EFFECT OF INTELLIGENCE DIFFERENCES ON SCORES

ON THE TAYLOR MANIFEST ANXIETY SCALE

By

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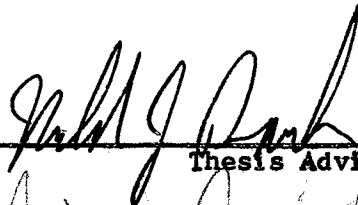
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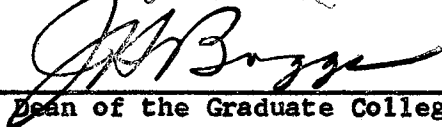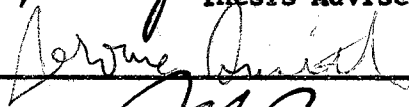for the degree of
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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

The Taylor Manifest Anxiety Scale (MAS) has been the subject of much discussion and research in psychology since its inception over a decade ago. The original MAS (Taylor, 1951) consisted of 65 items, selected from the Minnesota Multiphasic Personality Scale, which had been judged by clinicians to indicate behavior symptomatic of anxiety. Following several revisions, 50 of the original 65 anxiety items were retained to comprise the scale which is in common use today (Taylor, 1953). Presumably, the number of items which the individual checks as being characteristic of himself is an objective measure of his level of anxiety.

Originally, the MAS was developed to measure anxiety as a drive variable ($\underline{D}$) within the context of a Hullian-type system. Anxiety was assumed to be an index of $\underline{S}s'$ state of reactivity or excitability, which in turn reflects their general level of $\underline{D}$. Theoretically, $\underline{D}$ energizes, in a multiplicative fashion, all responses in the organism's response hierarchy. Thus in formal notation, $E = H \times D$ (where E=reaction potential, and H=habit strength). Using this model, certain predictions can be made regarding performance in relation to the type of learning problem. In situations where the correct response is dominant and relatively free from competing responses, high-$\underline{D}$ $\underline{S}s$ should exhibit superior performance in comparison with low-$\underline{D}$ $\underline{S}s$. The basic classical

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conditioning paradigm is an example of this type of learning problem.
However, in more complex situations, where several responses may com-
pete with each other, there is a greater probability of an incorrect
response being dominant. If an incorrect response is dominant over
the correct response then multiplication by a high $\underline{D}$, in contrast to a
low $\underline{D}$, will tend to increase the difference between the two $\underline{H}$'s and
therefore increase the probability of the incorrect response occurring.
Briefly then, high-anxious $\underline{Ss}$ should perform better on simple condi-
tioning tasks and low-anxious $\underline{Ss}$ initially better in more complex
learning tasks.

Several investigations have been performed to test the above hypo-
theses. For example, Spence and Taylor (1951), Taylor (1951), and
Spence and Farber (1954) all have found high-anxious $\underline{Ss}$ to be superior
over low-anxious $\underline{Ss}$ in eyelid conditioning. However, in studies in-
volving more complex tasks low-anxious $\underline{Ss}$ have usually performed better
than high-anxious $\underline{Ss}$. Such has been the case in studies by Farber and
Spence (1953) using a stylus maze, Montague (1953) with serial rote
learning, Raymond (1953) with paired-associates learning, and Taylor
and Spence (1952) using verbal maze learning.

On the other hand, there have been studies reported which do not
support the predictions. For example, Axelrod, Cowen, and Heilizer
(1956) attempted to replicate the stylus maze study by Farber and
Spence (1953), but found no significant difference between the perfor-
mance of high- and low-anxious $\underline{Ss}$.

Purpose of the Study

There has been some criticism of the MAS as a pure measure of

anxiety or D. The possibility has been raised that scores on the MAS may be influenced by factors other than, or in addition to, anxiety.

Some evidence, which is discussed in a following section, suggests that general intelligence may be a variable contributing to scores on the MAS. If low-anxious Ss are more intelligent than high-anxious Ss this could explain their superiority in mastering more complex learning tasks. The operation of an intelligence factor on MAS scores would raise some questions about the validity of those studies using the MAS as a measure of anxiety or drive without controlling for intelligence.

The purpose of this study was to explore, by the use of the statistical technique of item analysis, the extent to which intelligence affects scores on the MAS.

Review of the Literature

Some support for an intelligence-anxiety relationship was initially reported by Matarazzo, Ulett, Guze and Saslow (1954). They found a correlation of -.25 between the MAS and intelligence as measured by scores on the 1949 American Council on Education Psychological Examination for College Freshmen (ACE).

Similarly, Kerrick (1955) found significant negative correlations between MAS scores and six measures of intelligence. Especially noteworthy are the correlations of -.20 between the MAS and the Air Force Qualifications Test, and -.40 between the MAS and a word knowledge test. In addition, no evidence was found to suggest that anxiety affected learning or initial performance on a reading and comprehension test, but intelligence differences did appear to be a factor. Kerrick concludes by stating, "The data reported here indicate that it is

virtually impossible to select extreme subjects on the Taylor scale who are equated in intelligence. It is suggested that differences in learning which have been attributed to anxiety alone may well be merely the result of differences in ability or IQ, or may be the result of the interaction between IQ and anxiety". (1955, p. 77)

Grice (1955) found differences between high- and low-anxious Ss on a discrimination-reaction-time test. However, he also found that these differences could be explained by differences in intelligence as measured by the Air Force Clerical Aptitude Index (AFCAI). Further- more, these differences disappeared when the AFCAI was used as a pre- dictor in an analysis of covariance. In addition, a correlation of -.40 was found between the MAS and the AFCAI. Grice suggests three possible hypotheses to explain these anxiety-intelligence relation- ships: (1) more intelligent Ss were better able to make the more favorable responses to MAS items, (2) the psychosomatic symptoms which the test samples are more prevalent in low-intelligence Ss, or (3) the MAS actually measures only anxiety which in turn acts to depress scores on intelligence tests.

In a recent study Rankin (1965) compared high- and low-anxious Ss on several measures of mental ability. Generally, it was found high- anxious Ss scored significantly lower on these measures than did low- anxious Ss. This was especially true when a mental ability test of appropriate difficulty was used. For example, form V_3 of the Educa- tional Testing Service Reference Tests (ETS) (French, Ekstrom, & Price, 1963) produced more significant results than did the less difficult Form V_1. Rankin suggests that when dealing with the MAS and intelli- gence tests the difficulty level of the intelligence tests should be controlled.

CHAPTER II

METHOD

Subjects

The Ss were students enrolled in introductory psychology classes at Oklahoma State University. The total N was 1,683, with the item-analysis-sample containing 702 Ss and a validation sample of 981 Ss.

Procedure

Basically, the study involved two phases.

Phase I

Phase I involved only Ss in the item-analysis sample. All Ss initially were given the MAS and the Henmon-Nelson 1961 Tests of Mental Ability (HN) (Nelson, Lamke, & Kelso, 1961). The MAS was administered under the title of Biographical Inventory IV in an effort to mask the true nature of the instrument. In addition to the 50 items of the MAS, the Biographical Inventory also included items from the MMPI K and L scales. The item total was 88. The HN was used as the measure of intelligence since previous research had shown it to be of appropriate difficulty for Oklahoma State University students (Rankin, 1965).

Following the administration of the MAS and HN, the sample was randomly divided into two groups of 351 Ss each. Group A was used for the initial item analysis and Group B for cross-validation purposes.

As Anastasi (1961) points out, some items are likely to show validity for discrimination between criterion groups simply on the basis of chance. Cross-validating an item analysis increases the probability that such invalid items will be identified and thus eliminated from the item selection. In the present study the cross-validation was done to eliminate those items that appeared to show only chance differentiation between high- and low-intelligence $\underline{S}$s.

The Item Analysis

The item analysis consisted of identifying those MAS items that had differentiated between high- and low-intelligence $\underline{S}$s. In other words, the task was to find those items that were consistently answered differently by high- and low-intelligence $\underline{S}$s.

The first step was to select high- and low-intelligence $\underline{S}$s from Group A on the basis of their scores on the HN. The high-intelligence group included all $\underline{S}$s falling in the upper 27½ per cent of the distribution of HN scores. Subjects falling in the lower 27½ per cent of the distribution made up the low-intelligence group. Kelley (1939) has shown that the optimum balance between reliability and sensitivity in discriminating between the means of upper and lower groups is achieved if the groups are chosen on the basis of these percentages. There were 97 $\underline{S}$s in each group, making a total N of 194 for the initial item analysis.

The statistical procedure used in the analysis followed that proposed by Lawshe and Baker (1950), in which a significance test is made on the difference between two percentages. Basically, the statistic consists of a refinement of the usual procedure of comparing the dif-

ference between two percentages with the standard error of the differ-
ence (Ferguson, 1959, Pp. 147-148). The test is made on each item. In
the present study the test was made on the difference between the per-
centages of high- and low-intelligence Ss choosing the anxiety response
alternative for a given item. The significance test yields a critical
ratio which can be evaluated in terms of Student's t distribution. A
one-tailed t test was used with confidence level set at .05. A direc-
tional test was used since previous research has indicated that where
significant differences do occur low-intelligence Ss tend to make more
anxiety responses than do high-intelligence Ss.

Upon completion of the item analysis for Group A of the item-
analysis sample a cross-validation analysis was done on Group B. The
procedure was the same as for Group A.

An item was accepted as having differentiated between high- and
low-intelligence groups if it yielded a significant t ratio at the .05
level of confidence for both the original item analysis (Group A) and
the cross-validation analysis (Group B). These significant items were
then deleted from the scale to form a modified-MAS, which was utilized
in Phase II of the study.

Phase II

The second phase of the study was essentially an attempt to pro-
vide some evidence for the validity of the modified-MAS as an intelli-
gence-free scale. A new sample was used consisting of 981 introductory
psychology students at Oklahoma State University. There was no overlap
of Ss between the sample used in this phase of the study and the sample
used in Phase I of the study. In a classroom situation these Ss were

given the MAS and a vocabulary test consisting of either form V_1 or V_3 of the Educational Test Service Reference Tests (ETS) (French, Ekstrom, & Price, 1963). The use of two forms of the vocabulary test was necessary in order to obtain a large enough sample; these data were gathered as part of an overall research program and sufficient class-room time was not available for obtaining scores for all $\underline{S}$s on just one form of the vocabulary test. Since V_1 and V_3 are not of equal dif-ficulty raw scores were converted to T scores for comparison purposes. The use of these tests as an intelligence measure is supported by evi-dence reported by Rankin (1965), who found that, among Oklahoma State University students, low-anxious $\underline{S}$s scored significantly higher on V_1 and V_3 than did high-anxious $\underline{S}$s. These results paralleled those found by Rankin when comparing HN scores for the same low- and high-anxious $\underline{S}$s. Also it is a usual finding that vocabulary scores correlate very highly with scores on general intelligence tests.

As is conventional when dealing with the MAS, subjects were picked from the upper ten per cent and the lower twenty per cent of the dis-tribution of MAS scores; $\underline{t}$ tests were then run on the difference be-tween the mean vocabulary scores on these extreme groups. If the MAS actually does differentiate on the basis of intelligence as well as anxiety then significant differences would be expected between the mean vocabulary scores of these criterion groups.

The final step of Phase II was to rescore the MAS answers of the same $\underline{S}$s after having removed the discriminating items identified in the item analysis of Phase I. On the basis of these new MAS scores $\underline{S}$s were again selected from the upper ten per cent and lower twenty per cent of the MAS distribution, and $\underline{t}$ tests were again made on the difference

between the mean vocabulary scores. The purpose of the step was to determine if the modified-MAS actually is intelligence-free; that is, such a scale should no longer identify high- and low-anxious $\underline{S}$s who also differ significantly on vocabulary scores.

CHAPTER III

RESULTS AND DISCUSSION

Phase I

Inspection of the significance tests for the item analysis of

Phase I led to the selection of 13 items that appeared to have dis-

crimination power between intelligence groups at the .05 level of con-

fidence. The analysis was done using Ss selected first on the basis

of HN Total scores, and then again selected by HN Verbal scores.

Table I denotes the significant items and their t ratios. In each case

Ss in Group A were used for the initial item analysis and Ss in Group B

for the cross-validation item analysis. Interest was in those items

that attained significance for both Group A and Group B. Only those

items were selected as having discriminated between intelligence groups.

Eleven items showed significance using Total scores and two additional

items attained significance using Verbal scores. Six items were sig-

nificant for both Total and Verbal scores.

Table II presents the content of the significant items. The data

does not lend itself to a theoretical explanation as to why these par-

ticular items should be answered differently by high- and low-intelli-

gence Ss. The most prevalent theme in the item content seems to be

that of worry and/or anxiety over possible troubles, success or failure,

etc. Of course, any speculation is severly limited by the nature of

TABLE I

ITEMS ON THE MAS THAT DIFFERENTIATED BETWEEN HIGH- AND LOW-INTELLIGENCE GROUPS SELECTED BY HN SCORES

MAS Item	Ss Selected on Basis of HN Total t ratio Group A	Group B	MAS Item	Ss Selected on Basis of HN Verbal t ratio Group A	Group B
7	1.772	1.844	11	3.425	4.111
10	1.674	2.241	17	2.139	1.767
11	2.860	3.367	22	1.837	1.990
17	2.167	2.824	38	2.241	2.805
19	1.674	1.817	40	2.804	2.681
22	1.871	1.844	43	2.974	2.099
38	1.970	3.666	56	2.016	2.122
43	2.659	1.961	82	2.382	2.099
70	2.659	2.284			
78	1.674	1.746			
82	2.659	2.521			

1-tailed t values

$t_{(.05)}=1.645$ $t_{(.005)}=2.576$
$t_{(.025)}=1.960$ $t_{(.0005)}=3.291$
$t_{(.01)}=2.326$

TABLE II

CONTENT OF SIGNIFICANT ITEMS

Item No.	Item Content
7	I am easily embarrassed.
10	I frequently notice my hand shakes when I try to do something.
11	I have often felt that I faced so many difficulties I could not overcome them.
17	I often find myself worrying about something.
19	At times I think I am no good at all.
22	At times I have been worried beyond reason about something that did not really matter.
38	At times I lose sleep over worry.
40	Sometimes I become so excited that I find it hard to get to sleep.
43	I feel anxious about something or someone almost all of the time.
56	I have nightmares every few nights.
70	I do not often notice my heart pounding and I am seldom short of breath.
78	I wish I could be as happy as others.
82	I worry quite a bit over possible troubles.

the population used in the study. Future research might profitably explore the responses of different populations, which might in turn lead to fruitful hypotheses about item content.

Phase II

Table III presents the mean vocabulary score comparisons of groups selected on the basis of MAS scores before and after the significant items had been removed from the scoring. Again, the upper ten per cent and lower twenty per cent of the distribution of MAS scores constituted the high- and low-anxious groups respectively. The difference between the mean vocabulary scores of high- and low-MAS groups was statistically significant; but mean vocabulary score differences were not significant for the modified-MAS groups. The elimination of $\underline{S}$s who scored seven or above on the L scale, as well as the elimination of junior and senior students did not change the results. Therefore, these data are not presented in Table III or further discussed in the text.

These results suggest that high- and low-anxious $\underline{S}$s also differed in level of intelligence; but when the 13 significant items were removed from the MAS scoring to create the modified-MAS, intelligence differences between high- and low-anxious $\underline{S}$s appeared to be eliminated. Thus it is possible to build an anxiety scale which is relatively intelligence-free. However, it should be emphasized that this scale was built at Oklahoma State University, using only Oklahoma State University students. Any attempt to utilize the scale in a different population should be preceded by additional research, since these anxiety-intelligence relationships may not be valid for other populations. However, it is important to note that to date much of the research involving the

TABLE III

VOCABULARY SCORE (ETS) COMPARISONS FOR HIGH- AND LOW-MAS AND MODIFIED-MAS GROUPS

		High-A	Low-A	Diff.	t
MAS	$\overline{X}$	34.4694	38.4184	3.9490	3.3859*
	σ	9.9477	9.1566		
	n	98	196		
Modified MAS	$\overline{X}$	35.1327	36.5714	1.4387	1.2695
	σ	10.1703	8.6142		
	n	98	196		

* Significant at $p < .01$ (1-tailed t)

MAS has been done with university Ss, which may not constitute populations too different from the one used in the present study.

In order to provide some evidence concerning the reliability of the modified scale relative to the full scale, K-R formula 21 reliability coefficients were computed on a randomly selected sample of 100 males and 100 females. The K-R 21 for the MAS was .84 and for the modified-MAS it was .77. Thus some reliability was sacrificed by eliminating the 13 items, but the effect was not drastic.

Of course, the question now arises as to whether the modified-MAS is a useful measure of anxiety or drive. The answer can only come from studies comparable to those that have been done with the original MAS (e.g. eyelid studies, stylus maze studies, etc.). It is possible that the elimination of 13 items from the original MAS has invalidated the test as an anxiety scale.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of the study was to explore, by the use of the statistical technique of item analysis, the extent to which intelligence affects scores on the MAS.

The first phase of the study involved an item analysis of the MAS in an attempt to identify those items which had discriminated between high- and low-intelligence groups. Thirteen such items were isolated, which were then deleted from the scale to form a modified-MAS.

The second phase of the study involved an attempt to provide some evidence for the validity of the modified-MAS as an intelligence-free scale. Mean vocabulary scores were compared for a new sample of high- and low-anxious $\underline{S}s$, using the MAS to assess anxiety. Then new high- and low-anxious groups were obtained from the same sample on the basis of scores on the modified-MAS, and mean vocabulary scores were again compared.

Generally, it was found that low-anxious $\underline{S}s$ scored significantly higher on the vocabulary tests than did high-anxious $\underline{S}s$ when the groups were picked from scores on the original MAS. But, when $\underline{S}s$ were picked using the modified-MAS, vocabulary scores were not significantly different for high- and low-anxious $\underline{S}s$.

The results point to intelligence as being an important variable to consider when dealing with the MAS. This is especially true when

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the performance of high- and low-anxious $\underline{S}$s is compared on a complex

learning task. It seems reasonable that low-anxious $\underline{S}$s could exhibit

superior performance simply as a result of higher intelligence. This

is not to say that the MAS is measuring only an intelligence factor,

but in many cases it would seem wise to control for intelligence when

using the MAS in order to eliminate a confounding factor in the results.

Further, an alternative to controlling for intelligence is to generate

an intelligence-free anxiety scale. The present study has shown the

feasibility of constructing an intelligence-free scale from the origi-

nal MAS; the question remains as to whether this modified-MAS will be

useful as a measure of anxiety or drive. An intelligence-free anxiety

scale should prove extremely useful as a research tool, since it would

eliminate the necessity for controlling for intelligence. Such con-

trols are often difficult to fully implement.

Again, it is important to remember that in this study the popula-

tion consisted of university students, mostly freshmen and sophomores,

which undoubtedly is a very select group in relation to the general

population. What specific effect this has on the results cannot be de-

termined. However, it is probably safe to say that intelligence is

less variable within university $\underline{S}$s than it is within the general popu-

lation. It might even be expected, therefore, that it would be more

important to control for intelligence when using the MAS in the general

population. However, this is an empirical question which cannot be

answered here, but must await further research.

REFERENCES

Anastasi, Anne. Psychological Testing. New York: Macmillan, 1961.

Axelrod, H. S., Cowen, E. L., & Heilizer, F. The correlates of manifest anxiety in stylus maze performance. J. exp. Psychol., 1956, 51, 131-138.

Farber, I. E., & Spence, K. W. Complex learning and conditioning as a function of anxiety. J. exp. Psychol., 1953, 45, 120-125.

Ferguson, G. A. Statistical analysis in psychology and education. New York: McGraw-Hill, 1959.

French, J. W., Ekstrom, R. B., & Price, L. A. Manual for Kit of Reference Tests for Cognitive Factors. Princeton: Educational Testing Service, 1963.

Grice, R. G. Discrimination reaction time as a function of anxiety and intelligence. J. abnorm. soc. Psychol., 1955, 50, 71-74.

Kelley, T. L. The selection of upper and lower groups for the validation of test items. J. educ. Psychol., 1939, 30, 17-24.

Kerrick, J. S. Some correlates of the Taylor Manifest Anxiety Scale. J. abnorm. soc. Psychol., 1955, 50, 75-77.

Lawshe, C. H., & Baker, P. C. Three aids in the evaluation of the significance of the difference between percentages. Educ. psychol. Measmt, 1950, 10, 263-270.

Matarazzo, J. D., Ulett, G. A., Guze, S. B., & Saslow, G. The relationship between anxiety level and several measures of intelligence. J. consult. Psychol., 1954, 18, 201-205.

Montague, E. K. The role of anxiety in serial rote learning. J. exp. Psychol., 1953, 45, 91-95.

Nelson, M. G., Lamke, T. A., & Kelso, P. C. The Henmon-Nelson Tests of Mental Ability: Examiner's manual. Boston: Houghton-Mifflin, 1961.

Raymond, C. Anxiety and task as determiners of verbal performance. J. exp. Psychol., 1953, 46, 120-124.

Rankin, R. J. Intelligence-anxiety relationships as a function of intelligence test difficulty. Psychol. Rep., 1965, 16, 179-186.

Spence, K. W., & Farber, I. E. The relation of anxiety to differential eyelid conditioning. J. exp. Psychol., 1954, 47, 127-134.

Spence, K. W., & Taylor, Janet A. Anxiety and strength of the UCS as determiners of the amount of eyelid conditioning. J. exp. Psychol., 1951, 42, 183-188.

Taylor, Janet A. The relationship of anxiety to the conditioned eyelid response. J. exp. Psychol., 1951, 41, 81-92.

Taylor, Janet A. A personality test for manifest anxiety. J. abnorm. soc. Psychol., 1953, 48, 285-290.

Taylor, Janet A., & Spence, K. W. The relationship of anxiety to performance in serial learning. J. exp. Psychol., 1952, 44, 61-64.

APPENDIX A

BIOGRAPHICAL INVENTORY IV

Do not write or mark on this booklet in any way. Your answers to the statements in this inventory are to be recorded only on the separate Answer Sheet.

The Statements in this booklet represent experiences, ways of doing things, or beliefs or preferences that are true of some people but are not true of others. Read each statement and decide whether or not it is true with respect to yourself. If it is true or mostly true, blacken the answer space in column T on the Answer Sheet in the row numbered the same as the statement you are answering. If the statement is not usually true or is not true at all, blacken the space in column F in the numbered row. Answer the statements as carefully and honestly as you can. There are no correct or wrong answers. We are interested in the way you work and in the things you believe. Sometimes it may be difficult to make a decision, but please answer every item either true or false without skipping any.

REMEMBER: Mark the answer space in column T if the statement is true or mostly true; mark the answer space in column F if the statement is false or mostly false. Be sure the space you blacken is in the row numbered the same as the item you are answering. Mark each item as you come to it; be sure to mark one and only one answer space for each item. Here is an example:

	T	F
I would like to be an artist.	II	II

If you would like to be an artist, that is, if the statement is true as far as you are concerned, you would mark the answer space under T. If the statement if false, you would mark the space under F.

If you have any questions, please ask them now.

DO NOT MARK ON THIS BOOKLET

1. Once in a while I think of things too bad to talk about.

2. I find it hard to keep my mind on a task or job.

3. I blush as often as others.

4. I do not always tell the truth.

5. People often disappoint me.

6. I get angry sometimes.

7. I am easily embarrassed.

8. It makes me nervous to have to wait.

9. I sweat very easily even on cool days.

10. I frequently notice my hand shakes when I try to do something.

11. I have often felt that I faced so many difficulties I could not overcome them.

12. Sometimes when I am not feeling well I am cross.

13. I cannot keep my mind on one thing.

14. When in a group of people I have trouble thinking of the right things to talk about.

15. If I could get into a movie without paying and be sure I was not seen I would probably do it.

16. Often my bowels don't move for several days at a time.

17. I often find myself worrying about something.

18. I do not have as many fears as my friends.

19. At times I think I am no good at all.

20. I like to know some important people because it makes me feel important.

21. I do not tire quickly.

22. At times I have been worried beyond reason about something that really did not matter.

23. I do not like everyone I know.

24. I am more self-conscious than most people.

25. I am a very nervous person.

26. I am not afraid to handle money.

27. My family does not like the work I have chosen (or the work I intend to choose for my life work.)

28. I gossip a little at times.

29. Sometimes at elections I vote for men about whom I know very little.

30. I am the kind of person who takes things hard.

31. My feelings are hurt easier than most people.

32. I worry over money and business.

33. My parents and family find more fault with me than they should.

34. I often dream about things I don't like to tell other people.

35. I am liked by most people who know me.

36. I have reason for feeling jealous of one or more members of my family.

37. Once in a while I laugh at a dirty joke.

38. At times I lose sleep over worry.

39. At times I feel like swearing.

40. Sometimes I become so excited that I find it hard to get to sleep.

41. No one cares much what happens to you.

42. I do not read every editorial in the newspaper every day.

43. I feel anxious about something or someone almost all of the time.

44. Once in a while I put off until tomorrow what I ought to do today.

45. Most anytime I would rather sit and daydream than to do anything else.

46. Life is often a strain for me.

47. I have diarrhea ("the runs") once a month or more.

48. At times I am so restless that I cannot sit in a chair for very long.

49. My table manners are not quite as good at home as when I am out in company.

50. Criticism or scolding hurts me terribly.

51. I am often sick to my stomach.

52. I usually expect to succeed in things I do.

53. I am very confident of myself.

54. I cry easily.

55. I am often afraid that I am going to blush.

56. I have nightmares every few nights.

57. I don't like to face a difficulty or make an important decision.

58. I certainly feel useless at times.

59. It does not bother me particularly to see animals suffer.

60. I have a great deal of stomach trouble.

61. When embarrassed I often break out in a sweat which is very annoying.

62. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.

63. I have very few headaches.

64. I am happy most of the time.

65. My hands and feet are usually warm enough.

66. I would rather win than lose a game.

67. I am not at all confident of myself.

68. I feel hungry almost all the time.

69. I have very few quarrels with members of my family.

70. I do not often notice my heart pounding and I am seldom short of breath.

71. At times my thoughts have raced ahead faster than I could speak them.

72. I am usually calm and not easily upset.

73. I am about as nervous as other people.

74. I work under a great deal of strain.

75. Often I can't understand why I have been so cross and grouchy.

76. At times I feel that I am going to crack up.

77. At times I am all full of energy.

78. I wish I could be as happy as others.

79. I often think, "I wish I were a child again."

80. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.

81. I have been afraid of things or people that I knew could not hurt me.

82. I worry quite a bit over possible troubles.

83. I have had periods in which I carried on activities without knowing later what I had been doing.

84. I find it hard to set aside a task that I have undertaken, even for a short time.

85. My sleep is restless and disturbed.

86. I can easily make other people afraid of me, and sometimes do for the fun of it.

87. I practically never blush.

88. I am never happier than when alone.

APPENDIX B

ITEMS ON THE MAS THAT REACHED SIGNIFICANCE
FOR ONLY ONE OF THE ITEM ANALYSES

Original Item Analysis

Ss Selected on Basis of HN Total Scores		Ss Selected on Basis of HN Verbal Scores	
MAS Item	t ratio	MAS Item	t ratio
2	2.265	2	2.169
16	2.659	67	2.903
24	2.068	85	2.927
65	1.676		
67	2.758		
85	1.970		

Cross Validation Item Analysis

30	1.819	13	2.793
34	2.085	30	1.962
47	1.823	34	2.053
48	1.746	47	2.052
58	1.875	51	1.738
61	2.439	58	2.193
76	2.675	61	1.879
87	2.530	76	2.574

APPENDIX C

CONTENT OF MAS ITEMS REACHING SIGNIFICANCE
FOR ONLY ONE ITEM ANALYSIS

Item No.	Item Content
2	I find it hard to keep my mind on a task or job.
13	I cannot keep my mind on one thing.
16	Often by bowels don't move for several days at a time.
24	I am more self-conscious than most people.
30	I am the kind of person who takes things hard.
34	I often dream about things I don't like to tell other people.
47	I have diarrhea ("the runs") once a month or more.
48	At times I am so restless that I cannot sit in a chair for very long.
51	I am often sick to my stomach.
58	I certainly feel useless at times.
61	When embarrassed I often break out in a sweat which is very annoying.
65	My hands and feet are usually warm enough.
67	I am not at all confident of myself.
76	At times I feel that I am going to crack up.
85	My sleep is restless and disturbed.
87	I practically never blush.

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VITA

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