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Dennis F. Gardner University of Nebraska at Omaha

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THE MANIFEST ANXIETY-DEFENSIVENESS SCALE, INDUCTION OF THREAT TO SELF-ESTEEM, AND THE RESOLUTION OF DISSONANCE

> A Thesis Presented to the Department of Psychology and the Faculty of the Graduate College University of Nebraska at Omaha

In Partial Fulfillment of the Requirements for the Degree Master of Arts

> by Dennis F. Gardner August 1970

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Chopin

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It has been suggested that self-esteem is a significant contributing variable in determining defensive behavior (Asch, 1948; Janis & Field, 1959; Lazarus & Longo, 1953; Rosenzweig, 1938; Sears, 1940). Several studies suggest that individuals of high and low self-esteem (SE) manifest different patterns of response to the experience of success and failure (Altrochi, Parsons, & Dickoff, 1960; Stotland & Hillmer, 1962; Stotland, Thorley, Thomas, Cohen, & Zander, 1957). Further, Block and Thomas (1955) and Altrochi, Parsons, and Dickoff (1960) have shown that persons with high SE tend to avoid threatening materials, while persons with low SE tend to approach and experience threatening materials. However, a coherent dynamic picture has yet to emerge from the total pattern of these relationships.

It seems conceptually advantageous to consider the concept of defense in connection with adaptation to real and potential threat to self-esteem. While researchers in this area have concentrated their efforts toward the discovery of individual differences in <u>S</u>s customary <u>mode</u> of ego defense (Carlson, 1954; Caron & Wallach, 1957; Eriksen, 1951, 1952, 1954; Gordon, 1957; Lazarus, Eriksen & Fonda, 1951; Lazarus & Longo, 1953; Truax, 1957), somewhat less attention has been paid to the individual's <u>ability and efficiency</u> to satisfactorily resolve the conflict situation and minimize threat and anxiety.

Millimet (1970) has developed the Manifest Anxiety-Defensiveness (MAD, 1970) scale, a scale purporting to measuring a dimension of personality reflecting low anxiety and effective avoidance defenses against anxiety (LA-HAVD) at one pole and high anxiety and ineffective avoidance defenses (HA-LAVD) against anxiety at the other pole. Millimet suggests that anxiety and defensiveness are inversely related, bipolar variables, as the absence of effective avoidance defenses against anxiety should be expected to lead to the increased experience of anxiety. Conversely, the presence of effective avoidance defenses against anxiety should lead to the decreased experience of anxiety. The MAD scale has been shown to possess very high reliability (test-retest = .95; split-half = .91; k-r 20 = .90) and several studies considering normal and psychiatric samples indicate satisfactory validity (Millimet, 1970). Millimet suggests that an individual scoring at the high end of the MAD scale is highly anxious, and deficient in his ability to avoid real or potential threat. A low scorer on the MAD scale should exhibit the opposite characteristics.

The present study, in part, attempts to clarify the extent of dimensional overlap between a personality instrument devised to reflect a manifest anxiety-defensiveness dimension and an instrument measuring a dimension of selfesteem. Predictions associated with these dimensions may then be related to differential reactions to success and failure.

The prediction based on the ego-psychology model, as discussed above, hypothesizes that the occurrence of defensive behavior is a function of the differential experience of success and failure and efficiency of avoidance defenses as measured by the <u>MAD</u> scale. Individuals scoring at the low end of the <u>MAD</u> scale should manifest high SE and avoid threatening materials, while individuals scoring at the high end of the <u>MAD</u> scale should manifest low SE and approach threatening materials.

An additional aspect of the present study is the consideration of the cognitive dissonance model as an alternate explanation of the results. The basic premise in Festinger's (1957) cognitive dissonance theory is that the existence of dissonance, i.e., the existence of inconsistent relations among cognitions, will motivate the person to try to reduce dissonance, an unpleasant psychological state, and achieve consonance, a more enviable psychological state. Festinger uses the term cognition to refer to any knowledge, opinion or belief about the environment, about oneself, or about one's behavior. According to Festinger, inconsistent or contradictory relations between any two of these elements create tension which the individual strives to reduce by making his cognitions more consistent. Many experiments of dissonance have been concerned with one kind of inconsistent pair of elements, namely, self-referent cognitions, i.e., a belief about oneself or one's behavior and knowledge of

action or commitment to action that does not follow from the belief (Brown, 1965).

The best way of illustrating these points is to describe a hypothetical illustration. Take for example, a person who considers himself to be of average intelligence. This person upon taking an intelligence test may be confronted with a result which suggests that, contrary to his belief, he does not possess average intelligence. In fact, the test result indicates that his performance is far below what would be expected for his age group and amount of education. This knowledge is certainly dissonant with his cognition that he possesses average intellectual ability and according to cognitive dissonance theory, there would be pressures to reduce this dissonance. Assuming that appropriate measurement techniques were available, one should be able to observe the attempt to reduce dissonance.

Chapanis and Chapanis (1964) have questioned the methodological integrity of numerous studies (e.g. Cohen, Brehm, & Fleming, 1958) of cognitive dissonance in which much of the data was discarded. The prevailing rationale for the rejecting of cases, as pointed out by Chapanis and Chapanis (1964), was that an unselected sample does not permit an adequate test of the dissonance hypothesis. Many dissonance experimenters contend that if some <u>S</u>s do not conform in the predicted manner, then the possibility arises that either these <u>S</u>s are reducing their dissonance through some channel other than the one predicted, or dissonance failed to occur for these <u>S</u>s. The dissonance workers maintain that when this happens, it is justifiable to eliminate these <u>S</u>s from the analysis since their behavior would be inappropriate for the testing of the immediate hypothesis.

It should be understood that there is no guarantee that the experimental procedures will be successful in producing dissonance for all Ss. As indicated above, many studies have rejected Ss from further experimental consideration because they failed to display dissonance. Brown (1965) points out that investigators generally work with combinations of cognitive elements assumed to be dissonant because of an unexpressed premise that these cognitions are ones that almost everyone holds. However, a combination of ideas that is dissonant for one person may not be dissonant for another, it depends on the other things each person believes. It may be understood that many of the experimental manipulations now being used in dissonance research would fail to generate dissonance in a person who had a very low opinion of himself. A thoroughly negative self-conception might eliminate dissonance for many possible experimental manipulations.

To clarify this point, reconsider the hypothetical illustration previously described. This time there are two individuals, A and B. Both consider themselves to bo of average intelligence, however, A has a generally high opinion of himself, whereas B has a generally low opinion of himself. Both are confronted with threatening information which suggests that their level of intelligence is far below what would be expected for his age group and amount of education. For both A and B, this information is inconsistent with their belief that they possess average intelligence. However, for A the information is also strongly dissonant with his belief that he is an effective person. For B, the information is quite consistent with his belief that he is a generally worthless person. Considered in this light, the equivalent information would be strongly dissonant for A, the high SE person, but consonant, or only mildly dissonant for B, the low SE person.

It may be understood that producing dissonance in an experimental situation involves more than simply confronting the individual with a cognition assumed to be inconsistent or incompatible with one that he already holds. The occurrence of a state of dissonance is dependent on each person's psychological expectations.

Many of the criticisms of cognitive dissonance research could be resolved by careful experimental design. Since dissonance derives from premises about oneself and one's behavior, dissonance should vary with one's self-concept. It should be possible, for example, to contrive situations that would be dissonant for a particular group of <u>S</u>s while at the same time be consonant for a contrasted group of <u>S</u>s.

The present investigation has three objectives: (1) to consider the extent of common variance between the dimensions of self-esteem and manifest anxiety-defensiveness; (2) to discover the defensive strategies of high and low scorers on the <u>MAD</u>; (3) to consider the conditions affecting the occurrence of cognitive dissonance.

Since an individual scoring at the high end of the <u>MAD</u> scale is highly anxious and deficient in his ability to avoid real or potential threat (Millimet, 1970), he should tend to ruminate about threat, conflict, and the negative qualities of himself. He may, therefore, be expected to manifest low self-esteem. Since an individual scoring at the low end of the <u>MAD</u> is low anxious and possesses adequate avoidance defenses (Millimet, 1970), he should tend to remain unaware of threat, conflict, and negative attitudes and focus on the positive qualities of himself. He may, therefore, be expected to manifest high self-esteem.

Since dissonance derives from premises about oneself and one's behavior, dissonance should vary with one's selfconcept. To be sure, the occurrence of a state of dissonance is dependent on one's psychological expectations. The present study considers four groups of <u>S</u>s: (1) HA-LAVD <u>S</u>s-failure condition; (2) HA-LAVD <u>S</u>s-success condition; (3) LA-HAVD <u>S</u>sfailure condition; (4) LA-HAVD <u>S</u>s-success condition. The predictions are based on the hypothesis that as LA-HAVD <u>S</u>s are expected to possess high SE, and HA-LAVD Ss are expected

to possess low SE, it should follow that confronting LA-HAVD <u>S</u>s with information suggesting that they possess below average intelligence should produce a dissonance reaction. However, the same information when presented to the HA-LAVD <u>S</u>s should not produce dissonance. The negative information should be consistent with the unfavorable opinion HA-LAVD <u>S</u>s have of themselves and should lead to the experience of consonance or only mild dissonance.

Confronting LA-HAVD <u>S</u>s with information which is selfenhancing should be consistent with the view of being nearly perfect individuals. However, the self-enhancing information should be inconsistent with the HA-LAVD <u>S</u>s view of being unworthy individuals. Consequently, for information which is self-enhancing, one would expect dissonance to occur for the HA-LAVD <u>S</u>s, but not for the LA-HAVD Ss.

Furthermore, HA-LAVD <u>S</u>s and LA-HAVD <u>S</u>s should be expected to differ in their attempts to reduce dissonance. While HA-LAVD <u>S</u>s should approach threatening material and attempt to distort or modify it, LA-HAVD <u>S</u>s experiencing dissonance should be more successful in their attempt to ignore or deny these materials.

#### METHOD

# Subjects

Thirty <u>Ss</u> falling at the high end (HA-LAVD) of the Millimet (1970) Manifest Anxiety-Defensiveness (<u>MAD</u>) scale and 30 <u>Ss</u> falling at the low end (LA-HAVD) of the (<u>MAD</u>) scale were selected for further consideration. The male and female <u>Ss</u> participating in this study were drawn from introductory psychology courses at the University of Nebraska at Omaha.

Prior to participation in the experiment, each <u>S</u>'s selfesteem was assessed. An Interpersonal Check List (ICL, Leary. 1957) consisting of 128 adjectives or short adjective phrases, was used for this purpose. The Leary Check List has been shown to possess high reliability (test-retest = .78) and satisfactory validity (Leary, 1957). Each S was asked to check all of the items which he believed described his behavior as he presently sees himself. On a second copy of the check list, S was asked to check the items which describe his ideal, his picture of himself as he should like to be. Absolute discrepancies between perceived-self and ideal-self were determined. The discrepancy between perceived self and ideal self thus provided an index of self-esteem. Selfesteem, as presently defined, varies inversely with the size of the discrepancy score between perceived-self and ideal-self.

### Materials and Procedure

The HA-LAVD <u>S</u>s and <u>LA-HAVD</u> <u>S</u>s were assigned at random to experimental conditions of failure or success. This experimental design yielded four groups of 15 <u>S</u>s: (1) HA-LAVD <u>S</u>s-failure condition, (2) <u>LA-HAVD</u> <u>S</u>s-failure condition, (3) HA-LAVD <u>S</u>s-success condition, (4) <u>LA-HAVD</u> <u>S</u>ssuccess condition.

Upon entering the laboratory, <u>S</u>s were seated one seat apart and told that discussion among them would not be necessary or permitted. At this point, all <u>S</u>s were administered the Harvard Quick-Scoring Analogies of Intellectual Capacity (Millimet, 1968). The test consists of 20 analogies, all of which are in the form A : B :: C : \_\_\_. However, only five of the analogies are solvable, the remaining 15 are ambiguous, frustrating, and have no correct answer.

Each <u>S</u> was given a booklet consisting of instructions and the analogies test (see Appendix A). <u>S</u>s were informed that this test had been administered in many other universities as well as their own and that they would be given the opportunity to compare their performance with a table of norms (see Appendix B) as a check against their present college standing (Freshman, Sophomore, etc.) which may not necessarily reflect their true intollectual capacity. <u>S</u>s were then given 12 minutes to complete the test of analogies. At the end of the allotted time the analogy tests were collected. At this time  $\underline{S}s$  were administered a brief questionnaire (see Appendix C), while  $\underline{E}$  "scored" the analogies test. The questionnaire referred to the kinds of feelings or emotions intelligence tests may evoke from an individual.  $\underline{S}s$ were asked to endorse items reflecting the way he presently feels after taking an intelligence test.

After completion of the questionnaire (approximately 10 minutes), <u>S</u>s received the results of their performance on the analogies test. Each <u>S</u> was handed a form with his score, a table of norms, and a typed explanatory paragraph. The table of norms was included to permit the comparison of <u>S</u>'s score with those expected for academic levels ranging from Freshman in high school to Senior in College. The following paragraph was intended to clarify each S's score:

For your own information you may wish to know what your score means. It has been shown that people who score two or more years above their present college level find college much easier than most students and usually go on to do very well. People who score just about what is expected for their age and year level find about the average number of problems and difficulties in college, while those people who score two or more years below their present college standing usually find college exceedingly difficult and many have problems finishing.

<u>S</u>s under the failure condition were given the score 8. (upper sophomore in high school), while <u>S</u>s under success conditions were given a score of 18 (upper junior in college).

<u>S</u>s were then asked to participate in a survey-type research program which they were told was being carried out in other universities as well as their own, and which would involve, on their part, filling out several questionnaires of varying nature. They were told that all replies would be held in strict confidence by the research organization, and would be evaluated in terms of averages for all the participants.

After distributing the questionnaires as quickly as possible to prevent any verbal interaction among <u>S</u>s, the instructions were read aloud by <u>E</u> while <u>S</u>s followed them in their booklets. <u>S</u>s were asked to fill in identifying data on the front page before completing the questionnaires.

The first instrument (see Appendix C) served as an index of the way the <u>S</u> was willing or able to characterize his own emotional state at the time of testing. The results were to be used for determining whether dissonance had been produced by the experimental manipulations. A list of adjectives, each followed by a five-point rating scale, was presented with the following instructions:

Intelligence testing produces various feelings in those being tested. This questionnaire does not have any right or wrong answers; you are asked only to report your own feelings as accurately as possible. Place a check mark after each adjective so as to describe how you feel at the present time.

The last questionnaire (see Appendix D) served as a measure of the manner and direction of dissonance reduction. It was comprised of twenty-three items relating to various aspects of the testing situation. Each statement was followed by a seven-point rating scale, and <u>S</u>s were asked to indicate the extent of their agreement or disagreement with each statement. This instrument was intended to provide numerous ways of eliminating or reducing dissonance relating to the immediate situation. The score was the sum of the agreement scores for all statements.

The following is a summary of the experimental procedure:

- Ss were administered an analogies test (see Appendix A) which was purposely designed to be ambiguous and frustrating.
- 2. Upon completion of the analogies test each S was asked to characterize his feelings concerning the taking of an intelligence test (see Appendix C). The results were used to determine each S's "base-level" of dissonance.
- 3. Ss then received feedback (see Appendix B) concerning their performance on the intelligence test.
- 4. After receiving feedback, <u>S</u>s were asked to characterize their feelings upon hearing their scores on the analogies test (see Appendix D).
- 5. <u>S</u>s were then asked to evaluate various aspects of the entire testing situation (see Appendix D).

#### RESULTS

The Interpersonal Check List (<u>ICL</u>, Leary, 1957) was used to assess self-esteem. Self-esteem as defined in this study varied inversely with the size of the absolute discrepancy score between perceived self and ideal self. The discrepancy scores of the HA-LAVD <u>S</u>s (<u>N</u> = 43, <u>M</u> = 61.54, <u>SD</u> = 23.45) were significantly higher than the scores of the LA-HAVD <u>S</u>s (<u>N</u> = 38, <u>M</u> = 33.05, <u>SD</u> = 13.17) (<u>t</u> = 6.62, <u>df</u> = 79, p<.001).

Upon examining the data more closely it was determined that the variances of the two distributions were not homogeneous (<u>F</u>-Max = 3.13, p $\lt$ .01). For this reason the Mann-Whitney U-test was chosen for the analysis. On the basis of this analysis it was again concluded that the perceived self-ideal self discrepancy scores of LA-HAVD <u>S</u>s and HA-LAVD <u>S</u>s was statistically significant (<u>z</u> = 5.9, p $\lt$ .0001). Thus the hypothesis that LA-HAVD <u>S</u>s manifest smaller perceived self-ideal self discrepancies than HA-LAVD Ss was clearly supported.

# Cognitive Dissonance Analysis

The purpose of this phase of the experiment was to investigate the relationship between anxiety and defense and differential feedback of success and failure upon the . occurrence of dissonance. The plan for this experiment was a 2 x 2 x 2 factorial arrangement of treatments with repeated measures on the last factor. Factor A reflects anxietydefense as measured by the <u>MAD</u> scale. Factor B represents experimental conditions, i.e., success or failure on an intelligence test. Factor C represents a trials component on the dissonance measure, i.e., feelings concerning intelligence tests before and after differential feedback.

# TABLE I

# MEANS (M) AND STANDARD DEVIATIONS (SD) FOR BEFORE FEEDBACK AND AFTER FEEDBACK DISSONANCE SCORES (LOWER SCORES REPRESENT GREATER AMOUNTS OF EXPERIENCED DISSONANCE)

GROUPS		SUCC	ESS	FAII	LURE
		Before Feedback	After Feedback	8efore Feedback	After Feedback
LA-HAVD <u>S</u> s	M	157.47	165.67	160.20	154.60
	SD	17.66	14.05	15.21	16.66
HA-LAVD <u>S</u> s	M	134.13	150.27	139.00	139.00
	SD	27.64	25.77	19.91	17.74

The mean dissonance scores before and after feedback are presented in Table I. Examination of the mean Before Feedback dissonance scores suggest that there is a pre-existing difference within each personality group. Because the experimental conditions had not yet been employed, the apparent mean differences within groups is contrary to expectations. If these differences had proved to be significant, any differences between these groups found later on could not be unambiguously interpreted. In order to determine whether these differences were significant, t-tests were performed on each set of data. The analysis revealed that the differential responses made by the two LA-HAVD groups  $(\underline{t} = 0.45, \underline{df} = 28, p > .50)$  and the two HA-LAVD groups  $(\underline{t} = 0.55, \underline{df} = 28, p > .50)$  were not significantly different from each other. On the basis of this analysis it was concluded that the differences in mean dissonance scores within groups were chance differences and that the threat of a possible confounded design had been alleviated. Therefore, the planned analysis was performed.

### TABLE II

# ANALYSIS OF VARIANCE OF DISSONANCE SCORES BEFORE AND AFTER DIFFERENTIAL FEEDBACK

SOURCE	<u>df</u>	MS	<u>F</u>	
BETWEEN SS	59			
A (GROUPS) B (CONDITIONS) Ab <u>S</u> s w. GPS.	1 1 1 56	10,697.41 407.01 7.01 640.12	16.71 .63 .01	p <b>&lt;.</b> 001
WITHIN SS	60			
C (FEEDBACK) AC BC ABC C x <u>S</u> s w. GPS.	1 1 1 56	658.00 343.42 1,680.02 10.19 149.16	4.41 2.30 11.26 .06	p <b>く.</b> 05 p <b>く.</b> 005

The results of a Repeated Measures analysis of variance (Winer, 1962, pp. 337-348) of dissonance scores before and after differential feedback are presented in Table II. In order to support the hypothesis made prior to the experiment it was necessary to find statistical significance for the Groups x Condition x Feedback interaction (factor ABC). Examination of Table II indicates that the three factor interaction is not statistically significant (F < 1). However, since a priori information about the underlying sources of variation in the experimental variables suggest that certain of the trends should be more dominant than others, further examination of the data was appropriate. Comparisons were made between the mean dissonance scores before and after feedback for each of the experimental groups. As a low score suggests greater dissonance, a negative difference score represents a decrease in dissonance.

Although the predicted Groups x Condition x Feedback interaction was not significant, three of the experimental groups changed in the predicted direction. It had been predicted that the LA-HAVD-success and HA-LAVD-failure groups would not experience an increase in dissonance as a result of receiving feedback. These two groups had mean dissonance changes of -8.20 and 0 respectively. It is apparent that confronting LA-HAVD  $\underline{S}$ s with success resulted in a significant reduction in dissonance ( $\underline{t} = 2.82$ ,  $\underline{df} = 14$ , p $\lt$ .02). Furthermore, as was expected, confronting the HA-LAVD  $\underline{S}$ s with failure did not produce an increase in experienced dissonance, in fact, they showed no change.

The prediction for the LA-HAVD-failure and HA-LAVDsuccess groups was that both groups would show an increase in dissonance. Confronting the LA-HAVD group with failure produced a mean increase in dissonance of 5.60 ( $\underline{t} = 2.00$ ,  $\underline{df} = 14$ , p<.07). However, contrary to expectations confronting HA-LAVD Ss with success produced a mean decrease in dissonance of -16.13 ( $\underline{t} = 2.59$ ,  $\underline{df} = 14$ , p<.05).

Further examination of Table II shows that the main effect due to groups (factor A) was statistically significant  $(F(1, 56) = 16.71, p \lt.005)$ . This result indicates that LA-HAVD Ss experience considerably less distress and disturbance (M = 159.48, SD = 16.08) than do HA-LAVD Ss  $(\underline{M} = 140.60, \underline{SD} = 23.31)$  on a task reflecting intellectual competence. The main effect of Feedback (factor C) was also statistically significant (F(1, 56) = 4.41, p<.05). This result indicates that the mean amount of dissonance experienced Before Feedback (M = 147.70, SD = 23.11) was significantly greater than the mean amount of dissonance experienced After Feedback (M = 152.38, SD = 20.92). However, as the Conditions x Feedback (BC) interaction effect proved to be statistically significant (F(1, 56) = 11.26, p < .005), the main effect of Feedback should not be interpreted independently of the failure and success conditions.

Tests of simple effects of the BC interaction were then performed. The results of these comparisons indicated that prior to receiving feedback concerning performance on a difficult intelligence test,  $\underline{S}s$  experienced considerable distress and disturbance. Furthermore, it was found that  $\underline{S}s$ who were told that their performance was above average exhibited a marked reduction in dissonance (F = 14.89, p<.01), whereas telling  $\underline{S}s$  that their performance was far below average did not produce a decrease in experienced dissonance (F<1). Therefore,  $\underline{S}s$  under the failure condition would be expected to manifest more dissonance reducing behaviors than  $\underline{S}s$  under the success condition. The last questionnaire (see Appendix D) was designed to provide numerous ways to eliminate or reduce dissonance related to the experimental situation.

#### .TABLE III

SOURCE	df	MS	<u>F</u> _	
A (GROUPS)	l	735.00	3.44	p <b>&lt; .</b> 07
B (CONDITIONS)	l	493.06	2.31	
AB	l	.27	.00	
WITHIN	56	213.48		

ANALYSIS OF VARIANCE OF THE RESOLUTION OF DISSONANCE SCORES TO DIFFERENTIAL FEEDBACK

An analysis of variance performed on the dissonance reduction scores (see Table III) shows that the HA-LAVD <u>S</u>s and LA-HAVD <u>S</u>s differed in the amount of dissonance reducing behaviors manifested (F(1, 56) = 3.44, p  $\angle$ .07). The results

in Table III suggest that HA-LAVD <u>S</u>s and LA-HAVD <u>S</u>s differ in their customary mode and ability (efficacy) of resolving inconsistent cognitions. In order to better understand these differences, a number of further analyses were carried out. The twenty-three items comprising the measure of dissonance reduction were subdivided into categories on the basis of their content and separate analyses were performed on each. The content analysis resulted in five categories. The following is a list of the categories with an example of each:

- Irrational Aggression (5 items).
   Ex. The examiner has a well adjusted personality.
- 2. Examiner Blame (6 items). Ex. The examiner was to blame for some of the errors I made.
- 3. Self-Confidence (4 items). Ex. I did not do as well as the other students in the group.
- 4. Test Criticism (5 items). Ex. This intelligence test did not seem to be getting at what I think intelligence is all about.
- 5. Rationalization (3 items). Ex. I did not feel physically "up to par" during the testing.

The results of the individual analysis of variances for each of the categories are summarized in Table IV. These analyses indicate that LA-HAVD <u>S</u>s and HA-LAVD <u>S</u>s differ in their response to items reflecting low Self-Confidence and Rationalization. These findings suggest that HA-LAVD <u>S</u>s react to personal threat conditions by rationalizing and TABLE IV

ANALYSIS OF VARIANCE OF IRRATIONAL AGGRESSION, EXAMINER BLAME, SELF-CONFIDENCE, TEST CRITICISM AND RATIONALIZATION SCORES

.

		ť	#1	#2	2	#3	}	#4			#5
Source of Variation	df	Irra Aggr	tional ession	Examiner Blame	iner ne	Self Confidence	l f ance	Test Criticism	t cism	Ratio	Rationali- zation
		MS	<b>لد</b> _	MS	لب	ß	لب	MS	لب	MS	لب
A (GROUPS)		1.07	.03	12.15	.66	60,00	3.82**	62.02	62.02 2.32	1	64.07 3.89**
B (CONDITIONS)	Ч	5.40	.17	46.82 2.56	2.56	46.80	3.10	212.82 7.95*	7.95*	35.27 2.14	2.14
AB	-	13.07	•41	• 02	00.	13.07	.83	.02	• 00	.27	•02
WITHIN	56	56 31.88		18.29		15.70		26.75		16.45	

\* \* p **< 01** 

distorting their failure, whereas LA-HAVD <u>S</u>s are more successful in avoiding threatening aspects of the experimental situation.

Further examination of Table IV reveals that categories 1 (Irrational Aggression) and 2 (Examiner Blame) resulted in minimal differences between groups or between treatments (f < 1). It was suspected that perhaps an inhibition effect had been present. The items in categories 1 and 2 dealt with devaluating or in some way blaming  $\underline{E}$  for their performance. It may be understood that  $\underline{S}$ s were reluctant to endorse such items, for at the time  $\underline{E}$  was employed as a teaching assistant for the Introductory Psychology course, the source of the  $\underline{S}$ pool. On this basis, it seemed justifiable to eliminate items from the first two categories and perform an analysis of variance of the 11 remaining items. Table V summarizes the results of an analysis of variance of dissonance reduction scores exclusive of items relating directly to  $\underline{E}$ .

#### TABLE V

Source of Variation df MS F A (GROUPS) 558.15 5.36 1 p <.025 B (CONDITIONS) 1 756.15 7.26 p <.001 AB 18.15 .17 1 104.22 WITHIN 56

ANALYSIS OF VARIANCE OF DISSONANCE REDUCTION SCORES EXCLUSIVE OF ITEMS RELATING TO E

Table V shows a significant main effect due to groups  $(F(1, 56) = 5.36, p \lt.025)$ . This indicates that the LA-HAVD <u>S</u>s and HA-LAVD <u>S</u>s differ in their mean dissonance reduction scores. HA-LAVD <u>S</u>s exhibited significantly more dissonance reduction (<u>M</u> = 50.47, <u>SD</u> = 10.89) than LA-HAVD <u>S</u>s (<u>M</u> = 42.27, <u>SD</u> = 10.30). Thus the hypothesis that HA-LAVD <u>S</u>s and LA-HAVD <u>S</u>s differ in their dissonance reducing behaviors was supported.

Table V also shows that the main effect due to feedback was significant (F(1, 56) = 7.26, p $\lt.001$ ). Examination of the means reveals that <u>5</u>s in the failure condition (<u>M</u> = 46.87) scored significantly higher than <u>5</u>s in the success condition (<u>M</u> = 39.77). This finding suggests that the final questionnaire was a suitable tool for the reduction of dissonance experienced by <u>5</u>s in the failure condition.

### DISCUSSION

An intelligence test purposely designed to be ambiguous and frustrating was administered to two groups of Ss. Each group consisted of 30 LA-HAVD Ss and 30 HA-LAVD Ss as defined by the Manifest Anxiety-Defensiveness scale (Millimet, 1970). After taking the intelligence test, but prior to being informed of its result, a measure of dissonance was administered to the Ss. Dissonance was defined by the strength and frequency of endorsement of a series of adjectives differing in positive and negative affect. Thereafter, one group of Ss received information indicating that their performance was far below what would be expected for individuals of their age and education (failure condition). The remaining group of Ss received information indicating that their performance far exceeded what would be expected for individuals of their age and education (success condition).

The result of an initial assessment procedure had indicated that LA-HAVD <u>S</u>s and HA-LAVD <u>S</u>s differ in perceived self-ideal self discrepancy as indicated by the Leary (1957) Interpersonal Adjective Checklist. It was found, in accord with the prediction, that HA-LAVD <u>S</u>s respond with high selfideal discrepancies (low self-esteem) and LA-HAVD <u>S</u>s respond with low self-ideal discrepancies (high self-esteem).

Recause LA-HAVD <u>S</u>s possess high self-esteem and HA-LAVD <u>S</u>s possess low self-esteem, it was predicted that LA-HAVD <u>S</u>s would experience dissonance under the failure condition and that the HA-LAVD Ss would experience dissonance under the success condition. Using a similar line of reasoning, it was predicted that LA-HAVD Ss and HA-LAVD Ss would not experience dissonance under the success and failure conditions, respectively. As predicted, LA-HAVD Ss in the failure condition experienced an increase in dissonance, LA-HAVD Ss in the success condition experienced a decrease in dissonance, while HA-LAVD Ss in the failure condition did not experience an increase or decrease in dissonance. However, contrary to the prediction, HA-LAVD Ss in the success condition did not experience dissonance. In fact, this group of HA-LAVD Ss exhibited behaviors which reflected a marked reduction in dissonance, i.e., they endorsed adjectives which reflected relief and satisfaction. Thus the predictions relating the occurrence of dissonance to be a function of the personality dimension of Manifest Anxiety-Defensiveness and the differential feedback of success and failure were only partially supported.

It was shown that HA-LAVD <u>S</u>s experienced significantly more personal discomfort and distress than was experienced by LA-HAVD <u>S</u>s during the course of the experiment. This finding is consistent with the results of several studies cited in an earlier section of this paper in that LA-HAVD <u>S</u>s effectively avoid threatening materials, while HA-LAVD <u>S</u>s, by virtue of the inability to avoid threatening materials, are forced to experience them. In addition, the results showed that there were no differences between the success and failure groups on a measure of personal discomfort and distress immediately following the taking of the intelligence test and prior to the experience of the success and failure conditions. However, <u>S</u>s in the success condition experienced a significant amount of relief and satisfaction, while <u>S</u>s in the failure condition showed no such increase in relief and satisfaction but continued to endorse adjectives which reflected uneasiness, discouragement and displeasure.

While the results of the main effect of groups (LA-HAVD-HA-LAVD) and conditions (success-failure) are highly provocative, it may be recalled that HA-LAVD Ss in the success condition experienced a significant reduction in personal discomfort and distress, while LA-HAVD Ss in the failure condition experienced a significant increase in personal discomfort and distress. These findings suggest that LA-HAVD Ss are not always free from personal discomfort and HA-LAVD Ss are not always destined to experience this disturbing state, i.e., situational contingencies seem to play an important role in mediating between the behavioral predispositions of Ss high and low in anxiety and defense and the experience of personal discomfort and distress. While . LA-HAVD Ss tend to remove themselves from unpleasant circumstances and deny the existence of threatening information, and HA-LAVD Ss tend to approach unpleasant circumstances and uphold the existence of threatening information, these

relationships are not inevitable, but are subject to change when LA-HAVD <u>S</u>s and HA-LAVD <u>S</u>s are compelled to experience certain environmental considerations.

Confronting LA-HAVD <u>S</u>s with information suggesting that they are intellectually competent merely serves to confirm the favorable opinion these individuals already have of themselves. However, when environmental information reflects unfavorably upon them, they are, in turn, thrust into a state of personal discomfort. Confronting HA-LAVD <u>S</u>s with information suggesting that they are intellectually deficient merely serves to confirm the unfavorable opinion these individuals already have of themselves. On the other hand, when information from the environment reflects favorably upon them, HA-LAVD <u>S</u>s grasp at this information much like a drowning man grasping for a straw.

It has been shown that <u>S</u>s in the success and failure groups had experienced an equal amount of dissonance following the taking of the analogies test and prior to the advent of success or failure. The imparting of information indicating that success had been achieved should have provided the necessary cognitive elements for the occurrence of dissonance reduction. <u>S</u>s in the failure condition, however, had no such opportunity for dissonance reduction. In fact, the imparting of the information indicating that failure had occurred should have led to the increased experience of dissonance. The results, as discussed above, confirmed these predictions.

As dissonance is an unpleasant state, its presence should provide the necessary conditions for the occurrence of dissonance reducing behavior. The final questionnaire used in this study was designed to give <u>S</u>s the opportunity to reduce any dissonance remaining after the experience of the success and failure conditions. As <u>S</u>s in the failure condition were experiencing significantly more dissonance than <u>S</u>s in the success condition, it was expected that the former group of <u>S</u>s would engage in significantly more dissonance reducing behavior. In this instance, dissonance reducing behavior was defined by the frequency and strength of item endorsement suggesting that the score made on the analogies test was not a function of an intellectual deficiency, but, rather, a product of a variety of situational determinants.

As  $\underline{E}$  was a teaching assistant for many of the discussion sections from which these  $\underline{S}$ s were drawn and was well known to the remaining  $\underline{S}$ s, it was decided, after a preliminary analysis, to withdraw consideration for certain items which referred to the general incompetence and ineptitude of E.

The resulting analysis supported the contentions stated above. <u>Ss</u> in the failure condition endorsed significantly more items suggesting that their test performance was a product of test-taking anxiety, lack of self-confidence, and a general inability to perform capably when being timed and observed.

The analysis also showed that HA-LAVD <u>S</u>s made item endorsements similar to those made by <u>S</u>s in the failure group. This is not a surprising finding. As HA-LAVD <u>S</u>s were defined by a high score on the <u>MAD</u> scale, a scale comprised of items reflecting self-disparagement, it was not inconsistent that HA-LAVD <u>S</u>s should endorse items which reflect test-taking anxiety, lack of self-confidence, and a general inability to perform under stressful conditions.

In conclusion, the present study has demonstrated that many of the criticisms of cognitive dissonance research can be resolved by careful experimental design. The results of this study suggest that precise empirical investigations of dissonance may be developed if certain personality characteristics of  $\underline{S}$ s are taken into consideration and the conditions in which dissonance is expected to occur are indicated. In using these devices, the present study found only partial support for <u>both</u> the cognitive dissonance model and the ego-psychology model. It would appear that some combination of these models would result in a more accurate prediction of behavior.

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APPENDIX

### APPENDIX A

### HARVARD QUICK-SCORING ANALOGIES OF INTELLECTUAL

### CAPACITY MIDWESTERN EDITION FORM A

This new test has been found to be a highly predictive, quickscoring method for determining intellectual capacity. It is particularly effective at the college level. Do not underestimate the simplicity and ease in completing this test: The most obvious answer is not necessarily the most correct as content is not always the critical factor. Read each analogy carefully.

1.	Animals : Zoology :: Plants :
	A. Physiology B. Astronomy C. Botany D. Chemistry
2.	Red : Ruby :: Green :
	A. Opal B. Emerald C. Sapphire D. Topaz
3.	Hamlet : Shakespeare :: Old Man :
	A. Spillane B. Faulkner C. Salinger D. Hemingway
4.	Achilles : Heel :: Samson :
	A. Jawbone B. Hair C. Riddle D. Grapes
5.	Hammer : Chisel :: Knife :
	A. Fork B. Dish C. Spoon D. Steak
6.	Rabbi : Priest :: Senator :
	A. President B. Judge C. Vice-President D. Representative
7.	Fish : Trout :: Fence :
	A. Barbwire B. Wooden C. Picket D. Corral
8.	Radio : Telephone :: Frame :
	A. Painter B. Oil C. Photograph D. Picture

9.	Sculpture : Art :: Track :
	A. Team B. Meet C. Animal D. Race
10.	Rain : Snow :: Lightning :
	A. Cyclone B. Hurricane C. Tornado D. Monsoon
11.	Psychologist : Archaeologist :: Nurse :
	A. Lawyer B. Farmer C. Classblower D. Accountant
12.	Spanish : French :: Apple :
	A. Cherry B. Plum C. Peach D. Apricot
13.	Chaucer : Spencer :: Freud :
	A. Jung B. Adler C. Breuer D. Charcot
14.	Retina : Eye :: Teeth :
	A. Mouth B. Face C. Stomach D. Head
15.	Paper : Clip :: Chain :
	A. Store B. Gang C. Lock D. Saw
16.	Burn : Melt :: Destroy :
	A. Ravage B. Conquer C. Defeat D. Undo
17.	Queen : England :: Title :
	A. Nobility B. Crown C. Monarchy D. Oligarchy
18.	Death : Decay :: Birth :
	A. Life B. Liberty C. Beauty D. Baby
19.	Direction : North :: Level :
	A. Ground B. Head C. Sky D. Load
20.	Candle : Illumination :: Atom :
	A. Proton B. Neutron C. Electron D. Alpha Particle

YOUR SCORE IS \_\_\_\_\_

### HARVARD QUICK-SCORING ANALOGIES OF INTELLECTUAL CAPACITY MIDWESTERN EDITION

NDRMS

HIGH SCHOOL

COLLEGE

5	LOWER	FRESHMAN	13
6	UPPER	FRESHMAN	14
7	LOWER	SOPHOMORE	15
8	UPPER	SOPHOMORE	16
9	LOWER	JUNIOR	17
10	UPPER	JUNIOR	18
11	LOWEF	SENIOR	19
12	UPPER	SENIOR	20

For your own information you may wish to know what your score means. It has been shown that people who score one or more years above their present college level find college much easier than most students and usually go on to do very well. People who score just about what is expected for their age and year level find about the average number of problems and difficulties in college, while those people who score one or more years below their present college standing usually find college exceedingly difficult and many have problems finishing.

#### APPENDIX C

### DO NOT WRITE ON THIS PAPER

### Record your answers on the IBM answer sheet 1 to 50.

### Inventory of Feelings

Intelligence testing produces various feelings in those being tested. This questionnaire does not have any right or wrong answers; you are asked only to report your own feelings as accurately as possible. Place a check mark after each adjective so as to describe how you feel <u>at the present time</u>. Below is a list of 50 adjectives. Rate <u>each</u> adjective according to the following scale:

BLACKEN IN SPACE NO.

## <u>1 for EXTREMELY</u> <u>2 for MODERATELY</u> <u>3 for SLIGHTLY</u>

### 4 for NOT AT ALL 5 for CANNOT SAY

Put your name on the answer sheet. Consider each adjective carefully. When you have decided on an answer based on the above scale of 1 to 5, blacken the corresponding space on the answer sheet with a No. 2 pencil. Remember, rate all 50 adjectives so as to describe how you feel at the present time.

Right now I feel:

1.	Tense	11.	Calm	21.	Gloomy
2.	Irked	12.	Content	22.	Self-Satisfied
3.	Нарру	13.	Fearful	23.	Worried
4.	Annoyed	14.	Inadequate	24.	Hostile
5.	Relaxed	15.	Intellectual	25.	Aggressive
6.	Depressed	16.	Cheerful	26.	Suspicious ·.
7.	Angry	17.	Pessimis <b>tic</b>	27.	Self-Conscious
8.	Uneasy	18.	Nervous	28.	Embarrassed
9.	Confident	19.	Wise	29.	Ashamed
10.	Satisfied	20.	Anxious	30.	Passive

~ `	<b>~</b>	•	
31.	Foo	11	sn

- 32. Pleasant
- 33. Sarcastic
- 34. Irritated
- 35. Tranquil
- 36. Disgusted
- 37. Up Tight
- 38. Frustrated
- 39. Apprehensive
- 40. Upset

- 41. Bothered
- 42. Resentful
- 43. Bitter
- 44. Furious
- 45. Mad
- 46. Worked Up
- 47. Edgy
- 48. Sad
- 49. Squeamish
- 50. Flustered

### APPENDIX D

This booklet is part of a survey-type research program. It's purpose is to find out more about the factors involved . in a testing situation similar to the one you have just participated in. You are asked to go through this booklet and complete each questionnaire as honestly as possible.

Each questionnaire has its <u>own set of instructions</u>. Read each set of instructions carefully before completing each questionnaire. Note that on one questionnaire you are to use the IBM answer sheet. There should be no need to ask questions and no questions will be answered. Turn to the next page, read the instructions and complete the questionnaires as indicated.

### DO NOT WRITE ON THIS PAPER

Record your answers on the IBM answer sheet 1 to 50.

### Inventory of Feelings

Intelligence testing produces various feelings in those being tested. This questionnaire does not have any right or wrong answers; you are asked only to report your own feelings as accurately as possible. Place a check mark after each adjective so as to describe how you feel at the present time. Below is a list of 50 adjectives. Rate each adjective

according to the following scale:

### BLACKEN IN SPACE NO.

# <u>1 for EXTREMELY</u> <u>2 for MODERATELY</u> <u>3 for SLIGHTLY</u>

### 4 for NOT AT ALL 5 for CANNOT SAY

Put your name on the answer sheet. Consider each adjective carefully. When you have decided on an answer based on the above scale of 1 to 5, blacken the corresponding space on the answer sheet with a No. 2 pencil. Remember, rate all 50 adjectives so as to describe how you feel <u>at the present\_time</u>.

Right now I feel:

1.	Tensa	11.	Calm	21.	Gloomy
2.	Irked	12.	Content	22.	Self-Satisfied
3.	Нарру	13.	Fearful	23.	Worried
4.	Annoyed	14.	Inadequate	24.	Hostile
5.	Relaxed	15.	Intellectual	25.	Aggressive
6.	Depressed	16.	Cheerful	26.	Suspicious
7.	Angry	17.	Pessimistic	27.	Self <b>-</b> Conscious
8.	Uneasy	18.	Nervous	28.	Embarrassed
9.	Confident	19.	Wise	29.	Ashamed
10.	Satisfied	20.	Anxious	30.	Passive

31.	Foo	1:	ish
•			

32. Pleasant

- 33. Sarcastic
- 34. Irritated
- 35. Tranquil
- 36. Disgusted
- 37. Up Tight
- 38. Frustrated
- 39. Apprehensive
- 40. Upset

41. Bothered 42. Resentful 43. Bitter Furious 44. 45. Mad 46. Worked Up 47. Edgy 48. Sad 49. Squeamish 50. Flustered Test of Insight and Social Sensitivity

Frequently we are asked to make judgments about certain aspects of our experiences. This test will show how accurate you are in evaluating various factors involved in the previous intelligence testing. This will give us an indication of the amount of insight you have about your own experiences. Place one check below each statement to describe your opinions.

1. I would have done better with a different examiner.

Strongly Agree	Slightly Disagree
Moderately Agree	Moderately Disagree
Slightly Agree	Strongly Disagree
Cannot	Say

2. The time limits were too short.

Strongly Agree	Slightly Disagree
Moderately Agree	Moderately Disagree
Slightly Agree	Strongly Disagree
Cannot	Say

3. The examiner is an intelligent person.

Strongly Agree	Slightly Disagree
Moderately Agree	Moderately Disagree
Slightly Agree	Strongly Disagree
Cannot	Say

4. I get upset easily while taking tests.

Strongly Agree		Slightly Disagree	
Moderately Agree		Moderately Disagree	
Slightly Agree		Strongly Disagree	
	Cannot	Say	

6. The examiner is competent professionally.

•	Strongly Agree		Slightly Disagree	
	Moderately Agree		Moderately Disagree	
	Slightly Agree		Strongly Disagree	
		Cannot	Say	

7.	I did not feel physically	"up to par" during the testing.
		Slightly Disagree
	Strongly Agree	-
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Canno	ot Say

g	The examiner's personality	interfered with my performance.
U .	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say

9.	I could have done better if different hour.	the test had been given at a
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderatuly Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say
10.	I did not do as well as the	other students in the group.
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say
11.	The examiner was to blame f	or some of the errors I made.
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say
12.	I cannot do my best on grou	up tests.
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say

13. I made several unnecessary blunders which I should not have made. Slightly Disagree Strongly Agree \_\_\_\_\_ Moderately Disagree \_\_\_\_\_ Moderately Agree Strongly Disagree Slightly Agree Cannot Say 14. The examiner has good emotional control. Slightly Disagree Strongly Agree \_\_\_\_\_ Moderately Disagree \_\_\_\_ Moderately Agree Strongly Disagree Slightly Agree Cannot Say \_\_\_\_\_ 15. My score on this intelligence test is a good estimate of my intelligence. Slightly Disagree Strongly Agree \_\_\_\_\_ Moderately Disagree \_\_\_\_\_ Moderately Agree Strongly Disagree Slightly Agree Cannot Say \_\_\_\_\_ 16. The examiner appears to be a dependable person. Slightly Dísagree Strongly Agree Moderately Disagree Moderately Agree \_\_\_\_\_ Strongly Disagree Slightly Agree Cannot Say \_\_\_\_\_

17.	I would have done better if present.	the examiner had not been
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagrae
	Slightly Agree	Strongly Disagree
	Cannot	Say
18.	Any errors made on the test	were my fault.
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say
19.	The examiner has a well-adj	usted personality.
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say
20.	I would have done much diff examiner.	erently with a different
	Strongly Agree	Slightly Disagree
	Moderately Agree	Moderately Disagree
	Slightly Agree	Strongly Disagree
	Cannot	Say

21. This 'intelligence test did not seem to be getting at what I think intelligence is all about.

Strongly Agree	Slightly Disagree
Moderately Agree	Moderately Disagree
Slightly Agree	Strongly Disagree
Cann	ot Say

22. This intelligence test had too few items to get an accurate measure of intellectual ability.

Strongly Agree	<del></del>	Slightly Disagree	
Moderately Agree		Moderately Disagree	
Slightly Agree		Strongly Disagree	
	Cannot	Say	

23. I must admit that the results of the intelligence test were not very different from what I had believed to be true of myself.

Strongly Agree	Slightly Disagree
Moderately Agree	Moderately Disagree
Slightly Agree	Strongly Disagree
Cannot	Say