepres-
sed subjects would not differ in their expected goals
or expectancies for success on the chance task due to
no ego involvement. On the skill task depressed sub-
jects were expected to have lower expectancies of
success and set lower goals on the task because of
their learned helplessness. This difference was pre-
dicted because of a low level of ego involvement.
With the ego involved task depressed subjects were

expected to overestimate their performance more than
nondepressed subjects.

The relationship between these tasks and goal
expectancy centers around the importance of the task
in defining the person's self esteem (i.e. ego
involvement). Performance on the chance task was
assumed to be of little importance in determining what
a person felt about himself. Therefore, goals and
probabilities of success should be of little importance
to the person and would not differ between depressed
and nondepressed subjects. Performance on the skill
task was thought to be of some (but minimal) impor-
tance in determining the subject's self concept.
Therefore depressed subjects were predicted to set
lower goals and to estimate lower probabilities of
obtaining these goals. Both of these underestimations
would be predicted by the learned helplessness model
and the negative triad of Beck (1967).

It was assumed that performance on the high ego
involved task was of greater importance to the subjects
in defining their competency and self esteem. If
depressed people expect to do less well on important
tasks than what they are capable of doing, then re-
inforcement would occur. In other words, they could
not keep their helpless cognitions because they would
prove their competency by obtaining their goal,

therefore goals are set by depressed people to "<u>avoid</u>"
reinforcement. The depressed person can set obtainable
goals on low ego involved tasks because the overwhelm-
ing amount of experience (i.e. a self concept of being
helpless) is contrary to the minimal reinforcement
obtained by achieving the goal and, therefore, the
reinforcement is discounted in light of greater evi-
dence to the contrary. The helpless cognitive set of
depressed subjects was expected to operate, however, on
the probability of obtaining their goal on the academic
examination.

CHAPTER II

METHODOLOGY

Subjects

Twenty six male and 26 female volunteer under-
graduate students at Oklahoma State University served
as subjects. All subjects were enrolled in summer
session psychology courses and received course credit
for participation in the experiment. The subjects were
assigned to six groups based on sex and their scores on
the Beck Depression Inventory. The eight males and
eight females who scored 13 or above on the inventory
(i.e. beyond 1 $\underline{SD}$ above the mean, $\bar{x}$ = 7.6) were assign-
ed to the high group, the low group was composed of
eight male and eight female subjects who scored 3 or
below (i.e. beyond 1 $\underline{SD}$ below the mean) and the middle
group included the eight males and eight females who
scored between 6 and 9 (i.e. within .5 $\underline{SD}$ of the mean).

Apparatus and Materials

Chance Task

The apparatus was a Carousel slide projector that
contained an X slide, an O slide and blank slides. A

blank slide was positioned between the X and O slides
and was projected onto the screen between trials. The
experimenter could covertly control whether an X or an
O would be presented on each trial by moving the tray
either forward or backward.

Skill Task

The apparatus was a modification of Sky's (1950)
apparatus as described by Miller and Seligman (1973).
The apparatus consisted of a three inch by four inch
movable wooden platform, resembling an elevator, con-
tained within a two foot high vertical frame. An eight
foot long nylon string, which the subject pulled to
raise the platform, was attached to the top of the
platform and passed through a pulley. So that the
experimenter could covertly control success and failure,
an electromagnet was inserted into a hole in the base
of the platform. Small strips of brass were connected
to the magnet and attached to either side of the wood
flange located at the back of the platform. Brass
strips lined the interior of the frame at the rear of
the apparatus and springs on the flange kept the strips
of brass in contact as the platform was raised and
lowered. Concealed wires connected the brass strips
to a power source and silent switch. The circut was
borken by the experimenter depressing the silent

switch under his desk. A $\frac{1}{2}$ inch steel ball bearing
was held in place by the magnet on top of the platform.
The top of the platform was sloped slightly forward so
that the bearing would roll off whenever the switch
was depressed. Subjects were required to lift the
platform to a specific point near the top of the appa-
ratus without letting the ball fall off.

Academic Examination

A standard test was administered to all students
in the class. The test was part of the regular class
schedule. The tests were either the first or the second
test given during the term. Subjects were selected
from five different psychology classes from the fresh-
man to junior level. The tests were either all
multiple choice or predominantly multiple choice with
some short answer questions.

Beck Depression Inventory
(Appendix A)

A 21-catagory multiple choice inventory was ad-
ministered to all students in the class. The choices
were arranged with the less severe statements first
followed by the more severe. The development of the
inventory is described by Beck (1967). Briefly, the

inventory was constructed as a device to differentiate between depressed and nondepressed psychotic patients. It was primarily clinically derived although it has been empirically validated. Correlations between inventory scores and clinical judgements of depth of depression are approximately .65 (Beck, 1967). Split-half reliability of the inventory was .93 (Beck, 1967) and Miller and Seligman report a test-retest reliability after 3 months of .74.

Procedure

Subjects were given the Beck Depression Inventory in their classes. The standard instructions of Beck (1967) were read to the students. The inventories were collected and scored by the experimenter. Within two days, or the next class session after the inventory was given, subjects were given the academic test. Before starting the test students were asked by another experimentor to estimate their percentage grade and their likelihood of achieving this expected grade on a scale from 0 (certain failure) to 10 (certain success).

Subjects were then assigned to groups based on their sex and depression inventory scores. Approximately one-half of the students in the classes did not participate in this study due to failure to complete the test and the depression inventory, not granting

permission for their test grade to be used in the study
or an over abundance of students in one group (either
sex or depression or both). Subjects were counter-
balanced to receive either the chance or skill task
first. Before each task instructions explaining the
task were read to the subjects by the second experi-
mentor. These instructions were taken from Miller and
Seligman (1973) and can be found in appendix B. After
it was assured that the subjects understood the task,
they were asked to estimate their expected competency
level over the ten trials and to predict the probability
of achieving this goal using a scale ranging from 0
(certain failure) to 10 (certain sucess). The expect-
ancy of success for individual trials was also obtained.

After completion of the first task, instructions
for the second task were given and the expected goal as
well as the expectancy of success for this goal and for
individual trials were obtained.

Before each trial the experimenter recorded the
subject's expectancy of success. Success and failure on
both tasks were controlled by the experimenter to in-
sure that all subjects had the same schedule of success.
Success and failure on both tasks were controlled by the
experimenter to insure that all subjects had the same
schedule of success. Subjects were given ten trials on
both tasks. Trials one and ten of both tasks were

selected in advance as success trials in order to use
the same dependent measures as Miller and Seligman (1973).
The same 50% success schedule was used for both tasks.
With the skill task the silent switch was depressed as
soon as the subject began to raise the platform on fail-
ure trials. The chance task was also controlled by the
experimenter, who could move the slide tray either
forward to the X slide or backward to the 0 slide.
Success on the chance task was defined as correctly pre-
dicting 4 or 5 out of 5 times the correct slide to be
presented for each trial. After both tasks subjects were
asked if they had any questions and told not to reveal
the design of the experiment to anyone. After all the
data were collected subjects were debriefed by written
explanations of the study handed out in class.

Dependent Measures

The three dependent measures used by Miller and
Seligman (1973) were used on the skill and chance tasks.
The first dependent variable was the difference between
the expectancies given prior to the first and second
trials, and is an index of the expectancy change follow-
ing success on the first trial. The second measure was
the final expectancy stated and is a measure of the
cumulative effects of success over all trials. The third
dependent measure was found by summing the absolute

values of the differences in expectancies between one
trial and next trial in which expectancy change was in
the appropriate direction (i.e. expectancy increased
following success and decreased following failure). A
fourth dependent measure was added which was thought
to be a more accurate index of the effects of success
and failure on expectancy change. The new measure was
found by taking the summation of appropriate changes in
expectancy and subtracting the total amount of inappro-
priate expectancy change (i.e. increase after failure
and decrease after success). These four dependent
measures were analyzed by four 3 x 2 x 2 split plot
analysis of variance (ANOVA) with high, medium and low
depression scores as one factor, type of task as the B
factor and sex as the C factor.

The other dependent measures, which were obtained
on all three tasks, were the estimate of the goal for
the task and the expectancy of reaching the goal. The
estimated and obtained test scores were analyzed by a
3 x 2 x 2 split plot ANOVA with depression, sex and
type of task as the factors.

Hypotheses

1. It was hypothesized that the results of Miller and Seligman (1973) would be replicated: (a) on the chance task the depression groups were not expected to differ in expectancy change and (b) the low depression group was expected to exhibit larger expectancy changes than the high depression group on the skill task.

2. (a) The low depression group was expected to have predicted and obtained scores on the academic test that did not differ significantly; (b) the high depression group was expected to have predicted and obtained scores that differed, with the predicted scores being greater; (c) no difference in estimated goals was expected on the chance task between the depression groups and (d) on the skill task, high depression subjects were expected to have lower estimated goals than the nondepressed group.

CHAPTER III

RESULTS

Due to the numerous analyses made, the results
will be presented corresponding to the order of the
hypotheses. In general the results of Miller and
Seligman (1973) were replicated. Table I presents
the means for the initial expectancy and the four
dependent measures on the skill and chance tasks. Be-
fore expectancy changes were compared, it was first
necessary to determine if there were differences be-
tween groups on the initial expectancies. A
depression X sex X task split plot analysis of vari-
ance (Table II) was conducted for initial expectancies.
The only significant effect was due to the task vari-
able ($\underline{F}_{1, 42} = 14.75$, $\underline{p} < .01$), with the chance task
eliciting greater expectancies of success than the
skill task.

Next, the expectancy changes were compared over
depression and sex groups and type of task. On all
four measures of expectancy change (Tables III, IV,
V and VI) the ANOVAS showed main effects due to type
of task, with greater expectancy changes for the skill
task than for the chance task (expectancy change from

TABLE I

MEANS AND STANDARD DEVIATIONS OF
DEPRESSION AND SEX GROUPS FOR
CHANCE AND SKILL
TASKS

	Low Depression			
	Male		Female	
	Skill	Chance	Skill	Chance
Initial Expectancy	.2.25 (1.49)	2.26 (2.39)	2.63 (2.50)	5.50 (2.62)
Expectancy Change from Trial 1 to Trial 2	4.50 (2.67)	1.13 (0.83)	5.63 (2.60)	1.13 (2.10)
Final Expectancy	5.38 (1.30)	3.63 (1.68)	6.25 (1.75)	5.63 (1.60)
Appropriate Expectancy Change	14.50 (7.09)	7.00 (3.37)	16.62 (7.40)	6.25 (3.54)
Total Expectancy Change	12.38 (9.18)	6.88 (3.60)	15.75 (8.17)	5.13 (4.64)
	Middle Depression			
Initial Expectancy	3.86 (3.00)	4.63 (2.00)	2.00 (1.60)	2.87 (2.30)
Expectancy Change from Trial 1 to Trial 2	2.75 (3.21)	0.00 (1.41)	3.75 (3.33)	1.63 (1.19)
Final Expectancy	5.25 (1.98)	5.00 (1.69)	4.63 (2.72)	4.00 (2.00)

TABLE I (continued)

Appropriate Expectancy Change	9.38 (4.56)	4.37 (2.92)	11.12 (6.47)	5.00 (1.85)
Total Expectancy Change	6.38 (6.70)	1.88 (4.52)	11.00 (6.55)	4.88 (1.18)

Low Depression

Initial Expectancy	2.50 (2.28)	3.50 (1.93)	1.88 (1.45)	3.00 (2.25)
Expectancy Change from Trial 1 to Trial 2	4.25 (2.31)	1.75 (2.31)	4.75 (1.75)	2.88 (2.03)
Final Expectancy	6.13 (1.88)	4.25 (2.76)	4.75 (1.75)	2.88 (2.23)
Appropriate Expectancy Change	11.13 (6.22)	4.13 (3.83)	12.05 (9.09)	5.13 (7.25)
Total Expectancy Change	9.88 (8.95)	3.25 (4.27)	8.88 (11.18)	2.12 (9.52)

TABLE II

ANOVA SUMMARY TABLE FOR
INITIAL EXPECTANCIES

Source of variation	df	MS	F
A(depression)	2	170.66	2.41°
C(sex)	1	33.84	0.47
AC	2	48.37	0.68
Subject w. group error	42	70.76	
B(task)	1	1073.34	25.69**
AB	2	15.13	0.36
BC	1	31.51	0.75
ABC	2	13.17	0.32
B x subject w. group error	42	41.79	

**p $<$.01

°p $<$.10

TABLE III

ANOVA SUMMARY TABLE FOR THE
DIFFERENCE BETWEEN THE
FIRST TWO EXPECTANCIES

Source of variation	df	MS	F
A(depression)	2	11.07	1.90
C(sex)	1	0.42	0.01
AC	2	20.39	3.50*
Subject w. group error	42	5.82	
B(task)	1	266.66	37.10**
AB	2	5.01	0.70
BC	1	5.04	0.70
ABC	2	4.20	0.58
B x subject w. group error	42	7.19	

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

TABLE IV

ANOVA SUMMARY TABLE FOR
THE FINAL EXPECTANCY

Source of variation	df	MS	F
A(depression)	2	4.34	0.82
C(sex)	1	1.50	0.28
AC	2	17.72	3.35*
Subject w. group error	42	5.29	
B(task)	1	32.66	13.82**
AB	2	4.14	1.75
BC	1	0.375	0.16
ABC	2	1.22	0.52
B x subject w. group error	42	2.36	

**p $<$.01

*p $<$.05

TABLE V

ANOVA SUMMARY TABLE FOR THE TOTAL
EXPECTANCY CHANGE

Source of variation	df	MS	F
A(depression)	2	117.16	2.40°
C(sex)	1	25.01	0.51
AC	2	0.67	0.01
Subject w. group error	42	49.03	
B(task)	1	1254.26	38.98**
AB	2	22.79	0.71
BC	1	12.76	0.40
ABC	2	3.29	0.12
B x subject w. group error	42	32.17	

**$p < .01$

°$p < .10$

TABLE VI

ANOVA SUMMARY TABLE FOR APPROPRIATE
EXPECTANCY CHANGE

Source of variation	df	MS	F
A(depression)	2	170.67	2.41^{o}
C(sex)	1	33.84	0.48
AC	2	48.37	0.68
Subjects w. group error	42	70.76	
B(task)	1	1073.34	25.69^{**}
AB	2	15.12	0.36
BC	1	31.51	0.75
ABC	2	13.17	0.31
B x subject w. group error	42	41.79	

[**]$p < .01$

[o]$p < .10$

trial 1 to trial 2, $F_{1,42} = 37.10$, $p < .01$; final

expectancy $F_{1,42} = 13.82$ $p < .01$; total amount of

appropriate expectancy change, $F_{1,42} = 25.69$, $p < .01$).

There were no other significant main or interaction

effects for either measure of total expectancy change.

On the final expectancy stated and on the difference

between the first two expectancies there were signif-

icant depression X sex interactions ($F_{2,42} = 3.35$,

$p < .05$; $F_{2,42} = 3.50$, $p < .05$ respectively). Further

analyses of these interactions (Figure 1 and Figure 2)

indicates that for both measures there are no differ-

ences over levels of depression for males. For females

there were significant differences for both indicies

between the low and high depression groups, with the low

groups obtaining higher expectancy changes (final ex-

pectancy, $q_{2,42} = 3.70$, $p < .05$; expectancy change from

trial 1 to trial 2, $q_{2,42} = 3.52$ $p < .05$). This trend

was present on the final expectancies but it was not

significant. No other significant differences pertain-

ing to these interactions were found. These results can

be understood only with reference to the interactions

of effects discussed below.

It was hypothesized that there would be no differ-

ences in expectancy change over depression groups on the

chance task and decreasing amounts of expectancy change

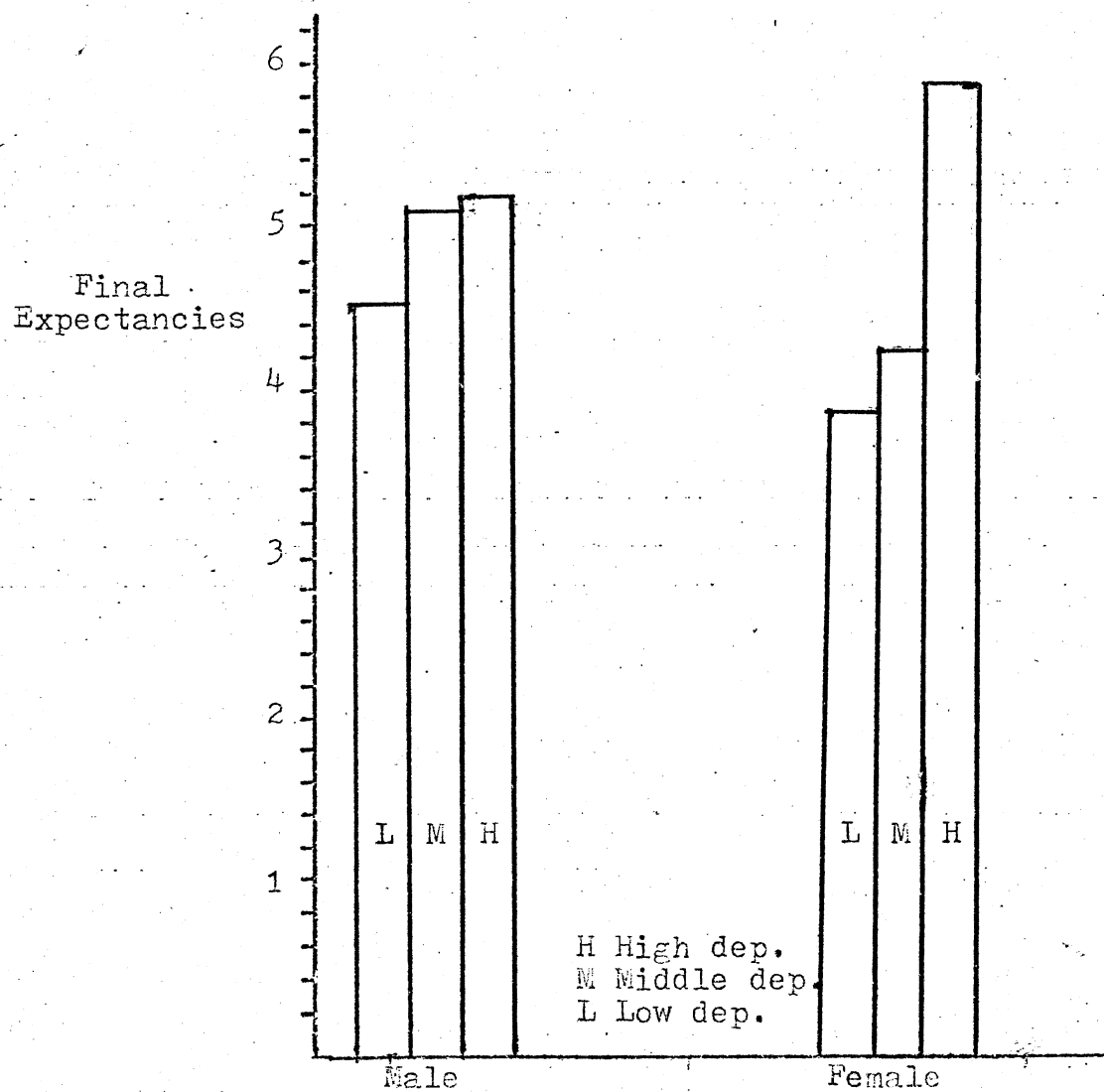on the skill task as level of depression increased.

Figure 1. Final Expectancies for Males and Females in Depression Groups
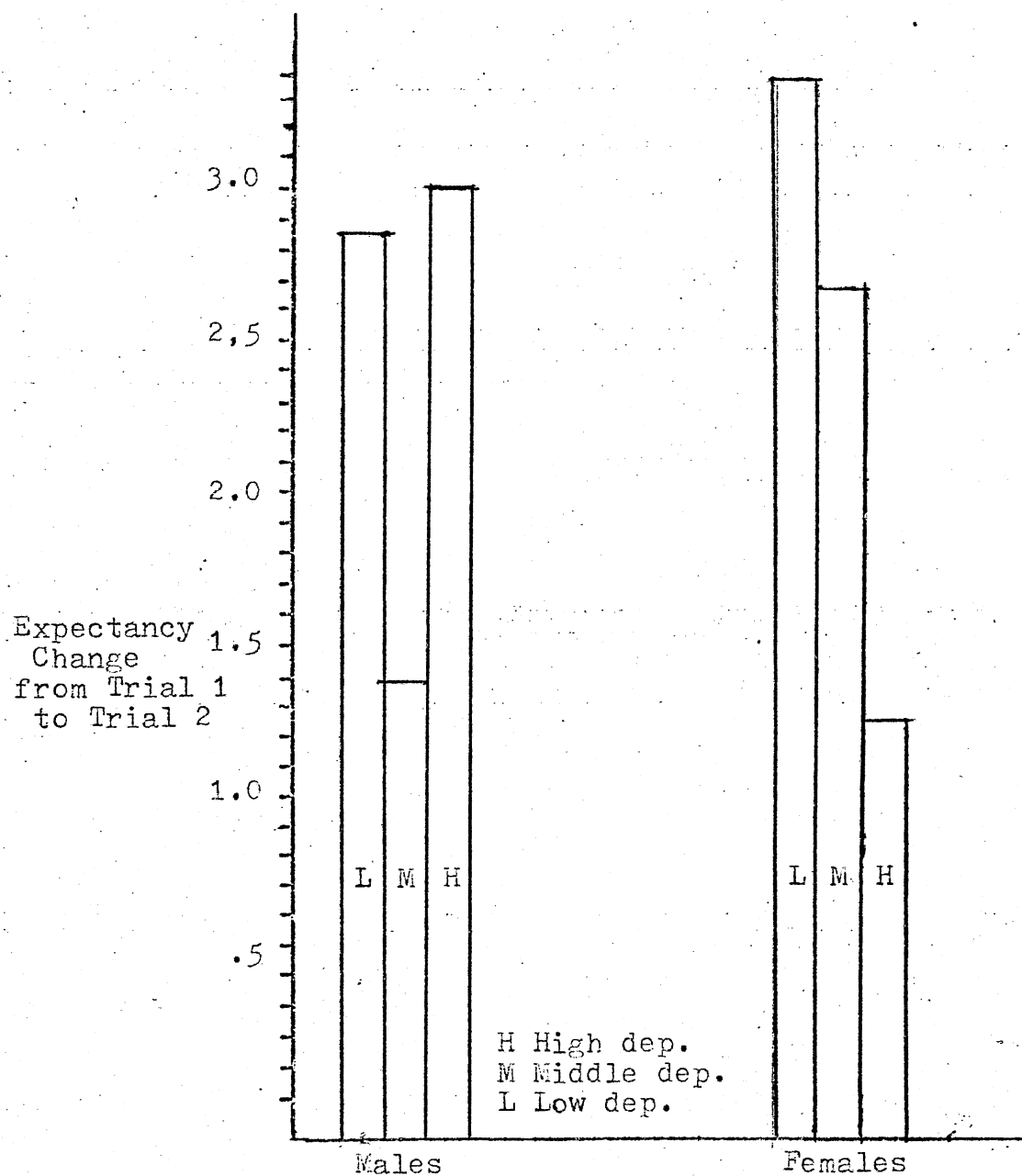
Figure 2. Expectancy Change from Trial 1
to Trial 2 for Males and
Females in Depression Groups

These results were not indicated by significant depression by task interactions, but because they were hypothesized further analyses were conducted (see Figure 3, 4, 5 and 6). On the final expectancy stated, the low depression group scored significantly higher than the high group on the chance task (t_{42} = 2.99, p < .01). No other differences on the chance task were significant. On the skill task the high and middle groups did not differ on any measure of expectancy change. On both measures of total expectancy change, and the difference between the first two expectancies, the low group showed greater expectancy changes than the middle group on the skill task (appropriate minus inappropriate expectancy change, t_{42} = 2.03, p < .05; total expectancy change, t_{42} = 2.25, p < .05; trial 2 minus trial 1, t_{42} = 196, p < .05). This trend was present for the final expectancy (Figure 3) although it was not significant. For appropriate minus inappropriate expectancy change (Figure 6), the high depression group had significantly lower scores than the low group (t_{42} = 1.76, p < .05). This trend was present for the other three measures, but not significantly so. No other significant differences on these four measures were found. Therefore, differences were not generally found across depression groups on the chance task, as predicted. On the skill
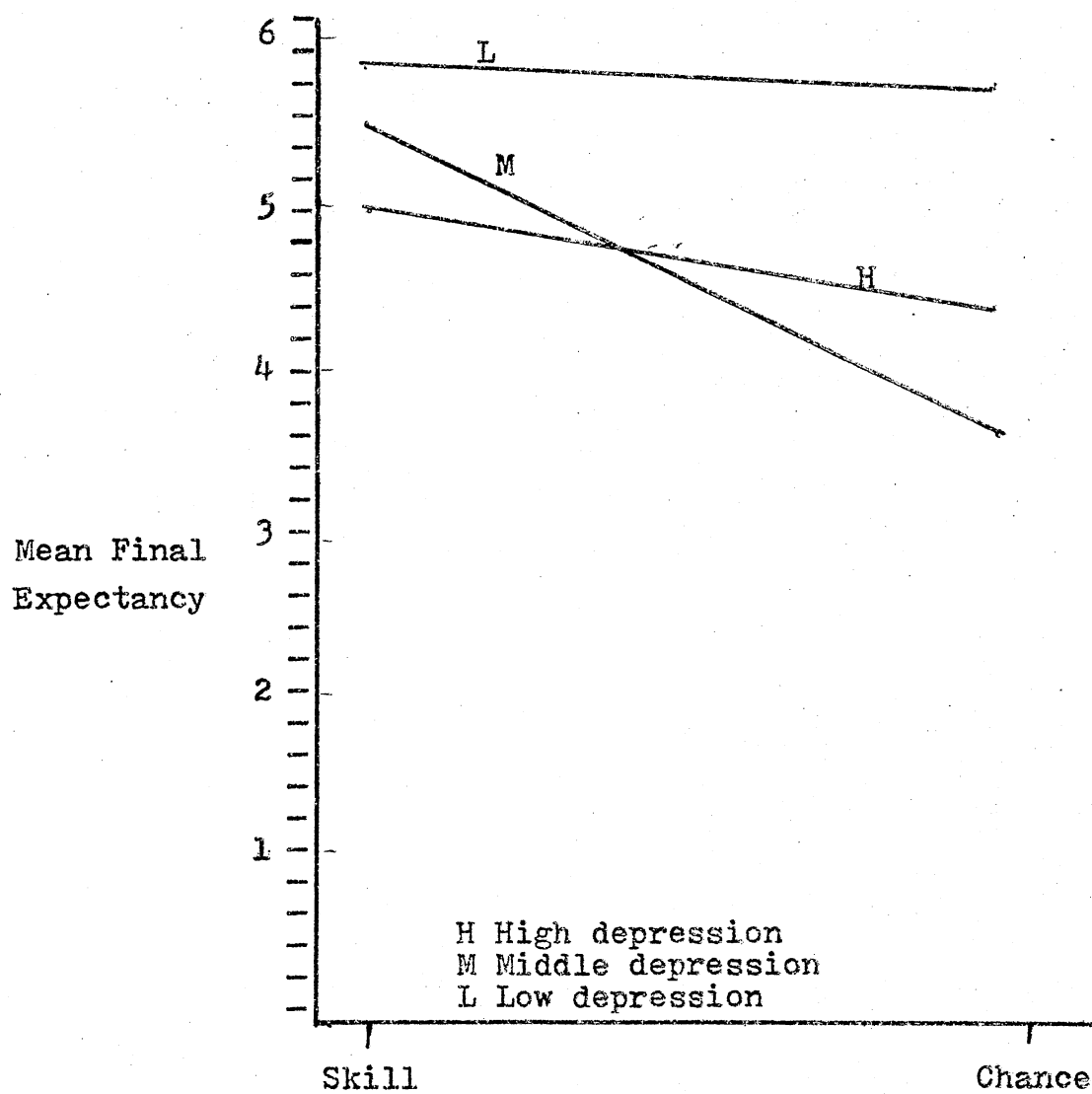
Figure 3. Mean Final Expectancy for Depression
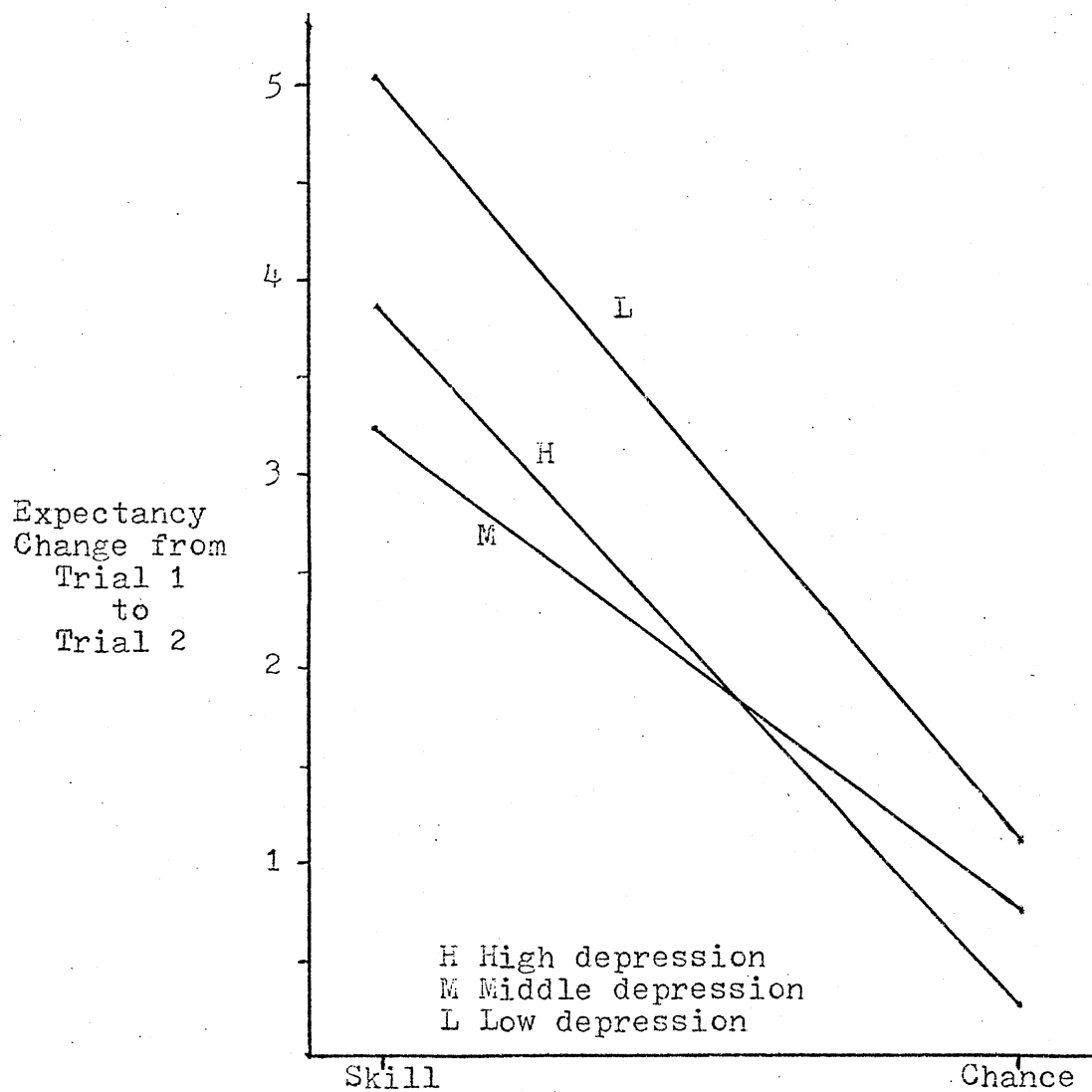Groups on the Tasks

Figure 4. Expectancy Change from Trial 1
to Trial 2 for Depression
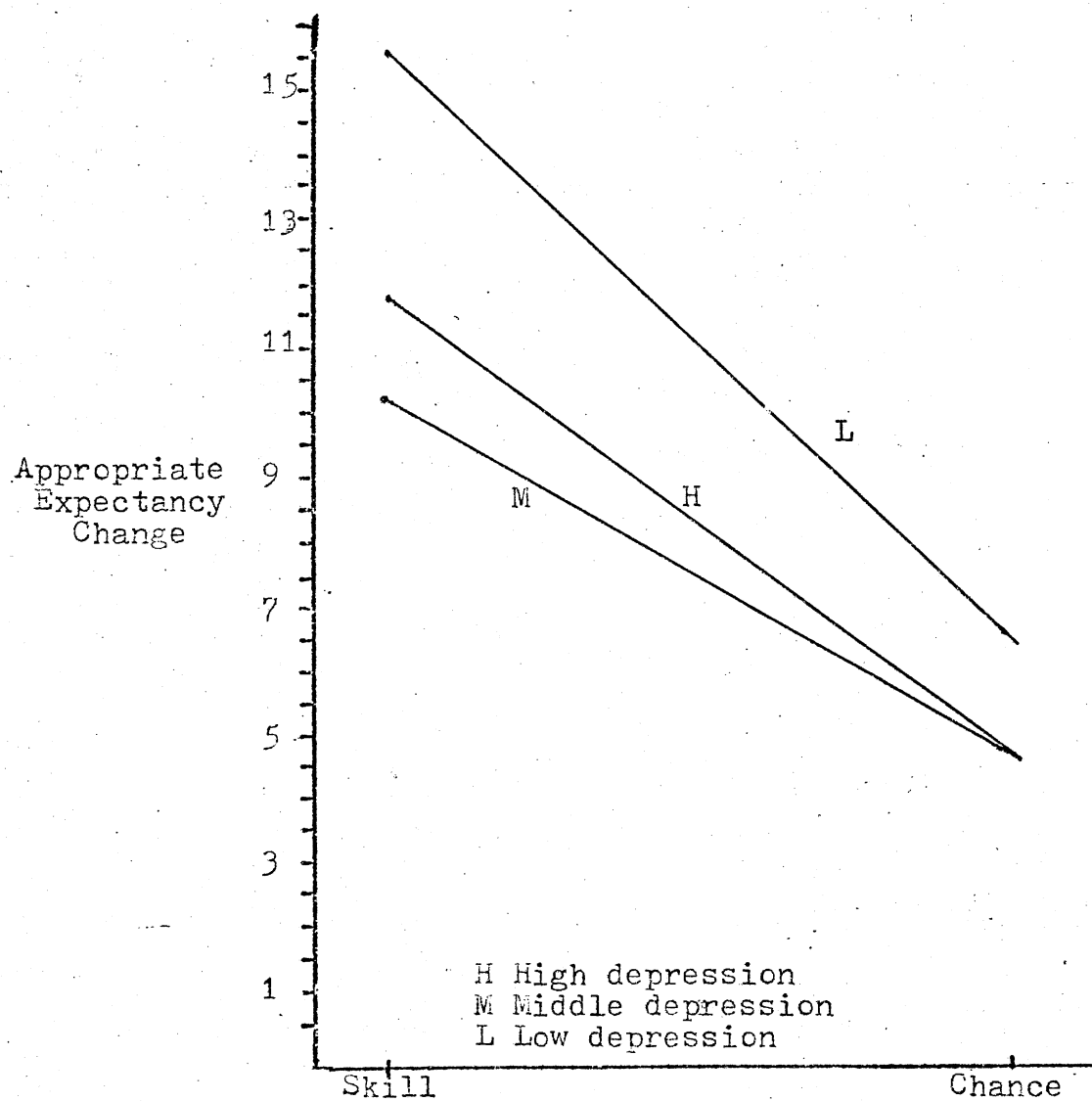Groups on the Tasks

Figure 5. Appropriate Expectancy Change for
Depression Groups on the Tasks
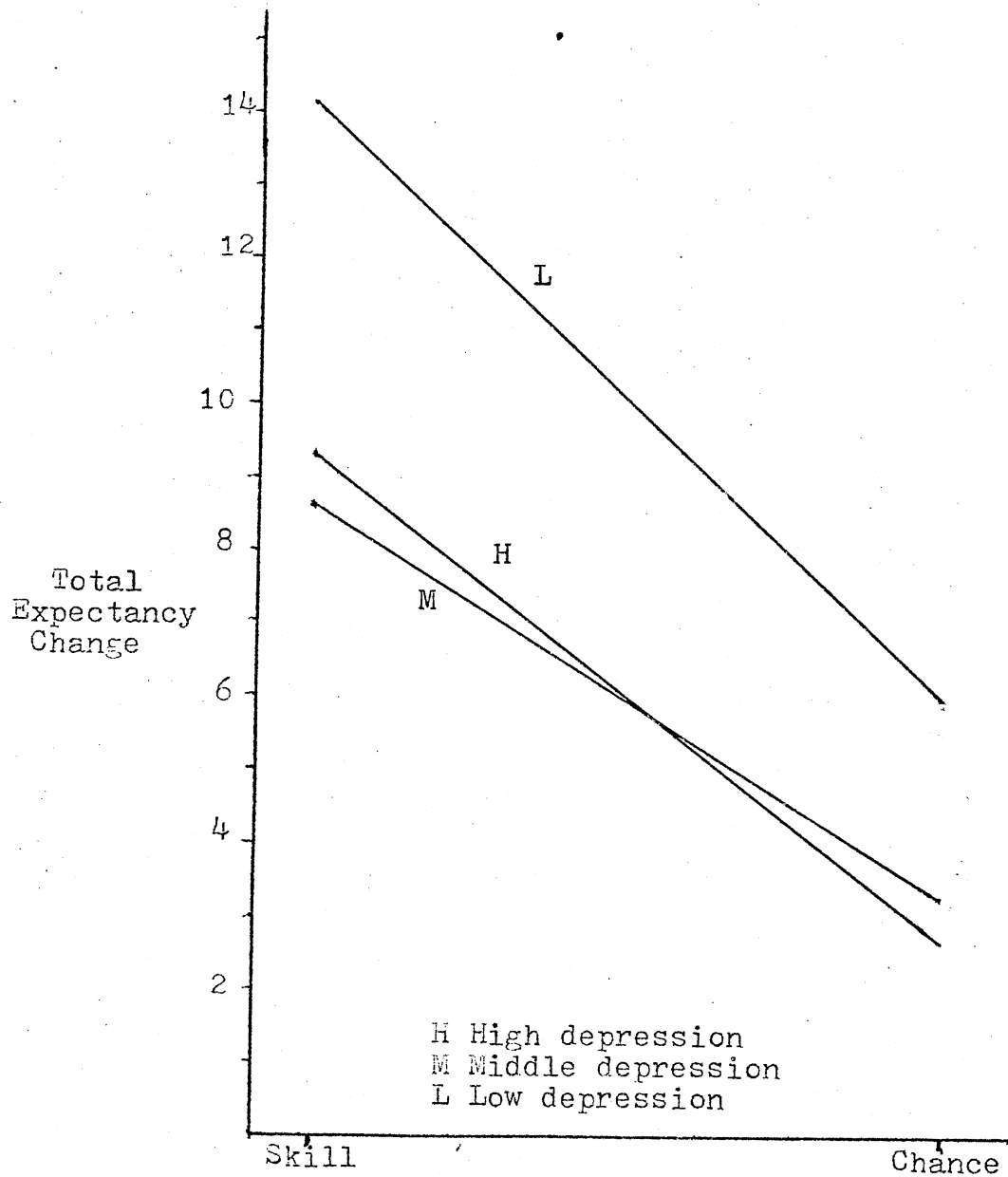
Figure 6. Total Expectancy Change for
        Depression Groups on the
        Tasks

test the helplessness model was supported in part, by the amount of expectancy change increasing as level of depression lessened from the middle to the low depression group.

The academic test scores (predicted and obtained) were analyzed to determine if the amount of goal over-estimation increased with level of depression. Table VII presents the means of the predicted and obtained test scores and the predicted and obtained goals for the chance and skill tasks. The ANOVA (Table VIII) with depression, sex and predicted vs obtained scores as factors, indicated a significant main effect with pre-dicted scores being higher than obtained scores ($F_{1,42}$ = 7.96, p < .01). A main effect for depression was also obtained ($F_{2,42}$ = 6.56, p < .01). Further analysis indicated both the middle and high groups scored significantly lower than the low group ($q_{2,42}$ = 4.76, p < .01; $q_{2,42}$ = 4.16, p < .01 respectively). There was no significant difference between the high and middle groups. The main purpose of analysing the test scores was to determine if the amount of over-estimation of obtained scores increased with greater levels of depression. This was found, as the difference between the predicted and obtained scores for the low group was nonsignificant (Figure 7). The middle and high groups, however, did predict significantly higher

TABLE VII

PREDICTED GOALS ON THE TEST,
CHANCE AND SKILL
TASKS

	Low Dep. Male	Female	Middle Dep. Male	Female	High Dep. Male	Female
Predicted Exam Scores	86.50 (5.45)	83.88 (8.04)	76.75 (18.50)	77.88 (15.41)	78.80 (14.67)	77.30 (10.30)
Obtained Exam Scores	84.70 (11.97)	83.00 (14.60)	67.25 (17.65)	70.50 (11.87)	68.60 (13.91)	76.10 (11.57)
Predicted Skill Task Goals	3.25 (1.91)	5.12 (1.64)	3.88 (1.25)	3.37 (1.30)	4.12 (1.96)	3.00 (2.00)
Predicted Chance Task Goals	2.88 (1.96)	5.25 (1.75)	3.25 (1.28)	3.50 (1.77)	4.12 (1.73)	3.25 (1.66)

TABLE VIII

ANOVA SUMMARY TABLE FOR PREDICTED
AND OBTAINED TEST SCORES

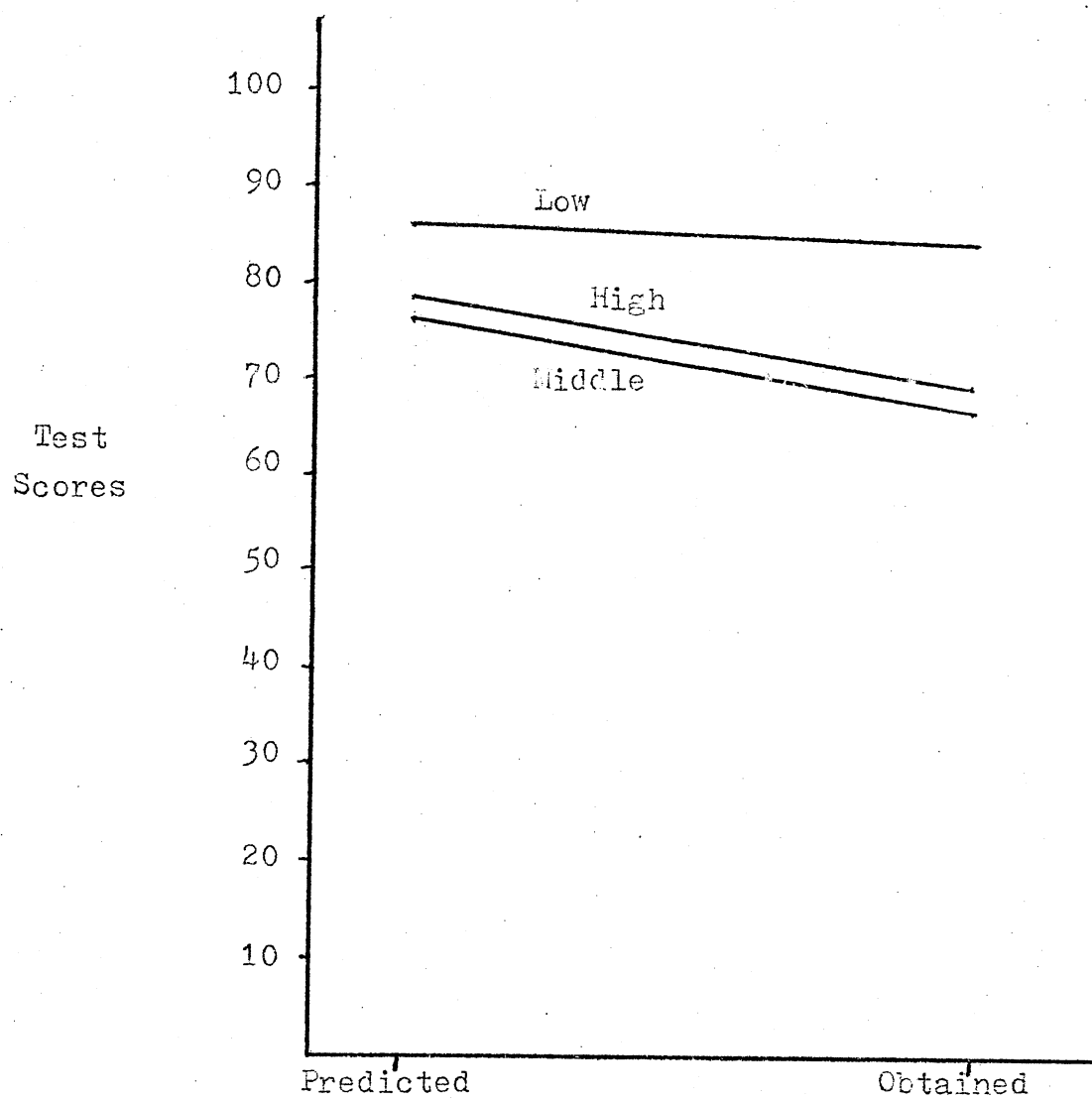| Source of variation	df	MS	F
A(depression)	2	1295.84	6.56*
C(sex)	1	4.59	0.02
AC	2	45.84	0.23
Subject w. group error	42	197.38	
B(obtained vs predicted)	1	765.01	7.96*
AB	2	112.95	1.18
BC	1	33.84	0.35
ABC	2	10.40	0.11
B x subject w. group error	42	96.11	

*$p < .05$

Figure 7. Mean Predicted and Obtained Test
Scores for Depression Groups

scores than they obtained (t_{42} = 2.31, p < .05;
t_{42} = 2.20, p < .05, respectively).

Analysis of the predicted goals for the chance
and skill tasks was done to determine if goal setting
on these tasks varied with level of depression (Table
IX). The ANOVA used to compare goals for the skill
and chance tasks across sex and depression groups
revealed a significant depression by sex interaction
($F_{2,42}$ = 4.07, p < .05, see Figure 8). No other main
or interaction effects were significant. Further
analysis of the depression X sex interaction indicated
that low depression females made higher predictions
than low depression males ($q_{2,42}$ = 4.05, p < .01) and
medium and high scoring females ($q_{2,42}$ = 3.27, p < .05;
$q_{2,42}$ = 3.92, p < .01, respectively). Further analy-
sis was done to test the hypotheses that no differences
would exist due to depression on the chance task but
that there would be an inverse relationship between
depression and height of predicted goal for the skill
task. No differences were found for the skill condition.
In the chance condition there were no differences be-
tween the high and middle groups; the low group, however,
made significantly higher predictions than the middle
group (t_{42} = 2.03, p < .05). There were no other sig-
nificant differences among the predicted scores.

TABLE IX

ANOVA SUMMARY TABLE FOR PREDICTED
GOALS ON TASKS

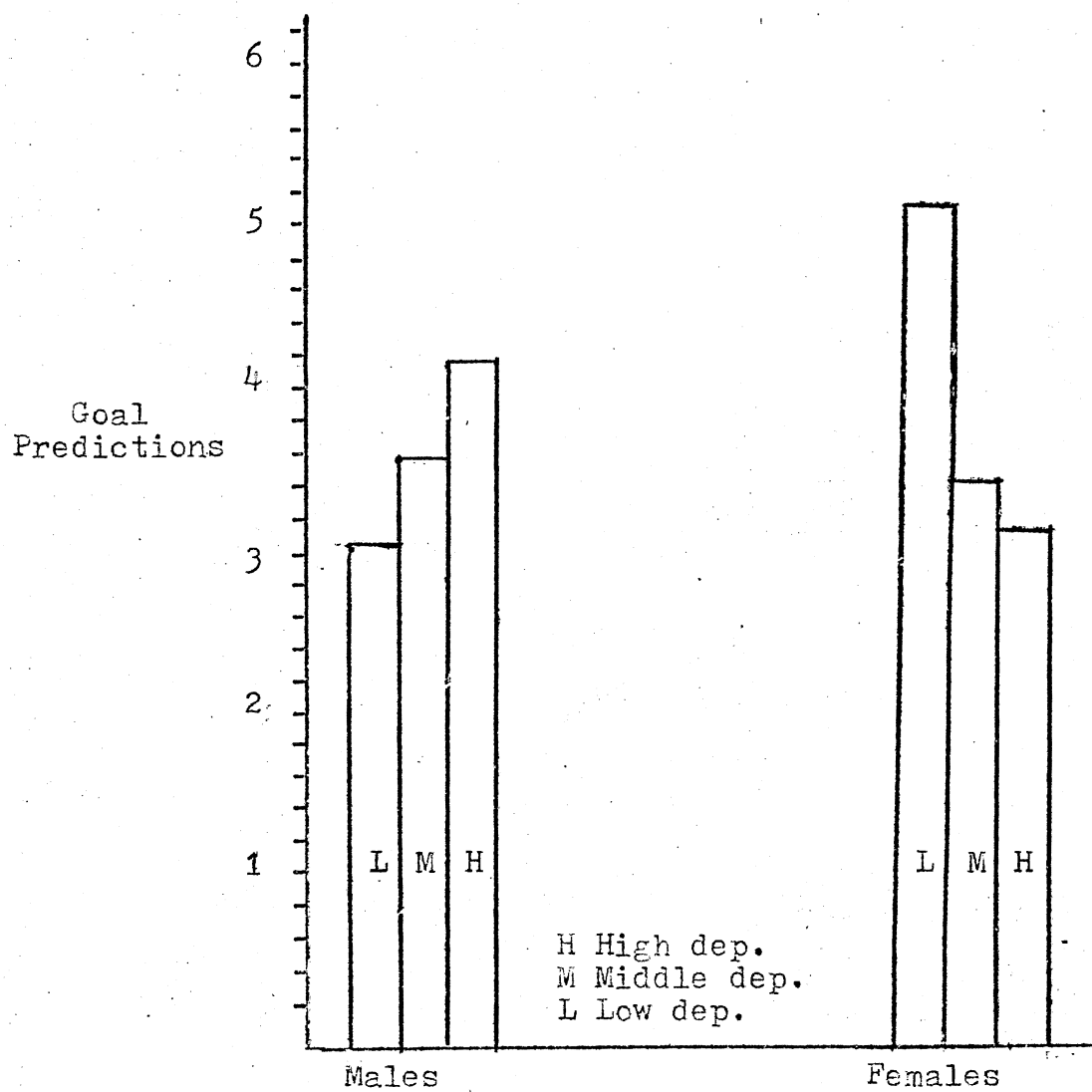| Source of variation	df	MS	F
A(depression)	2	3.50	0.79
C(sex)	1	2.67	0.60
AC	2	20.79	4.70*
Subject w. group error	42	4.43	
B(task)	1	0.16	0.10
AB	2	0.29	0.18
BC	1	1.15	0.92
ABC	2	0.12	0.08
B x subject w. group error	42	1.63	

*$p < .05$

Figure 8. Goal Predictions for Males and
Females on the Tasks for
Depression Groups

CHAPTER IV

DISCUSSION

The helplessness model for depression was in part supported by this study. The low depression group did not express helplessness (i.e. they reported high expectancies of success) but the middle and high depression groups exhibited a failure to perceive themselves as being able to control their environment. In other words, depressed people reported low expectancies of success when control is perceived by nondepressed people. The middle and high groups did not "learn" that they were not helpless in the skill task but the low depression group acquired this knowledge. The helplessness model was only partially supported as the middle and high groups did not express differing levels of helplessness, as would be predicted from the differing levels of depression.

It was also found that levels of depression are also related to the accuracy with which one sets goals for himself on important tasks. The low depression group had an accurate estimate of their ability on the academic test (i.e. similar predicted and obtained

scores). The middle and high groups, however, signif-
icantly overestimated their abilities on the test
(predicted scores being higher than obtained). Again
the overestimation hypothesis for depression was only
partially supported, as the middle and high groups did
not differ in amount of inaccuracy as would be pre-
dicted by the model. The similarities of the middle
and high groups are discussed in detail below.

Before expectancy changes are discussed, it is
thought that the differences in initial expectancy on
the chance and skill tasks must be examined to determine
if the amount of change was affected by differing
starting points. The differences on initial expectancy
indicates that subjects, naive to the tasks, thought
that the chance task would be less difficult than the
skill task. While this difference was statistically
significant, it is not thought to be great enough, in
absolute terms, to affect expectancy change in a mean-
ingful way. The only possible contribution this
difference in initial expectancy could have on
expectancy change was to create a ceiling effect on
the chance task. It is unlikely that the greater
expectancy changes on the skill task estimates can be
attributed to a ceiling affect in the chance condition.
The initial score for the chance task was low (3.68 on
a scale to 10) and large changes in expectations did

occur on the chance task. Then, despite this initial difference in expectancy, it is thought that the expectancy changes can be meaningfully compared and discussed.

As hypothesized there were no differences on the chance task between depression groups for the two measures of total expectancy change and the difference between the first two expectancies. For some unknown reason, however, the low depression group stated higher final expectancies than the high depression group. From three of the four measures it can be inferred that level of depression did not significantly affect the subjects' perception of competancy on the chance task. In other words, subjects reported similar levels of helplessness over control of the task irrespective of depression levels. The results of expectancy change on the chance task are supportive of the helplessness model.

On the skill task, however, the amounts of expectancy change are supportive of the model only in part. As predicted by the helplessness model, there was an inverse relationship between depression scores and expectancy change for the low and middle groups. The high group, which did not follow this trend fully, expressed scores similar to, or slightly (but not significantly) greater than the middle group. The

question arises as to why, if the helplessness model
is valid, the most depressed subjects did not express
the most helplessness. The helplessness model of
depression has been supported by Miller and Seligman
(1973) and by the middle and low groups of this study.
But a similarity between middle and high groups has
been found elsewhere. Lack of differences on a depen-
dent measure between high and middle groups in
contrast to significant differences between these
groups and a low depression group were found by
Cysewski, Weiner and Younger (1975) on a paper and
pencil test concerned with the number and intensity of
social relationships.

Two possible explanations may exist for similar
behavior of the middle and high depression groups.
First, the helplessness model may be valid for a rel-
atively narrow and mild range of depression and not
applicable to the more severe depression. The high
depression group of Miller and Seligman had a mean
score on the Beck Depression Inventory of 12.4. This
score would place them midway between the middle
(X = 8.1) and the high (X = 16.4) groups of the pre-
sent study. It is possible that the more extreme
scores of the high group in the present study may
account for the apparent curvilinear relationship be-
tween depression and helplessness. Further research

should be conducted to determine if increased helpless-
ness is representative of depression in only a narrow
and mild range or if helplessness increases with level
of depression throughout the continuum.

The second explanation centers around the nature
of the subject population. Two lines of thought emerge
here. First, it may be that students who are "helpless"
become defensive when directly questioned about their
abilities and their confidence in their abilities. It
is not unreasonable to think that through years of
evaluation by authority figures students learn to
present their best side and, when feeling inadequate,
to bluff authority figures for desired rewards. This
explanation may be discounted in the present study
because, if defensiveness occurred on the experimental
tasks, it should also have been manifested on the
Depression Inventory. There is no reason to believe
that a student would admit to the socially undesirable
symptoms of depression, but would exagerate his feel-
ings of competency on tasks which are relatively
meaningless to him.

It may be that the nature of the subject population
can explain the finding that the most depressed group
did not express appropriate helplessness. It is sug-
gested that there is a minimum level of competency,
social skills, confidence, etc. required for continued

enrollment in college, and that people not posses-
sing these tend to drop out or not enroll in college.
It is possible, therefore, that people in the high
depression group of this study were not representative
of the population of people scoring between 13 and 27
on the depression inventory in their skills, competency,
etc. It is also possible that the middle and low
groups were more representative of their populations.
The fact the high group was most difficult to find
qualified subjects for lends support to a proposed
selection of a "nonhelpless" group of depressed students;
the students who continue in college have the necessary
skills, confidence, etc. It is suggested that some
minimal level of confidence (maximum level of helpless-
ness) for continued enrollment may lie around the level
represented by the middle group. If this is so then
the high group in this study was composed of those
people with high depression scores but with higher
skills and confidence than is true for most people who
score in this range on the depression inventory. It is
interesting to note the slight increase in expectancy
change from the middle to the high group on the skill
task. This increase may reflect an increase in confi-
dense necessary to counterbalance the other manifes-
tations of depression detrimental to remaining in
school.

The sex by depression interactions for final expectancy, expectancy change from trial 1 to trial 2, and perhaps goal predictions for the chance and skill tasks, indicated that females, but not males, had scores inversely proportional to their depression level, imply that males are more prone to selection by competancy than females. Males may require, in other words, more confidence in their abilities than females.

These results, while generally supportive of the helplessness model, also raise some questions. Students who score high on the Beck Depression Inventory (13-27) express helplessness similar to those students who score less on the inventory (6-9). Therefore, while level of depression increases, the level of helplessness may not. As stated above, the lack of relationship may indicate that (a) helplessness is not representative of more depressed college students or (b) the relationship between helplessness and depression is not isomorphic (one dimension may vary while the other holds constant). The lack of a clear-cut helplessness-depression relationship, if such exists, is not surprising due to the crudeness of the measurement techniques involved (e.g. helplessness measured by expectancy change). Further research should be conducted to test the help-lessness model using other techniques to measure both depression and helplessness.

This study was composed of two parts. First, the Miller and Seligman (1973) study was replicated. Next depression was examined as a factor involved in differential goal setting. It was hypothesized that goals for the chance task would not differ over depression groups but in the skill condition there would be an inverse relationship between level of depression and predicted goals. These hypotheses were not supported. The lack of congruence between these data and the above results supporting the helplessness model might be explained by examining the subjects' familiarity with the tasks. The tasks involved were ones with which the people had little experience. Therefore, asking for goals at the beginning of the study required people to guess how well they thought they could do in unfamiliar situations. The lack of a relationship between depression level and height of predicted goals in fact support the helplessness model, for if depression were manifested in a gross negative view of the self, then one would expect differences in all goals, (i.e. I am bad and cannot succeed any where, any time). But the depressed subjects' cognitive distortion was limited to failure to learn from success, i.e. to learn they were not helpless. A more global negative view would cause depressed subjects to predict lower goals on the tasks.

The chance and skill tasks differ from the academic examination in that college students have a long history of familiarity with tests. Because of this familiarity, the students did not set goals from a naive position as they did on the skill and chance tasks. Therefore, one would expect the goals set on the academic exam to manifest the cognitive distortion of helplessness, if it were present. The results obtained were contradictory to the helplessness model of depression, since the more depressed subjects did not express lower goals on the test (signifying helplessness). Helplessness is a "specific cognitive distortion of one's own responses to change the environment..." (Miller & Seligman, 1973, p62). In other words, one should underestimate his or her own abilities, viewing the world through a helpless "set". The low depression group predicted their approximate scores on the exam. This group can be viewed as having accurate perceptions of their abilities. If helplessness were operating, the middle and high groups should have underestimated their obtained scores. Because this did not occur, one must conclude the helplessness was not functioning in the task. As predicted, the more depressed subjects scored lower on the test than the goals which they set for themselves on the exam. It may be that this failure to obtain important goals

which the subjects set for themselves represents the kind of support that is needed to keep helplessness functioning on less important tasks.

It could be argued that the lack of overestimation for the low group may be due to a ceiling effect, i.e., their competency levels were so near the top of the scale they could not overestimate their scores. It is true that the middle and high groups did have more "room" to overestimate their obtained test scores, but the largest predicted - obtained difference was 8 points. The low group had enough room to overestimate their scores by twice this amount (i.e. 16). Therefore, no ceiling effect is suggested. It is interesting to note the similarities between the middle and high groups on the obtained and predicted test scores. This similarity possibly occurred because of the above dis-cussed selection process which may weed out depressed people who do not have the necessary skills to compete in college.

The results obtained on the academic examination are supportive of a reinforcement model of depression. The low depression group obtained higher scores than the middle and high groups. It can be assumed that higher scores on a test are more reinforcing than lower scores. Reinforcement has two related dimen-sions. First, there is an overt aspect of

reinforcement. This aspect can be easily measured (Lewinsohn & Libet, 1972). In the present study the overt dimension of reinforcement included the obtained scores on the examination. Another dimension of reinforcement is the subjective aspect. This aspect is determined not by absolute values, but is intimately related to a person's subjective goals. In the present study, the subjective aspect of reinforcement was measured by the difference between the predicted and obtained scores on the academic test. Both of these aspects appear to be inversely related to depression, i.e., the more reinforcement a person receives the less depressed he will be. The present study did not, however, adequately separate these two dimensions of reinforcement. Further research should hold each of these aspects constant and let the other aspect vary to determine each aspect's unique contribution to depression.

The helplessness model of depression was supported, with reservations. On the chance task, where subjects had no control over their success, all groups expressed similar levels of expectancy change, indicating they perceived themselves as having little control over the task. On the skill task the low depression group perceived control over the task, as implied by the large expectancy of success changes.

The middle and high groups, however, expressed smaller
amounts of expectancy change, indicating they per-
ceived little control over the task, i.e., they were
"helpless". Reservations with the helplessness model
exist because the high group did not express more
helplessness (i.e. less expectancy change) than the
middle group. The results also suggest that helpless-
ness may be manifested only on tasks in which the
people have minimal concern (or ego involvement). On
important tasks, it was found that depresses people
set inordinately high goals for themselves.

It is proposed that depression manifests itself in
one's view of his competancy by extreme ratings, with
the importance of the task determining to which extreme
the person will set his goal. In tasks with which the
person has minimal involvement, depression will be shown
by helplessness and low goal setting. In a few impor-
tant areas, a depressed person will view his competan-
cy at the other extreme and set inordinately high
goals. The implications of this view to therapy with
people is two fold. First, in areas of low importance
to the person, the therapeutic goal would be to get
the client to "test reality" and realize that he is not
as helpless as he perceives himself. Concurrently, it
must also be conveyed to the client that he is estab-
lishing inordinateky high goals in important areas and

to get him to reduce these high goals. It follows
that if the helpless self concept is changed without
altering goals in ego-involved areas, then helpless-
ness should return.

Another implication of this study is the neces-
sity of using caution in generalizing results from
animal studies to humans. As shown here the higher
mental processes of people raise issues not found when
studying other organisms. For example, it is unlikely
that lower organisms have a self concept defined by
the goals which they established. Humans, however,
define themselves in many ways (e.g. I am a good
golfer, a good cook, a poor swimmer, etc.) which are
related to goals in each specific area. If a person
fails to obtain one of his goals (fails to behave in
accord with an aspect of his self-concept) the sub-
jective aspect of reinforcement is not obtained. In
depression, setting too many unrealistically high
goals (an exaggerated self concept) may be a "rever-
verating mechanism" not found in helpless animals that
keeps a person depressed.

CHAPTER V

SUMMARY

The learned helplessness model of depression states that depressed people view themselves as less effective than normals in controling their environment. Helplessness should be manifested by depressed people setting lower goals or specifying lower likelihoods of obtaining a specific goal. It was predicted that helplessness would not be expressed universally by depressed people. On tasks important for self esteem, depressed people were predicted to set inordinantly high goals. Forty eight students, divided into six groups based on depression scores and sex, were asked to state their probabilities of succeeding on a chance task and a skill task and to predict how well they would do on an academic examination. The results indicated no differences in expectancies of success on the chance task. On the skill task helplessness was expressed by the more depressed students, who did not increase their expectancy of success as they succeed on the task. On the test the more depressed students predicted higher scores than they obtained, while there was no difference between the predicted and obtained scores for non-

depressed students. Depression was expressed in areas of little importance to the person by helplessness, but in the few important areas, depression was manifested by inordinantly high expectations.

The results raise the question of the validity of using a student population for studying depression or other psychopathologies. It was suggested that the rigors of college cause an attrition of students who have the characteristics of more depressed people. The students who remain in school, while perhaps scoring high on a depression inventory, are not representative of the population of people with similar scores.

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APPENDIXES

APPENDIX A

BECK DEPRESSION INVENTORY

A.

0   I do not feel sad.

1   I feel sad or blue.

2a I am sad or blue all the time and I can't snap
out of it.

2b I am so sad or unhappy that it is quite painful.

3   I am so sad or unhappy that I can't stand it.

B.

0   I am not particularly pessimistic or discouraged
about the future.

1   I feel discouraged about the future.

2a I feel I have nothing to look forward to.

2b I feel that I won't ever get over my troubles.

3   I feel that the future is hopeless and that things
cannot improve.

C.

0   I am not particularly dissatisfied.

1a I feel bored most of the time.

1b I don't enjoy things the way I used to.

2   I don't get satisfaction out of anything any more.

3   I am dissatisfied with everything.

D.

0   I do not feel like a failure.

1   I feel I have failed more than the average person.

2   I feel I have acomplished very little that is
worthwhile or that means anything.

E.

0 I don't feel particularly guilty.

1 I feel bad or unworthy a good part of the time.

2a I feel quite guilty.

2b I feel bad or unworthy practically all the time now.

3 I feel as though I am very bad or worthless.

F.

0 I don't feel I am being punished.

1 I have a feeling that something bad may happen to me.

2 I feel I am being punished or will be punished.

3a I feel I deserve to be punished.

3b I want to be punished.

G.

0 I don't feel disappointed in myself.

1a I am disappointed in myself.

1b I don't like myself.

2 I am disgusted with myself.

3 I hate myself.

H.

0 I don't feel I am any worse than anybody else.

2 I am critical of myself for my weaknesses or mistakes.

2 I blame myself for my faults.

3 I blame myself for everything bad that happens.

I.

0 I don't have any thoughts of harming myself.

1 I have thoughts of harming myself, but I would not

carry them out.

2a I feel I would be better off dead.

2b I feel my family would be better off if I were dead.

3a I have definite plans about committing suicide.

3b I would kill myself if I could.

J.

0 I am no more irritated now than I ever am.

1 I get annoyed or irritated more easily than I used to.

2 I feel irritated all the time.

3 I don't get irritated at all at the things that
used to irritate me.

K.

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now. I can't stop it.

3 I used to be able to cry but now I can't cry at all
even though I want to.

L.

0 I have not lost interest in other people.

1 I am less interested in other people now than I
used to be.

2 I have lost most of my interest in other people and
have little feelings for them.

3 I have lost all my interest in other people and
don't care about them at all.

M.

0 I make decisions about as well as ever.

1 I try to put off making decisions.

2 I have great difficulties in making decisions.

3 I can't make any decisions at all any more.

N.

0 I don't look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel that there are permanant changes in my appearance and they make me look unattractive.

3 I feel I am ugly or repulsive looking.

O.

0 I can work about as well as before.

1a It takes extra effort to get started at doing something.

1b I don't work as well as I used to.

2 I have to push myself very to do anything.

3 I can't do anything at all.

P.

0 I can sleep as well as usual.

1 I wake up more tired in the morning than I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up early every day and can't get more than 5 hours sleep.

Q.

0   I don't get more tired than usual.

1   I get tired more easily than I used to.

2   I get tired from doing anything.

3   I get too tired to do anything.

R.

0   My appetite is no worse than usual.

1   My appetite is not as good as it used to be.

2   My appetite is much worse now.

3   I have no appetite at all now.

S.

0   I haven't lost much weight, if any, lately.

1   I have lost more than 5 pounds.

2   I have lost more than 10 pounds.

3   I have lost more than 15 pounds.

T.

0   I am no more concerned about my health than usual.

1   I am concerned about aches and pains or upset
    stomach or constipation.

2   I am so concerned with how I feel or what I feel that
    it's hard to think of much else.

3   I am completely absorbed in what I feel.

U.

0   I have not noticed any recent change in my interest
    in sex.

1   I am less interested in sex than I used to be.

2 I am much less interested in sex now.

3 I have lost interest in sex completely.

APPENDIX B

TASK INSTRUCTIONS

Skill Instructions

This task is designed to see how well you can
succeed in raising the platform without letting the
ball fall off and also to see how accurate you are in
estimating your success. The object of the task is for
you to try, by pulling this string to raise the ball
on the platform as high as possible before the ball
falls off. You will be given 10 trials. The apparatus
is built with a slight tilt forward so that the ball
is more likely to fall off the platform the higher it is
raised. Of course, if you raise the platform very
quickly, the ball cannot fall off because of its
momentum. But this is a skill task, therefore, the
platform must be raised slowly. Now, in order to be
successful, you must raise the platform and the ball to
the level marked by the green arrow. (The experimenter
demonstrates the raising of the platform without the
bearing.) Are there any questions?

Chance Instructions

This task is designed to see how well you can do
at telling me beforehand which of two kinds of slides
will appear next on the screen and also to see how ac-
curate you are in estimating your success. In this
projector we have a number of slides marked with either

an X or an O. These slides are divided into groups of
five. Each set of five slides was shuffled before being
placed into the projector. There are not necessarily
the same number of Xs or Os in each set. Before we
begin, I will select at random one of these sets of
five slides and position it for projection. You are
to tell me whether the first slide in the group is an
X or an O. In this way we will go through all five
slides in the group.

Each set of five slides will constitute one trial.
We will continue until we have gone through 10 trials.
I will also be keeping score and will let you know how
well you did at the end of each trial.

Now, in order to be successful on a trial you must
get at least four slides right. In other words, four
or five slides right out of the five slides in a set
will mean that you have success. Any number of slides
correct below four will mean that you have not suc-
ceeded. Are there any questions?

Certainty Instructions

Before each trial, I would like you to estimate
how certain you are that you can raise the platform to
the level marked by the green arrow without letting the
ball fall off (for the chance task, how certain are
you that you can correctly predict four or five out of

the five slides). You are to estimate your degree
of certainty of success on a scale from 0 to 10. If
you feel fairly certain that you will succeed, you
may rate yourself with a high number such as a 9 or 10.
If you're moderately sure that you will succeed, you may
rate yourself with a number near the center of the scale
such as a 4, 5, or 6. If you feel pretty sure that you
will not succeed, you may rate yourself with a low
number such as a 0 or 1. You may use any number on
the scale from 0 to 10 inclusive. It is important
that you select your estimates carefully and that they
correspond closly with how certain you really are.
They should be an accurate description of the degree
to which you really feel you will or will not succeed.

APPENDIX C

TABLE OF POST HOC TESTS

TABLE X

SUMMARY TABLE FOR TUKEY'S POST HOC TESTS

Sex by depression interaction for the goals

on the tasks

Male high - Male middle	1.07
Male high - Male low	2.02
Male high - Female high	1.90
Female high - Female middle	0.59
Female high - Female low	3.92*
Male middle - Male low	0.95
Male middle - Female middle	0.24
Female middle - Female low	3.27*
Male low - Female low	4.05**

Sex by depression interaction for the final

expectancy

Male high - Male middle	0.12
Male high - Male low	1.12
Male high - Female high	3.50
Female high - Female middle	1.97
Female high - Female low	3.70*
Male middle - Male low	1.08

TABLE X (continued)

Female middle - Female low	3.45
Male low - Female low	2.50

Sex by depression interaction for the difference
between the first two
expectancies

Male high - Male middle	0.30
Male high - Male low	2.71
Male high - Female high	2.92
Female high - Female middle	1.16
Female high - Female low	3.52*
Male middle - Male low	2.39
Male middle - Female middle	2.17
Female middle - Female low	2.38
Male low - Female low	0.94

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

VITA

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