PREDICTION OF SUSCEPTIBILITY TO
LEARNED HELPLESSNESS

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

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A fifty-item questionnaire, representing personality attributes related to behaviors used to index the phenomenon of learned helplessness, was administered to 152 undergraduate students. Based upon factor analysis of the results, six subscales were developed to predict latency of response, failures to solve, and trials to task criterion of anagram solving, this being used to index the phenomenon of learned helplessness. The subscales comprised a ninety-item questionnaire given to seventy-seven undergraduate students three days before participation in the experiment proper. The subjects attempted to solve Levine (1971) discrimination problems (designed to be insolvable) and then attempted to solve patterned anagrams. Contrary to the learned helpless model of depression (Miller and Seligman, 1973), depression was curvilinearly related to latency of response and failures to solve in the anagram task. In addition, internal locus of control was linearly related to trials to criterion.
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PREDICTION OF SUSCEPTIBILITY TO
LEARNED HELPLESSNESS

The effects of inescapable shock on mongrel dogs was investigated by Overmier and Seligman (1967) and Seligman and Maier (1967). Dogs that were able to escape aversive shock in a pretreatment condition behaved as normal naive dogs in subsequent escape/avoidance learning. However, dogs given inescapable shock in a pretreatment condition soon exhibited definite signs of interference in escape learning. The authors concluded that this interference in escape/avoidance learning situations is a function of the degree of controllability experienced by the dogs in their initial exposures to shock.

An account of these results is given by Seligman (1975a).

When an experimentally naive dog receives escape/avoidance training in a shuttle box, the following behavior typically occurs: at the onset of the first traumatic electric shock, the dog runs frantically about, defecating, urinating, and howling, until it accidentally escapes over the barrier and so escapes the shock. On the next trial, the dog, running and howling, crosses over the barrier more quickly than on the preceding trial. This pattern continues until the dog learns to avoid altogether. Overmier and Seligman (1967) and Seligman and Maier (1967) found a striking difference between this pattern of behavior and that exhibited by dogs first given inescapable electric shock in a Pavlovian hammock. Such a dog's first reactions to shock in the shuttle box are much the same as those of a naive dog. In dramatic contrast to a naive dog, however, a typical dog which has experienced
uncontrollable shocks before avoidance training soon stops running and howling and sits or lies quietly whining, until shock terminates. The dog does not cross the barrier and escape the shock. Rather, it seems to give up and passively accepts the shock. On succeeding trials, the dog continues to fail to make escape movements and takes as much shock as the experimenter chooses to give.

There is another peculiar characteristic of the behavior of dogs that have first experienced inescapable shock. Such dogs occasionally jump the barrier early in training and escape, but then revert to taking the shock; they fail to profit from exposure to the barrier-jumping-shock-termination contingency. In naive dogs a successful escape response is a reliable predictor of future, short latency escape responses. (p.8)

Overmier and Seligman (1967) suggested that the source of the interference was a learned "helplessness."

Seligman (1975a) suggests that experiences with uncontrollable trauma produce two basic effects: 1) animals become passive in the face of trauma, 2) animals are retarded at learning that their responses control trauma. This maladaptive behavior has been demonstrated in varieties of tasks and species with a variety of stressors (Braud, Wepman, and Russo, 1969; Thornton, Elliott, and Elliott, 1975; Hiroto, 1974; Overmier and Seligman, 1967; Padilla, Padilla, Ketterer and Giacalone, 1970; Seligman and Maier, 1967; Thornton and Jacobs, 1971; Thornton and Powell, 1974). In addition, Seligman has developed a theory to account for the "learned helplessness" phenomenon.

Seligman's (1975a) theory suggests that when shock, or for that matter any aversive stimulus, is inescapable,
the organism learns that responding and the aversive stimulus termination are independent. Learning that responding and trauma are independent -- that trauma is uncontrollable -- produces the phenomenon of passivity in the face of trauma and difficulty in benefitting from response relieving contingencies. The process of learning that provides the organism with the feeling of controllability/noncontrollability is one that involves enabling the organism to become aware of probabilities of reinforcement. To gain control, an organism must be aware that the probability of reinforcement given the occurrence of a response is not equal to the probability of reinforcement given the nonoccurrence of a response. When these two probabilities are not equal, a reinforcement will be dependent on a response, and the organism can learn that the outcome of a response is controllable.

Human participants in experiments designed to produce the phenomenon of learned helplessness are first given a task that is insolvable, without it appearing to be thus. Unsuccessful attempts at solving the task are met with an aversive stimulus, such as shock, a loud noise, or "incorrect." Then, the subjects are given a second task that is solvable (e.g., Hiroto, 1974; Miller and Seligman, 1975a; Thornton and Jacobs, 1971; Thornton and Powell, 1974). If the second task is an anagram-solving task, the phenomenon of learned helplessness is expected to manifest itself in the
behaviors involved in solving anagrams, producing longer latencies to solve, more failures to solve, and more trials to task criterion. These behaviors are said to index learned helplessness because changes in them in the direction of poorer performance occur as a result of uncontrollable aversive outcomes. Furthermore, since the second task is the task that tests for the phenomenon, the second task is usually referred to as the test task. The learned helplessness phenomenon is not demonstrated, however, in all individuals that have first been exposed to insolvable problems with an accompanying aversive stimulus, then given a test task, a second task that is solvable (e.g., Miller and Seligman, 1975a; Thornton, 1973a; Thornton and Powell, 1974).

Thornton and Powell (1974) attempted to immunize human subjects against learned helplessness by presenting groups of subjects blocks of trials in which shock was controllable. They then tested the "immunization" by giving blocks of trials of uncontrollable shock; comparing the results to a group receiving uncontrollable shock first, and to a control group. Among their points in discussion are the following:

A large majority of AS [avoidable shock] Ss responded with no apparent helplessness in the transfer task; a few appeared helpless. Also, most UAS [unavoidable shock] Ss did not respond, but some emitted responses similar to AS Ss. These data correspond to the infrahuman data of Seligman et al, (1971). Two factors
were possibly operating. First, laboratory-induced helplessness was more effective for some Ss than others, and secondly, that some Ss came to the laboratory with either a preestablished state of learned helplessness or a strong background conducive to immunization against helplessness. (p. 21)

Thornton (1973a) also mentions failure to induce learned helplessness.

In these studies [Thornton and Powell, 1974] the problem of individual differences in the development of learned helplessness also received new emphasis. Some individuals who could control shock during the preliminary sessions failed to respond in the transfer task. Others who could not control shock in the preliminary sessions avoided or escaped in the transfer task.

The investigator felt that one possible explanation of these results is that human Ss come into the laboratory with a set of personality characteristics which either dispose them to learned helplessness or to resist learned helplessness. (p. 5)

Subjects within experimental conditions are expected to vary in their responses due in part to random variability operating, but personality differences among the subjects could also be operating to produce differences in performance. To determine if personality characteristics affect or are related to behaviors of individuals who exhibit the learned helplessness phenomenon, an assessment of the personality characteristics has to be made. Then, observations of the characteristics and how they relate to the experimental variables (conditions, predictors, etc.) need to be made.

Thornton (1973a) assessed the relationship of scores on the Minnesota Multiphasic Personality Inventory (MMPI),
the California Psychological Inventory (CPI), and the Edwards Personal Preference Schedule (EPPS), and the ability or inability of subjects to escape/avoid shock. Some subjects were presented an insolvable pretreatment that resulted in unavoidable shock. Other subjects received a solvable pretreatment task that allowed them to learn to avoid shock. Then, all subjects were given a solvable second task of escape/avoidance learning. The scores the subjects had on the subscales of the above mentioned schedule and inventories were correlated with the reaction times the subjects had in the second task. Nine subscales from the MMPI, CPI, and EPPS were significantly related to the reaction times of the subjects trying to escape/avoid shock. A positive relationship between subscale scores and reaction times implies that the more the individual possesses the personality characteristic the subscale measures, the more he or she will tend to respond slowly in escape/avoidance learning.

For the subjects exposed to the avoidable shock (the solvable pretreatment) there was a significant positive relationship between their reaction times and the Achievement via Conformity Scale of the CPI ($r = .45, p < .05$). There were also significant negative relationships for their reaction times: Socialization ($r = -.46, p < .05$); Self-control ($r = -.52, p < .05$); and Achievement via Independence ($r = -.55, p < .05$). For the unavoidable shock (the
insolvable pretreatment) condition subjects, the reaction times were negatively related to the Intellectual Efficiency Scale ($r = -0.87, p < 0.05$).

The Depression Scale of the MMPI was significantly related to reaction times in the second task of individuals first given the avoidable shock condition ($r = 0.46, p < 0.05$). For the EPPS, four subscales were related to reaction times in the second task. The reaction times of avoidable shock pretreatment subjects in the second task were related to the Autonomy Scale ($r = 0.43, p < 0.05$). The unavoidable shock pretreatment subjects' reaction times in the second, solvable task were significantly related to Autonomy ($r = 0.44$), Affiliation ($r = 0.52$), and Abasement ($r = -0.44$), with $p < 0.05$. Another study assessing scores on a predispositional questionnaire and their relationships to behaviors that index learned helplessness is a study (Hiroto, 1974) that deals with the concept of locus of control. To better understand locus of control in relationship to learned helplessness, the basic variables of both should be compared.

Learned helplessness views control of reinforcement as a primary variable. Internal-external locus of control is similar in that locus of control theorists also view the control of reinforcement as crucial. Internal-external locus of control (Levenson, 1973; Rotter, 1966) refers to the extent an individual perceives that reinforcements are
contingent on his or her actions. The internal would tend to perceive reinforcement as a consequence of his or her responses and to attribute the reinforcement contingencies to his or her skills and abilities. The external would tend to perceive reinforcements as unrelated to (independent of) his or her behavior, and to attribute outcome to luck, chance, or another person. In learned helplessness, control over reinforcement actually refers to the control the subject has or events actually being independent or dependent of his/her responding; while internal-external construct studies refer to the subject's perception of the actual dependency or independency. Hiroto (1974) investigated the conceptually similar aspects of internal-external control of reinforcement and the hypothesized learned helplessness process.

The study (Hiroto, 1974) revealed that external locus of control subjects, regardless of their pretreatments and instructional sets, were slower to escape or avoid than internal control subjects. Furthermore, external control subjects required more trials to reach avoidance criterion (three consecutive avoidance responses) and made fewer avoidance responses during the trials than the internal control subjects.

Foelker, Elliott, and Thornton (1974), in an attempt to follow up the research of Thornton (1973a) and Hiroto (1974), developed a questionnaire designed to predict
learned helplessness. The questionnaire was composed of items similar to those from the nine subscales mentioned by Thornton (1973a) and items representing the construct locus of control (Rotter, 1966). Due to time limitations, the study was treated as a pilot project. The questionnaire, containing 138 questions, was then administered to a different sample of subjects by Thornton, Elliott, and Elliott (1975).

The study of Thornton, Elliott, and Elliott (1975) was designed to determine if subjects scoring high, medium, or low on the predispositional questionnaire differed significantly from each other on behaviors that index learned helplessness. The investigation demonstrated that individuals scoring low on the predispositional questionnaire, and termed helplessness resisters performed better on the escape/avoidance test task than did those individuals identified as helplessness prone (high scoring). The predispositional questionnaire was effective in predicting individuals' behaviors in a test task to fall into categories of poor, average, and best performance according to whether or not the individuals scored high, medium, or low, respectively, on the questionnaire.

The behaviors characteristic of learned helplessness were thought by Seligman (1975a, 1975b) to be similar to the behaviors of reactive depressive individuals. Thus, Seligman (1975a) has suggested that learned helplessness
is a model for reactive depression. Reactive depression is believed to result from external factors such as stress or psychological trauma (Miller, 1975). Miller and Seligman (1973) and Seligman (1975b) have investigated the learned helplessness model of depression by examining the predictions that the behaviors of depressed individuals are like those of individuals in whom helplessness has been induced. The model posits that learning that reinforcement and responding are independent is central to the symptoms and etiology of both learned helplessness and depression. The studies have demonstrated that subjects made helpless in the laboratory perform similarly to depressed subjects, with the dependent variable being the tendency to perceive reinforcements as dependent upon or independent of skilled responses.

To summarize the research mentioned to this point, there have been three primary studies that have investigated the personality characteristics of individuals who develop learned helplessness: Thornton (1973a), Hiroto (1974), and Miller and Seligman (1973). It is the purpose of this investigation to determine if the personality characteristics of individuals who develop learned helplessness are many and varied, or whether there are just a few characteristics or traits relevant to the phenomenon of learned helplessness. That is, the personality characteristics identified by the previous studies may or may not be contributing differentially to the development of learned helplessness
in individuals or they may all be different ways of describing the same attribute that characterizes individuals who become helpless when faced with uncontrollable outcomes.

This investigation of the personality characteristics relevant to learned helplessness begins with and is limited to those characteristics that have been demonstrated to be empirically related to learned helpless individuals' performance in the test task: 1) the Achievement via Conformity, Socialization, Self-control, Achievement via Independence, and Intellectual Efficiency scales of the CPI; the Depression scale of the MMPI; the Autonomy, Affiliation, and Abasement scales of the EPPS; 2) internal-external locus of control, as measured by Rotter (1966) and Levenson (1973); and 3) depression as measured by Beck's Depression Inventory (1967). The investigation was conducted in two phases. Phase I was the determination by factor analysis of the relationships among the personality characteristics. Phase II involved the determination of susceptibility to learned helplessness by multiple regression and intercorrelation matrix analyses of personality characteristics before, and behaviors resulting from, a learned helplessness inducing procedure.
PHASE I

Method

Subjects

The participants were 152 undergraduate students enrolled in psychology courses at North Texas State University. They were obtained through the psychology department's subject pool consisting of students in freshmen and sophomore courses who volunteer to participate in exchange for extra course credit.

Questionnaire

All the questions corresponding to the nine subscales identified by Thornton (1973a) were listed together with all the questions from Levenson's (1973) locus of control scale. To that list were added some items from Rotter's (1966) locus of control scale and all items of Beck's Depression Inventory (1967). The list of items was separated into groups of common appearing questions or statements. Fifty 5-choice multiple choice questions were then written to represent the groups.

Procedure

The fifty questions were assembled into a test booklet and administered to the subjects. The responses of the
subjects to the fifty-item booklet were submitted to item-test total, homogeneity, and factor analyses. The factor analysis involved the principal axes solution, with ones in the diagonals and eigen values greater than 1.0. The varimax method of rotation was used.

Results

Of the fifty questions, forty had point-biserial correlations of .20 or greater with the total test score. In addition, the coefficient alpha for all fifty items was .83. The factor analysis yielded eighteen factors. The number of factors was reduced to ten, however, after two adjustments. First, to prevent an ipsitive measure (one that has subscale questions appearing on one or more other subscales), those items that loaded highly on two or more factors were assigned to the factor on which they loaded highest. Second, no factor was retained unless it had at least two items with factor loadings greater than ±.40.

The following are names given to the ten factors, based on their item content: feelings of happiness, enjoyment, and worth; a perception of external events as non-threatening; internal locus of control; capability of concentration; unconcern with social approval of one's decision; expectations of future success; ability as a child to contribute to decision making; ability to tolerate, even benefit from hardships; a positive set toward interactions with
others; and importance of decision making in achieving success.

Discussion

Based on the factor analysis, it appears that the personality characteristics attributed to individuals who develop helplessness are complex in nature. Inspection of the characteristic feelings of the individuals, according to the factors generated by the analysis, reveals that the attribute of feelings of happiness, enjoyment, and worth appear to be a depression scale's polar opposite. That is, a depression scale with its questions turned around to their opposite meaning would be the scale measuring feelings of happiness, enjoyment, and worth. The attribute of internal locus of control appears to be a personality characteristic similar to that tested by questions of the Rotter (1966) and Levenson (1973) locus of control scales.

Since the factor analysis yields factors (which in this case are personality characteristics or attributes) that are orthogonal or independent of each other, it is implied that the personality attributes are ultimately not synonymous. To the extent that the attribute feelings of happiness, enjoyment, and worth is the opposite of depression, and the attribute internal locus of control is the same attribute as that identified by Rotter (1966) and Levenson (1973), then the attributes depression and
locus of control are not ultimately related to one another. This inferred independence of depression and locus of control poses problems for those that hold that etiology and symptoms of depression and locus of control are conceptually similar (e.g., Hiroto, 1974; Miller and Seligman, 1973). The theoretical implications of these results will be elaborated on in the discussion following the results of Phase II.
PHASE II

Method

Subjects

Seventy-eight undergraduate students enrolled in psychology courses at Angelo State University were obtained for this experiment, described to them as "an experiment to assess the relationship between two different types of cognitive tasks." The subjects volunteered to participate, receiving extra course credit in exchange.

All subjects were exposed to the same experimental procedure, described in the following section. One of the seventy-eight participants failed to complete the experiment, being dismissed after insisting the experiment had been "rigged." He was the only subject to indicate orally or on the postexperiment questionnaire that he or she felt the first part of the experiment was designed or rigged to be insolvable.

Design

The students solicited for participation in Phase II completed a predispositional questionnaire and ten pre-experimental, unpatterned anagrams three days before requests were made of them for participation in the experiment proper. All the subjects received the same
treatment condition, being asked to complete Levine (1971) discrimination problems that, unknown to the subjects, were designed to be insolvable. After working through the first task, the subjects were asked to solve patterned, and solvable, anagrams. Upon completion of the test task, the subjects were given a postexperiment questionnaire and then debriefed.

Instruments

Questionnaire.---To determine if the personality characteristics of individuals who develop learned helplessness were contributing to susceptibility to learned helplessness, a predispositional questionnaire was developed. The questionnaire was designed to determine a subject's personality profile along factors identified by the factor analysis mentioned in Phase I. By measuring the preexperimental level of these personality characteristics and evaluating them in relation to behavioral indices of learned helplessness, a determination could be made about personality characteristics predisposing individuals to learned helplessness.

As was indicated in Phase I, there are ten factors representing the personality attributes of individuals who develop learned helplessness. Of the ten factors identified, six were chosen for consideration: feelings of happiness, enjoyment, and worth; internal locus of control; capability
of concentration; unconcern with social approval of one's decision; ability as a child to contribute to decision making; ability to tolerate, even benefit from, hardships. Each of the six factors was treated as an attribute for a subscale, and the original items loading greater than +.40 on the factor were retained in the subscale as measure anchors. The following are the number of items that were retained in the subscales, given in respective order to the naming of the factors given above: 8, 4, 5, 3, 2, and 4. The total number of items representing each factor was brought to fifteen by the experimenter writing new items similar to the measure anchors.

The ninety-item instrument was presented to the subjects as an attitude inventory. At the back of the test booklet was attached a list of ten unpatterned anagrams. The five 4-letter and five 5-letter anagrams were prefaced with instructions for the subject to solve as many of the anagrams as he or she could, by writing the correct word in a blank provided. The anagram task, as well as the attitude inventory, was untimed.

The test booklet was administered to a general psychology and a developmental psychology class at Angelo State University. Administered in June, 1975, the test booklet was completed by a nearly even number of male and female undergraduate students. Three days following completion of the test booklet by the students, requests were made
for participation in this experiment. Subjects were given no hint that the questionnaire was part of the same study as the experimental procedure.

**Treatment.**--The first task was a cognitive one, consisting of a series of four-dimensional stimulus patterns like those previously used in discrimination learning studies (Hiroto and Seligman 1975; Levine, 1971). Each of the four dimensions have two associated values: 1) letter, A-T; 2) letter size, large-small; 3) letter color, black-red; 4) type of border, circle-square. Levine (1971) provides a complete description of the patterns. The patterns were presented individually on 12.7 x 20.3 cm white index cards, displayed in a ringed binder.

**Test.**--The test task also was a cognitive one, consisting of a series of twenty-five anagrams taken from a list of 5-letter anagrams (Tresselt and Mayzner, 1966). The anagrams were displayed individually with 1.3 cm letters spaced .7 cm apart, on 12.7 x 20.3 cm white index cards in a ringed binder.

**Procedure**

The subjects all received the same treatment. The subject was seated opposite the experimenter at a partitioned desk. After filling out a response sheet, the experimenter placed before the subject the index card binder containing
the Levine discrimination patterns. A blank card was presented first.

When the subject was ready to begin, the experimenter read the following instructions.

In this experiment you will be looking at cards like this one. (The experimenter will flip the blank card, revealing the first sample card.) There are two stimulus patterns on each card. The patterns are composed of four different dimensions, and each dimension has two values. The dimensions and values are: the letter is a dimension, and its value is either A or T. The letter size is a dimension, and its value is either large or small. The letter color is a dimension, and its value is either black or red. The type of border is a dimension, and its value is either a circle or square. To repeat, the values are: the letter A or T, a large or small letter, a black or red letter, and a circle or square around the letter. Each stimulus pattern on the card has one of those values from each dimension on it.

I have chosen one of the eight values; the large or the small, the A or the T, the red or the black, or the circle or the square; as begin correct. For each card I want you to choose which side, right or left, you believe contains the value I have chosen, and I will tell you if your choice is correct or incorrect. In a few trials you will be able to learn what the correct value is.

All subjects were asked if they had any questions. After answering any questions, five sample trials were given to clarify the task of finding the correct value. The subjects received four problems, each problem containing ten patterns. After the five sample trials, and at the end of each of the first three problems, the following instructions were read to the subject by the experimenter. "We are now starting a new problem. I
have chosen a value which may or may not be the same value used in the preceding problem. And again, you are to choose which side, right or left, you believe contains the value I have chosen, and I will tell you if your choice is correct or incorrect."

The subjects received a predetermined schedule of correct or incorrect, regardless of what side was chosen. The schedule for problems one through four, where C represents correct and I represents incorrect: 1) C-C-I-C-C-I-C-I-C, 2) C-C-I-I-C-I-C-I-I, 3) C-I-I-C-I-I-C-C-I-I, and 4) I-I-C-C-I-C-I-I-I-C. At the end of each problem the subject was asked for the value he or she believed was chosen, and was told incorrect.

When the subject completed the discrimination task, the experimenter removed the index card binder containing the Levine (1971) discrimination problems. The index card binder containing the anagrams, with a blank card presented first, was then placed before the subject. The following instructions were read.

You will now be trying to solve some anagrams. Anagrams, as you know, are words with their letters scrambled. The problem for you is to unscramble the letters so that they form a word. When you have found the word, tell me what the word is. There may or may not be a pattern with which to solve the anagrams. I will not be able to answer any questions; but I can tell you that you may guess as often as you wish. (The experimenter will flip the first card and begin timing the correct response.)
All twenty-five anagrams were solvable. The letter sequence of the original word was rearranged, so that reading the letters of the anagram in the order 5-3-1-2-4 would reproduce the word. When the subject gave the correct response, the experimenter said "correct", and recorded the latency with a 1/10 second stopwatch. When the subject gave a nonsense word as his or her reply the experimenter said, "No, please try again." In the event the subject replied with a word that was not the intended solution (the patterned word), but did correspond to the anagram, the experimenter said, "That's a word, but not the word we are looking for. Please try again." If the subject did not give a correct response within 120 seconds, the subject was told, "Stop, please begin on a new one." The experimenter recorded the trial as taking 120 seconds.

After the anagram task was completed, the subject filled out a postexperiment questionnaire. The questionnaire asked if the subject felt the first part of the experiment was rigged (designed to be insolvable). With the exception of the subject dismissed for insisting the experiment was "rigged", no subject indicated that he or she felt the first part of the experiment, the discrimination task, was designed to be insolvable.

All subjects were told that the Levine (1971) discrimination problems were impossible to solve as they were presented in the experiment. The subjects were told that
regardless of their responses the experimenter gave feedback previously determined. After demonstrating the ease of solving four-dimensional Levine (1971) discrimination problems, the subjects were told the pattern to the anagrams.

In addition, after final statistical analyses, all subjects received their score on the predispositional questionnaire; the corresponding z-score and cumulative frequency; the mean incorrect number of anagrams for all participants; and the individual's number of incorrect anagrams.

Results

An assessment of anagram solving ability was made by scoring the number of anagrams correctly solved in the back of the test booklet that contained the attitude inventory questions.

Seven predictors were involved in determining the relationship between personality characteristics of individuals who develop learned helplessness and the individuals' behaviors on the anagram task given after the insolvable discrimination problems. Each of the subscales in consideration: feelings of happiness, enjoyment, and worth; internal locus of control; capability of concentration; unconcern with social approval of one's decision; ability as a child to contribute to decision
making; and ability to tolerate, even benefit from, hardships was used as a predictor of performance in the test task. A seventh predictor was a total test score, minus the scores of eight items that had the only point-biserial correlations with the total score which were below .20. This predictor, then, was a total score from the questionnaire. The dependent measures of the test task, the anagrams, were latency of response, failures to solve, and trials to criterion. Criterion was three successful, successive solutions whose latencies were under fifteen seconds. The means and standard deviations for these predictor and dependent variables are presented in Appendix I.

To investigate the possible change in anagram solving ability from before the experiment to the end of the experiment, a difference score was calculated. The means and standard deviations for the difference scores are presented in Table 1. It was obtained by calculating the percentage of correct anagram solutions for the preexperimental anagram task and subtracting from it the percentage of correct anagram solutions for the test phase of the experiment.

Each of the six factors in consideration formed a subscale. With a sample size of seventy-seven, the fifteen item subscales have coefficient alphas of the following magnitudes, subscale: feelings of happiness, enjoyment, and worth, .83; internal locus of control, .71; capability of concentration, .75; unconcern with social approval of one's decision, .69; ability as a child to contribute
TABLE 1
MEANS AND STANDARD DEVIATIONS FOR PREEXPERIMENTAL ANAGRAM SOLVING ABILITY, FAILURES TO SOLVE, AND DIFFERENCE SCORE BETWEEN THE TWO

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviations</th>
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<tr>
<td>Percentage Correct Pre-experimental Anagrams</td>
<td>78.31</td>
<td>19.10</td>
</tr>
<tr>
<td>Percentage Correct Test Task Anagrams</td>
<td>75.17</td>
<td>17.90</td>
</tr>
<tr>
<td>Difference Score</td>
<td>3.14</td>
<td>21.65</td>
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to decision making, .79; and ability to tolerate, even benefit from, hardships, .64.

Multiple regression analyses using the six subscales as predictors for each one of the dependent measures yielded no statistically significant relationships. Multiple regression analyses using predictor scores with preexperimental anagram solving ability partialed out also yielded no statistically significant relationships.

Preexperimental anagram solving ability is not significantly related to any of the predictors. As shown in Table 2, however, preexperimental anagram solving ability is negatively related to the dependent measures of latency of response and failures to solve. The negative relationships suggest that as the level of preexperimental anagram solving ability increased, the latencies of responses shortened and the failures to solve the anagrams decreased. The significant predictor-dependent measure relationships are presented in Table 2. Only one of the predictors was significantly, linearly related to any dependent measure; internal locus of control was positively related to trials to criterion. The positive relationship suggests that as the locus of control became more internal, there was an increase in the number of trials to reach criterion. There were four significant, curvilinear relationships between the predictors and the dependent measures. Feelings of happiness, enjoyment, and worth and total score were
TABLE 2
CORRELATIONS\(^{a}\) BETWEEN PREDICTORS AND DEPENDENT MEASURES

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<th>Dependent Measures</th>
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<tr>
<td></td>
<td></td>
<td>Preexperimental Anagram</td>
<td>Internal Locus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solving Ability</td>
<td>of Control</td>
</tr>
<tr>
<td>Median Latency</td>
<td>-.31(^{**})</td>
<td>.13</td>
<td>.56(^{*})</td>
</tr>
<tr>
<td>Failures to Solve</td>
<td>-.32(^{**})</td>
<td>.10</td>
<td>.65(^{**})</td>
</tr>
<tr>
<td>Trials to Criterion</td>
<td>-.17</td>
<td>.23(^{*})</td>
<td>.52</td>
</tr>
</tbody>
</table>

\(^{*}\)\(p < .05\)

\(^{**}\)\(p < .01\)

\(^{a}\)Significance levels are for a two-tailed test, with a sample of 77.

\(^{b}\)All predictors not listed were non significantly related to dependent measures.

\(^{c}\)Pearson product moment correlation.

\(^{d}\)Coefficient of curvilinearity, eta.
curvilinearly related to latency of response and failures to solve.

Curve fitting techniques were applied to the curvilinear relationships to best express their nature. Six functions for the curve were tried: 1) \( y = a + bx \), 2) \( y = ax^b \), 3) \( y = ae^{-bx} \), 4) \( y = \log x \), 5) \( y = x/(a + bx) \), and 6) \( y = a + bx + cx^2 \). Of the six functions, the fifth one, a hyperbole, was the function that produced the highest correlations for the predictor-dependent measure relationships. A hyperbole is an open curve, not necessarily symmetrical, along a conic section. The fit of the hyperbolic function to the variables is presented in Table 3, while two plots of the predictor-dependent measures are given in Figures 1 and 2.

The first plot is of the relationship between the predictor feelings of happiness, enjoyment, and worth and the dependent measure of median latency (in seconds). Severe depression and high nondepression were related to poor performance in the test task, while a moderate amount of nondepression was associated with the best performance. A low score (0 - 1) on the predictor is met with the longest latencies in solving the anagrams. At the predictor score 2, however, the latencies drop to their shortest. From the score of 2 through to the highest score of 14, the latencies gradually get longer until they are as long as at a score of 0.
TABLE 3
LINEAR TRANSFORMATION CORRELATIONS OF THE SIGNIFICANT CURVILINEAR RELATIONSHIPS BETWEEN PREDICTORS AND DEPENDENT MEASURES

<table>
<thead>
<tr>
<th>Dependent Measures</th>
<th>Feelings of Happiness, Enjoyment, and Worth</th>
<th>Total Score</th>
</tr>
</thead>
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<tr>
<td></td>
<td>eta</td>
<td>Hyperbole</td>
</tr>
<tr>
<td>Median Latency</td>
<td>.56*</td>
<td>.62**</td>
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<tr>
<td>Failures to Solve</td>
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<td>.36**</td>
</tr>
<tr>
<td>Trials to Criterion</td>
<td>.52</td>
<td>.50**</td>
</tr>
</tbody>
</table>

*p < .05
**p < .01

Note: Significance levels are for two-tailed tests, with a sample of 77.
Feelings of Happiness, Enjoyment, and Worth

Fig. 1--Hyperbolic relationship between the predictor feelings of happiness, enjoyment, and worth and the dependent measure median latency of response.

*Theoretical curve representing expected observations, based on hyperbolic function.

Note: Latency for predictor 6 estimated from latencies on 4, 5, 6, and 7, due to only one subject scoring 6.
Fig. 2--Hyperbolic relationship between the total score predictor and the dependent measure median latency of response.

*Theoretical curve representing expected observations, based on hyperbolic function.

Note: The points represent latencies of two or more subjects having the same predictor score.
The second plot (Figure 2) is of the relationship between the predictor of total score and the dependent measure of median latency (in seconds). Using only those points representing the latencies of two or more subjects scoring alike on the predictor, the same trend is evident as is in Figure 1. The longer latencies are generally associated with low and high scores on the predictor, while the shorter latencies are associated with the middle scores on the predictor.

The difference score, representing the change in the correct percentage of anagram solutions from before the experiment to the test task, is significantly, linearly related \((r = .23, p < .05)\) to the predictor of capability of concentration, after preexperimental anagram solving ability was partialed out. The positive relationship suggests that the more the capability of concentration, the greater the decrement in correct anagram solving for the test task, compared to the preexperimental level. No other predictor was significantly related to the difference score, though the relationships between the difference score and predictors feelings of happiness, enjoyment, and worth and internal locus of control were in the same direction \((r = .14, p > .05; r = .18, p > .05\); respectively) as the relationship between the difference score and capability of concentration.
The interrelationships of the predictors are presented in Table 4. From the table it appears that feelings of happiness, enjoyment, and worth; internal locus of control; and capability of concentration are all highly interrelated.
## TABLE 4
PREDICTOR INTERCORRELATIONS

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>Feelings of Happiness,</td>
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<td>Internal Locus of Control</td>
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<td>Capability of Concentration</td>
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<td>Unconcern with Social</td>
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<td>.19*</td>
<td>.11</td>
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<td>.43**</td>
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<td>1.00</td>
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<tr>
<td>Contribute to Decision</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Making</td>
<td></td>
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<tr>
<td>Ability to Tolerate, Even</td>
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<td>.49**</td>
<td>.35**</td>
<td>-.03</td>
<td>.46**</td>
<td>1.00</td>
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<tr>
<td>Benefit from, Hardships</td>
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<td></td>
<td></td>
<td></td>
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</table>

*p < .05

**p < .01

1Pearson product moment correlations with two-tail tests for significance and a sample of 77.
DISCUSSION

An implication from the linear relationship between internal locus of control and trials to criterion is that the helplessness procedure brought about a decrement in performance more for internal subjects than external ones. This was not found by Hiroto (1974) in his instrumental task study. In support of the present findings however, Benson, Kennelly, and Foelker (1975) have demonstrated that internal subjects pretreated with an insolvable task had a greater decrement in performance on a test task than external subjects similarly pretreated. Conversely, external subjects given a solvable pretreatment condition had a better performance on the test task than the internal subjects similarly pretreated.

The close relationship between internal locus of control and capability of concentration may suggest one explanation for locus of control appearing to interact with pretreatment condition. As the capability of concentration increased there was a decrement in performance on the test task anagrams, compared to preexperimental anagram solving ability. This might suggest that the more the subject was aware in the first task that his or her responses didn't control the reinforcements', the more the subject tended to show a depressed level of performance on the test
task. Since internal and external subjects were comparable at solving preexperimental anagrams, the experiences with failure to solve in the pretreatment accounted for internal locus of control subjects reacting more adversely in the test task. The strong positive relationship between capability of concentration and locus of control does suggest that an internal subject is one who is attending to the task at hand, more than the external. Furthermore, the nature of the internal locus of control implies to the subject that he or she will tend to be successful by being in control. Thus, when the internal fails, this failure seems to have a greater effect on his or her later performance than for the external, who doesn't expect to be in control often and doesn't attend to the task that much anyway. This may imply, then, that when the external is given a solvable task, there is a more facilitating effect on his or her later performance than the internal because the successful control over reinforcements means more for the external who isn't used to it and doesn't expect it, than the internal who does expect to have control over his or her reinforcements.

The internal subject, therefore, comes into the experiment willing to try hard and finding it easy to concentrate on the task at hand. The external, though, comes into the experiment already believing that he or she won't be in control of the reinforcements and finds it hard to concentrate on a task. Thus, when the internal perceives
that he or she cannot control the outcomes, the internal reacts by ceasing to try or putting forth effort. The external, though, perceiving the uncontrollability of outcomes, doesn't react much because the uncontrollability is expected to occur and, therefore, doesn't affect his or her motivation very much.

The curvilinear relationships between feelings of happiness, enjoyment, and worth and latency of response and failures to solve indicate that very depressed or emotionally elated individuals have problems performing well on the test task. Since internal locus of control and capability of concentration increase as the feelings of happiness, enjoyment, and worth do, the poorer performance of emotionally elated individuals may be due to their susceptibility to learned helplessness. The individual who is susceptible to the learned helplessness phenomenon appears, ironically, to be that individual who reports himself or herself to be capable of concentrating and possessing a belief in controlling reinforcements.

The fact that internal locus of control is linearly related to pattern finding in an anagram test task, and feelings of happiness, enjoyment, and worth is curvilinearly related to latency of response and failures to solve in an anagram test task would suggest that learned helplessness, locus of control, and depression are complexly interrelated. This interrelationship is not the same thing as Seligman's
(1975a) theory that learned helplessness and depression are similar in their symptoms and etiology.

In summary, then, two results of this experiment were surprising. First, locus of control was expected to be linearly related to behaviors that index learned helplessness (Hiroto, 1974), but it was external locus of control, not internal as found here, that was presumed to be the factor predicting susceptibility to helplessness. In addition to being related to a behavior believed to index learned helplessness (trials to criterion), internal locus of control is strongly positively related to capability of concentration and feelings of happiness, enjoyment, and worth. Considering the apparent interaction between internal locus of control and the effects of the insolvable pretreatment condition, internal-external locus of control may have something to do with the attentional process, with the internals better aware and responsive to response/reinforcement contingencies or their absence.

Second, depression was expected to relate linearly to the behaviors believed to index learned helplessness. To the extent that the predictor feelings of happiness, enjoyment, and worth is the opposite of depression, the relationship of depression to learned helplessness is not straightforward or simple.
## APPENDIX I

MEANS AND STANDARD DEVIATIONS FOR PREDICTORS AND CRITERIA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preexperimental Solving Ability</td>
<td>7.83</td>
<td>1.92</td>
</tr>
<tr>
<td>Median Latency of Response</td>
<td>46.35</td>
<td>36.59</td>
</tr>
<tr>
<td>Failures to Solve</td>
<td>6.21</td>
<td>4.51</td>
</tr>
<tr>
<td>Trials to Criterion</td>
<td>21.71</td>
<td>6.49</td>
</tr>
<tr>
<td>Feelings of Happiness, Enjoyment and Worth</td>
<td>7.47</td>
<td>3.81</td>
</tr>
<tr>
<td>Internal Locus of Control</td>
<td>4.55</td>
<td>2.95</td>
</tr>
<tr>
<td>Capability of Concentration</td>
<td>3.30</td>
<td>2.81</td>
</tr>
<tr>
<td>Unconcerned with Social Approval of One's Decision</td>
<td>4.03</td>
<td>2.63</td>
</tr>
<tr>
<td>Ability as a Child to Contribute to Decision Making</td>
<td>5.70</td>
<td>3.50</td>
</tr>
<tr>
<td>Ability to Tolerate, Even Benefit From, Hardships</td>
<td>6.64</td>
<td>2.91</td>
</tr>
<tr>
<td>Total Score (Number of Items = 82)</td>
<td>28.57</td>
<td>12.48</td>
</tr>
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</table>

Note: Sample size = 77.
## APPENDIX II

### ATTITUDE INVENTORY

<table>
<thead>
<tr>
<th>Name of Subscale</th>
<th>Questionnaire Numbers</th>
</tr>
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<tbody>
<tr>
<td>Feelings of Happiness, Enjoyment, and Worth</td>
<td>2 4 5 17 30 33 44 52</td>
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<tr>
<td>Internal Locus of Control</td>
<td>69 70 71 79 82 83 88</td>
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<tr>
<td>Capability of Concentration</td>
<td>11 15 18 23 35 42 57 58</td>
</tr>
<tr>
<td>Unconcern with Social Approval of One's Decision</td>
<td>63 64 68 72 80 85 89</td>
</tr>
<tr>
<td>Ability as a Child to Contribute to Decision Making</td>
<td>6 14 16 31 39 41 45 48</td>
</tr>
<tr>
<td>Ability to Tolerate, Even Benefit from, Hardships</td>
<td>49 50 51 55 61 66 86</td>
</tr>
</tbody>
</table>

1. a) I am always worrying about what people will think of what I do  
b) I often worry about what people will think of what I do  
c) I sometimes worry about what people will think of what I do  
d) I occasionally worry about what people will think of what I do  
e) I rarely worry about what people will think of what I do

2. a) It is natural for people to feel content  
b) It is common for people to feel content  
c) It is rare for people to feel content  
d) Contentment is just one more of the varied emotions  
e) Contentment, at best, is a false perception
3. If something I have done is accused of being highly controversial:
   a) I am curious, but not alarmed
   b) I am curious, and somewhat alarmed
   c) I am somewhat afraid
   d) I am nervous
   e) I am almost fearful

4. a) I face life only because I have to
   b) I face life with dread
   c) I face life indifferently
   d) I face life with some assurity
   e) I face life with confidence.

5. a) Day-to-day life is basically monotonous
   b) Day-to-day life is rarely meaningful
   c) Day-to-day life is tolerable
   d) Day-to-day life is sometimes exciting
   e) Day-to-day life is exciting

6. a) I'm not as smart as everyone else
   b) I don't seem as smart as everyone else
   c) I seem as smart as everybody else
   d) I am smarter than alot of people
   e) I am pretty smart

7. a) I can start new projects regardless of the expectation of failure
   b) I can start new projects, somewhat reluctantly, when I expect failure
   c) I can start new projects, only with some effort, when I expect failure
   d) I can start new projects, but reluctantly, when I expect failure
   e) I can start new projects, but with great duress, when I expect failure

8. a) My parents did not trust my decisions
   b) My parents were generally skeptical of my decisions
   c) My parents were often wary of my decisions
   d) My parents were sometimes wary of my decisions
   e) My parents usually trusted my decisions

9. a) I definitely don't have unconventional friends
   b) I have only one or two unconventional friends
   c) I have a few unconventional friends
   d) I have several unconventional friends
   e) I have many unconventional friends
10. a) My family was strictly a dictatorship
   b) My family was a benevolent dictatorship
   c) My family was one where almost everyone but me had a veto power
   d) My family was almost a democracy
   e) My family was more democratic than anything else

11. a) I can not get ahead in the world
    b) I can not get much farther ahead than I am now in the world
    c) I can, with effort, get somewhere in the world
    d) I can most probably get ahead in the world
    e) I can certainly get ahead in the world

12. a) I can't stand the hardships of life
    b) I am very bothered by the hardships of life
    c) I tolerate the hardships of life
    d) I can appreciate some of the hardships of life
    e) I am made better by the hardships of life

13. a) I agree that life is always worthwhile
    b) I usually feel that life is worthwhile
    c) I can't always say that life is worthwhile
    d) It is hard to feel that life is worthwhile
    e) I don't believe people that say life is worthwhile

14. a) As hard as I try, I can't keep my mind on a task
    b) I have to try very hard to keep my mind on a task
    c) I can keep my mind on a task with a little effort
    d) With little effort, I can keep my mind on a task
    e) I can keep my mind on a task with ease

15. a) I am known for my ability to get things done
    b) I am known for some things, but not for the ability to get things done
    c) I am known for sometimes getting things done
    d) I am known to often not get things done
    e) I am known to fail at getting things done

16. a) I am severly absent minded about my work
    b) I am notoriously absent minded about my work
    c) I am absent minded about my work
    d) I am not too absent minded about my work
    e) I am rarely absent minded about my work
17. a) People only pretend they have a good time  
b) I never can really let go and have a good time  
c) Everything has to be just right for me to have a good time  
d) I have experienced many good times  
e) It is easy for me to seize the opportunity to have a good time  

18. a) I stick with something until I'm told to quit  
b) I stick with something until it becomes very difficult  
c) I stick with something until it poses real problems  
d) I stick with something until minor problems start to mount  
e) I stick with something until the first sign of trouble  

19. a) Family vacations were gone on, not decided on, by children, at my home  
b) Family vacations were gone on, not necessarily decided on, by children at my home  
c) Family vacations were usually decided by the parents at my home  
d) Family vacations were sometimes decided on by the entire family at my home  
e) Family vacations were usually decided on by the entire family at my home  

20. a) Life has to be enjoyable to be worthwhile  
b) Life has to be almost always enjoyable to be worthwhile  
c) Life should be nearly enjoyable to be worthwhile  
d) Life should be almost enjoyable to be worthwhile  
e) Life does not have to be enjoyable to be worthwhile  

21. a) I have done many controversial things  
b) I have done several controversial things  
c) I have done a few controversial things  
d) I have done two or three controversial things  
e) I have never done a controversial thing  

22. a) The usual way and the right way are one and the same  
b) The usual way and the right way are nearly exactly alike  
c) The usual way and the right way are very similar  
d) The usual way and the right way are similar  
e) The usual way and the right way are occasionally alike
23. a) I just can not supervise my own work  
b) I can't supervise, very well, my own work  
c) I can, to an extent, supervise my own work  
d) I can supervise my own work  
e) I can supervise very well, my own work

24. a) My say-so at home didn't matter  
b) My say-so at home didn't really matter  
c) My say-so at home sometimes mattered  
d) My say-so at home usually mattered  
e) My say-so at home almost always mattered

25. a) I have to consult my friends before I make a decision  
b) I like to consult my friends before I make a decision  
c) I have to consult my friends for some decisions  
d) I sometimes consult my friends before I make a decision  
e) I rarely consult my friends before I make a decision

26. a) What everyone else thinks is right is what is right  
b) What everyone else thinks is right is usually right  
c) What everyone else thinks is right is probably right  
d) What everyone else thinks is right is definitely not always right  
e) What everyone else thinks is right doesn't matter

27. a) Life is worthwhile, even if I'm in trouble  
b) Life is worthwhile, but not particularly so when I'm in trouble  
c) Life is worthwhile, but is strained when I'm in trouble  
d) Life is worthwhile if I manage to stay out of trouble  
e) Life is worthwhile until I'm in trouble

28. a) I regret not being able to make my own decisions as a child  
b) I didn't get to make any real decisions as a child  
c) I got to make a few decisions as a child  
d) I sometimes got to make decisions as a child  
e) I got to make a lot of decisions as a child

29. a) I always try to do the right thing, even if it might mean a hardship  
b) I always try to do the right thing, but if it gets me into trouble, I might not do it again  
c) Whether or not I will get into trouble determines the right thing for me to do  
d) I don't worry about what the right thing is to do  
e) I don't care what is or is not the right thing to do
30.  a) I am almost never happy  
b) I am often unhappy  
c) My happy and blue moods are about balanced  
d) Occasionally I feel happy  
e) I am quite often happy  
31.  a) The ability to concentrate has nothing to do with smartness  
b) The ability to concentrate is only remotely related to smartness  
c) The ability to concentrate is associated with smartness  
d) The ability to concentrate is strongly related to smartness  
e) The ability to concentrate is a sign of smartness  
32.  a) I've quit worrying about whether or not I'll be a failure at something I try  
b) I've nearly quit worrying about whether or not I'll be a failure at something I try  
c) I would like to quit worrying about whether or not I'll be a failure at something I try  
d) I'll probably continue to worry about whether or not I'll be a failure at something I try  
e) I'll never be able to quit worrying about whether or not I'll be a failure at something I try  
33.  a) I feel that I have a good purpose in life  
b) I feel that I have purpose in life  
c) I feel that I have no subsative purpose in life  
d) I feel that there is no purpose for me in life  
e) I feel that I live for no good  
34.  a) Facing up to a hardship has nothing to do with character  
b) Facing up to a hardship is remotely related to character  
c) Facing up to a hardship is related to character  
d) Facing up to a hardship shows some character  
e) Facing up to a hardship builds character  
35.  a) I completely agree that people in power control my life  
b) I somewhat agree that people in power control my life  
c) I know some people in power control my life  
d) I somewhat disagree that people in power control my life  
e) I completely disagree that people in power control my life
36. People that have led sheltered lives:
a) are at a disadvantage in dealing with life
b) are in for a rude awakening
c) are not enviable
d) are not at a disadvantage
e) are enjoying an advantage

37. a) The power to make decisions for the family was always in one person's hands
b) The power to make decisions for the family was usually in one person's hands
c) The power to make decisions for the family was sometimes in one person's hands
d) The power to make decisions for the family was not usually in one person's hands
e) The power to make decisions for the family was seldom in one person's hands

38. A parent has to make most of his child's decisions until he is
a) 4 years old
b) 9 years old
c) 14 years old
d) 16 years old
e) 19 years old

39. a) Almost anyone can concentrate better than I
b) I seem to have more trouble concentrating than others
c) I can concentrate about as well as others
d) I can concentrate a little better than others
e) I can concentrate very well

40. a) The problems in life are in themselves a blessing
b) The problems in life can be survived with some benefit
c) The problems in life can be survived, but with little benefit
d) The problems in life are difficult, and one certainly doesn't gain much from them
e) The problems in life are major, and aren't made to be beneficial

41. a) As hard as I try, I just can't hold a thought
b) I have to try very hard to hold a thought
c) I have to try to hold a thought
d) I have to use some effort to hold a thought
e) I can hold a thought with ease
42. a) My friends know not to trust me to get things done  
b) My friends suspect my ability to get things done  
c) My friends know not to expect too much in my getting things done  
d) My friends know that I can usually get things done  
e) My friends trust me to get things done  

43. a) I always make sure that what I do is not controversial  
b) I try not to do anything too controversial  
c) I sometimes do controversial things  
d) I find myself doing a fair share of controversial things  
e) I'm not too concerned about controversy  

44. a) My life has no meaning  
b) My life often seems to have no meaning  
c) My life is occasionally meaningful  
d) My life is meaningful  
e) My life is very meaningful  

45. a) I can easily keep my mind on one thing  
b) I can keep my mind on one thing  
c) I can usually keep my mind on one thing  
d) I can keep my mind on one thing, if it's very simple  
e) I just cannot keep my mind on one thing  

46. a) How my friends react to what I do concerns me, but doesn't sway my opinion  
b) I rarely consider how my friends will react to what I do  
c) I occasionally take into account how my friends react to what I do  
d) It is important to consider how my friends react to what I do  
e) How my friends would react determines my actions  

47. a) I appreciate my parents making important decisions for me when I was a child  
b) I understand why my parents made important decisions for me when I was a child  
c) I have to live with the important decisions my parents made for me when I was a child  
d) I disapprove of my parents making important decisions for me when I was a child  
e) I regret my parents made important decisions for me when I was a child
48. a) If I can't concentrate on a task, I don't worry about it since it happens so frequently
   b) If I can't concentrate on a task, I feel disappointed, but I know I'm really not good at concentrating
   c) If I can't concentrate on a task, it doesn't really bother me, since I can't always concentrate when I want
   d) If I can't concentrate on a task, it strikes me as somewhat unusual
   e) If I can't concentrate on a task, it must be due to illness or something else out of my control.

49. a) Things or events don't distract me unduly when I'm concentrating
   b) Things or events distract me occasionally when I'm concentrating
   c) Things or events often distract me when I'm concentrating
   d) Things or events usually distract me when I'm concentrating
   e) Things or events easily distract me when I'm concentrating

50. a) I am the controller of my destiny
   b) I contribute significantly to my destiny
   c) I can alter my destiny
   d) I can not completely alter my destiny
   e) I can not alter my destiny

51. a) I can keep many projects going at once
   b) I can keep a few projects going at once
   c) I can keep two or three projects going at once
   d) I can keep only one or two projects going at once
   e) I can keep only one project going at a time

52. a) I feel good, even when alone
   b) I feel better in the company of others
   c) I feel lonely occasionally, even when with others
   d) I feel lonely when left by myself
   e) I feel lonely, even when with others

53. a) I just can't tolerate any more hassles right now
   b) I don't think I can tolerate any more hassles right now
   c) I don't think I can tolerate anything but a mild hassle right now
   d) I have some tolerance for hassles left
   e) I have tolerance for more hassles
54. a) The uncontroversial and conventional way is just one way of doing something  
   b) The uncontroversial and conventional way is an easy way of doing something  
   c) The uncontroversial and conventional way is a good way of doing something  
   d) The uncontroversial and conventional way is a preferred way of doing something  
   e) The uncontroversial and conventional way is the only way of doing something

55. a) I can't follow the point of a conversation  
   b) I can't follow the point of most conversations  
   c) I can't follow the point of any involved conversations  
   d) I can follow the point of most conversations  
   e) I can follow the point of almost any conversation

56. a) When I'm doing something, whether or not it is the conventional way doesn't matter  
   b) I take the conventional way into account when I'm doing something  
   c) The conventional way and my way to do something usually overlap  
   d) The conventional way is usually the only way to do something  
   e) The conventional way is the only way to do something that I haven't done before

57. a) I rarely accomplish what I set out to do  
   b) I doubt if I can accomplish what I set out to do  
   c) I believe I can accomplish what I set out to do  
   d) I usually accomplish what I set out to do  
   e) I can almost always accomplish something I set out to do

58. a) My success is definitely due to my control over events in my life  
   b) My success is, to a large extent, due to my control over events in my life  
   c) My success is only somewhat due to my control over events in my life  
   d) My success is due to someone else's control over events in my life  
   e) My success is not due to my control over events in my life

59. a) I was treated as an equal at home  
   b) I wasn't always treated as an equal at home  
   c) I was only sometimes treated as an equal at home  
   d) I was not often treated as an equal at home  
   e) I was seldom treated as an equal at home
60. The phrase "it takes the depths of despair to appreciate the highs of life:"
  a) is ridiculous
  b) is hard to understand
  c) is acceptable to some people, but not me
  d) is fairly accurate
  e) is a subtle truth

61. a) I am certainly not known for my ability to concentrate
   b) I am known for somethings, but not for my ability to concentrate
   c) I can concentrate, but not to the extent someone else would see it as an ability
   d) I can concentrate enough to do my tasks ably
   e) I can concentrate to the extent that some others see it as an ability

62. a) What is right, rather than what is easy, is what I try to do
   b) What is right and easy is what I try to do
   c) What is easy, and close to right, is what I try to do
   d) What is easy is more important than what is right in what I try to do
   e) What is easy to do is usually the right thing to do

63. a) Success depends on will power
   b) A person willing to work hard has a good chance of succeeding
   c) Good effort and luck determine success
   d) Success depends on lucky breaks
   e) Success is determined by fate

64. a) My friends and I have few fears
   b) Compared with my friends, I have few fears
   c) I and my friends have the average amount of fears
   d) I have more fears than some of my friends
   e) I have more fears than almost anyone I know

65. I have been basically making my own decisions since I was:
   a) 16
   b) 17
   c) 18
   d) 19
   e) 20
66. a) Perseverance is a strong part of my personality
       b) Perseverance is certainly a part of my personality
       c) Perseverance is definitely not a strong point in my personality
       d) Perseverance is probably not in my personality
       e) Perseverance is a weak point of my personality

67. a) I could always get a fair trial at home
       b) I could usually get a fair trial at home
       c) I could sometimes get a fair trial at home
       d) I couldn't usually get a fair trial at home
       e) I could rarely get a fair trial at home

68. a) I do not believe in will power
       b) I do not really believe in will power
       c) I can trust my belief in will power
       d) I believe in will power
       e) I firmly believe in will power

69. a) I am usually at peace with the world
       b) I occasionally am at peace with the world
       c) I have felt what it is to be at peace with the world
       d) I have never been at peace with the world
       e) I don't believe one can be at peace with the world

70. a) I am getting a good deal out of life
       b) I am getting some good out of life
       c) I am getting my share of good out of life
       d) I am getting some bad deals out of life
       e) I am getting the short end of the stick out of life

71. a) My life is drab
       b) My life is not drab, but generally slow
       c) My life is mildly interesting
       d) My life is occasionally exciting
       e) My life is full of excitement

72. a) Fear of not succeeding is not a fear of mine
       b) Fear of not succeeding has been a fear of mine on occasions
       c) Fear of not succeeding is something that has been a bother
       d) Fear of not succeeding is a common fear of mine
       e) Fear of not succeeding is a strong fear of mine
73. a) I admire someone who does what he or she thinks is right
   b) I like someone who does what he or she thinks is right
   c) I tolerate someone who does what he or she thinks is right
   d) I dislike someone who does what he or she thinks is right
   e) I distrust someone who does what he or she thinks is right

74. a) I haven't seriously attempted many things, because I knew I wouldn't be successful
   b) I haven't seriously attempted somethings, because I knew I wouldn't be successful
   c) I occasionally haven't attempted some things, because I knew I wouldn't be successful
   d) I rarely have failed to attempt something because I knew I wouldn't be successful
   e) Fear of failure has never made me fail to attempt something seriously

75. a) Personal defeats are unbearable
   b) Personal defeats make me depressed
   c) Personal defeats make me very unhappy
   d) Personal defeats are expected, but are still unwelcomed
   e) Personal defeats are expected, and shouldn't be worried about

76. a) What's good for most people is unrelated to what's good for me
   b) What's good for most people is remotely related to what's good for me
   c) What's good for most people is related to what's good for me
   d) What's good for most people is probably what's good for me
   e) What's good for most people is good for me

77. a) What the neighbors might say doesn't bother me
   b) What the neighbors might say concerns me, but doesn't bother me
   c) What the neighbors might say concerns me
   d) What the neighbors might say is important
   e) What the neighbors might say is very important to me
78. a) My parents never really let me make my own decisions  
b) My parents seldom let me make my own decisions  
c) My parents and I decided together any decisions concerning me  
d) My parents generally let me make my own decisions  
e) I almost always made my own decisions

79. a) I enjoy my life  
b) I approve of my life  
c) I tolerate my life  
d) I dislike my life  
e) I am disgusted with my life

80. a) I am the boss of my life  
b) I am one of the bosses of my life  
c) I am not always the boss of my life  
d) I am rarely the boss of my life  
e) I am never really the boss of my life

81. a) My parent's wishes are my own when I'm doing something  
b) My parent's wishes are important when I'm doing something  
c) My parent's wishes are taken into account when I'm doing something  
d) My parent's wishes are not always needed when I'm doing something  
e) My parent's wishes are irrelevant when I'm doing something

82. a) I feel useless  
b) I feel useless often  
c) At times I feel useless  
d) I only occasionally feel useless  
e) I rarely feel useless

83. a) I am self-confident  
b) I have a lot of self-confidence  
c) I have some self-confidence  
d) I am as self-conscious as self-confident  
e) I am lacking in self-confidence
84. a) I was never told by my parents that I absolutely had to do something
   b) I was only told once or twice by my parents that I absolutely had to do something
   c) I was told a few times by my parents that I absolutely had to do something
   d) I was told several times by my parents that I absolutely had to do something
   e) I was often told by my parents that I absolutely had to do something

85. a) I can finish with ease the projects I have started
   b) I can usually finish the projects I have started
   c) I have to work at finishing already started projects
   d) I find it hard to finish projects I have already started
   e) I find it almost impossible to finish projects I have already started

86. a) I am known for my stick-to-it-tiveness
   b) I am known for a share of stick-to-it-tiveness
   c) I am known for some things, but not for a share of stick-to-it-tiveness
   d) I am known for lacking some stick-to-it-tiveness
   e) I seriously lack stick-to-it-tiveness

87. a) I always had to suffer for somebody else's mistake at home
   b) I usually had to suffer for somebody else's mistake at home
   c) I sometimes had to suffer for somebody else's mistake at home
   d) I occasionally had to suffer for somebody else's mistake at home
   e) I seldom had to suffer for somebody else's mistake at home

88. a) I approve of my life
   b) I tolerate my life
   c) I put up with my life
   d) I dislike my life
   e) I disgust my life

89. a) I am known more as a failure than as capable
   b) I am not known as being capable
   c) I am known for being somewhat capable
   d) I am known for being capable
   e) I am known for being quite capable
90. a) At home, I never had a chance to decide what we did as a family
b) At home, I rarely had a chance to decide what we did as a family
c) At home, I always could suggest what we did as a family
d) At home, I occasionally had a chance to decide what we did as a family
e) At home, my decision about what we did as a family was always taken into account
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