A FACTOR ANALYTIC STUDY OF THREE PERSONALITY MEASURES

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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

A variety of objective test instruments have been proposed to measure personality factors. One type of these objective instruments is the paper and pencil tests which are structured for administration to large groups during a single testing session. Tests of this nature are often constructed by their respective authors to measure psychological constructs which stem from a specific theory, methodology, or approach.

This study investigated three paper and pencil personality tests which are designed to measure components of anxiety and which are structured for large group testing. These measures included the Taylor Manifest Anxiety Scale (TMAS), the Cattell Common Annoyance Test (CA) and the Food Aversions List (FA) prepared by Wallen.

Purpose of the Study

The present research was initiated to quantitatively evaluate the factorial dimensions of the "discriminating" items contained in each of the three tests. The specific problem was to determine if these personality measures yield identifiable factors; that is, are distinctive aspects of personality being measured by the "discriminating" items of each test or is there an overlapping between discriminating items from different tests in measuring personality variables.

Review of Literature

Research performed using the Cattell Common Annoyance Test, the Wallen Food Aversions Test, and the Taylor Manifest Anxiety Scale is reviewed.

I. Common Annoyance Test (CA). Cattell has analyzed the neurotic process by means of a multivariate statistical approach. He identified anxiety (U. I. 24) as a main factor source determining variation in the neurotic process. U. I. 24 anxiety factor, "has a high and consistent association with clinically evaluated levels of anxiety. That is, it picks out persons of high anxiety who were so clinically evaluated" (Cattell, 1961, p. 97). "Susceptibility to annoyance" is one of several variables loading on the U. I. 24 anxiety factor and is designated U. I. 211. Susceptibility to annoyance is therefore conceived as a characteristic of anxiety which is considered by Cattell a factor determining the neurotic process.

As a result of the above mentioned findings and theorizing, Cattell and Sheier (1960) have constructed the Common Annoyance Test, a subtest of the U. I. 24 Adult Trait Objective Test Battery. The CA consists of a list of common irritations which are scored according to their degree of annoyance. The items operate to discriminate between subjects on a continuum of high-low susceptibility to annoyance. Research (Cattell and Sheier, 1957) indicates that the split half reliability of M. I. 211 is +.89. Statistical values (Cattell, 1961, p. 446) revealed the average correlation of the CA with U. I. 24 over six studies was +.36. The author states that an item analysis of this test should increase the construct validity appreciably.

The CA is a relatively new and little used test. According to its author, it is meaningful in measuring a characteristic of the general anxiety factor U. I. 24 which is a principal factor involved in the neurotic process.

II. The Food Aversions Test (FA). Wallen (1945), operating from a psychoanalytic frame of reference, introduced an item list of forty foods. He hypothesized on the basis of clinical experience that dislike for foods was related to neuroticism and that neurotic individuals should therefore exhibit more food dislikes than normals. He compared samples of neurotic and normal army recruits and found that neurotic recruits reported a significantly greater number of food aversions than did normal recruits. Gough (1946), Wallen (1948), and Altus (1949) reported essentially the same results using similar comparison groups. Wallen (1948) suggested that this list of foods could serve as a screening device for recruits to detect possibly maladjusted individuals.

Wallen, in his 1945 study, reported the reliability of the FA list for neurotics only, since his normal group gave too few dislikes to permit calculation of a reliability coefficient for them. The FA list, given orally, had a split half coefficient of +.74; the printed word list had an r of +.85. Altus (1949) used eight of the original twenty foods listed by Wallen and compared the number of food dislikes to a 36- point measure of adjustment. The Pearson r obtained between the food list and outside criterion was +.49. Altus indicates that a fair degree of validity could be shown for a list of foods which were properly "derived and standardized".

Smith, Powell, and Ross (1955, b) found that highly anxious individuals on the Taylor scale had a greater number of food aversions than low

anxious individuals. Smith considered this result not unusual since maladjusted individuals typically have a core of anxiety reactions. Martin (1959), using the Taylor scale, lists of food aversions and annoyances, identified one factor as a relatively independent anxiety factor. The other three factors identified were intelligence, motivation in psychological measurement, and paper and pencil test taking knowledge or attitudes.

Other studies, Blitzer, Rollins, and Blackwell (1961); Selling (1946); Smith, Powell, and Ross (1955, a); Sperling (1959), asserted a definite tendency for food aversions to be related to disturbances in affective behavior. Richmond, Eddy, and Green (1958) postulated, on the basis of clinical evidence, a definite relationship between the syndrome of rumination and earlier child-parent relationships. This supports the earlier theorizing of Wallen (1945) who proposed that aversion for foods developed from early painful childhood experiences in which the unpleasant stimuli became associated with the neutral stimulus, food.

In summary, the FA test is based on the belief that aversion of food is associated with maladjustment. However, very little empirical evidence is presented and much of the test's validity rests on clinical speculation and theorizing.

III. Taylor Manifest Anxiety Scale (TMAS). The Manifest Anxiety Scale was evolved by Taylor (1953) from items of the Minnesota Multiphasic Personality Inventory. Clinicians were asked to select items indicative of manifest anxiety from the Minnesota Multiphasic Personality Inventory. Sixty-five items were originally selected. The fifty most discriminating items of these sixty-five items were obtained, and twenty-eight of these fifty items were further revised for simplicity of sentence

structure and vocabulary. Thus, the total number of items in the final Taylor scale was fifty and it was proposed on the basis of clinical judgment that these items were symptomatic of manifest anxiety.

It was assumed that, within the context of Hullian theory, scores on the TMAS were objectively observable phenomena determining drive level (D). Therefore, using the TMAS as a measure of D, investigations were initiated to determine the relationship between intergroup variation in performance and scores on the Taylor scale.

Spence (1964) presented a review of studies involving performance in eyelid conditioning and drive level as indicated by the TMAS. In simple conditioning type experiments, the Iowa group (Taylor, 1951; Spence and Taylor, 1951; Spence and Farber, 1953; Spence and Beecroft, 1954; Spence and Weyant, 1960) reported that high anxious (HA) subjects made a significantly (.05 or greater) higher percentage of conditioned responses over the conditioning period than did low anxious (LA) subjects. This follows from the original formulations of Spence and Farber (1953) where it was indicated that in the simple conditioning paradigm a single dominant response tendency is present and that Ss with a high level of drive should perform in a superior manner to low drive level Ss. Baron and Connor (1960) found results in agreement with the Iowa studies. However, other investigators (Hilgard, Jones, and Kaplan, 1951; Prokasy and Truax, 1959; King, Kimble, Gorman, and King 1961) operating in a similar experimental framework, did not find significant differences between groups taken from the extremes of the anxiety scale. Spence (1964) attempted to criticize these investigations on the basis of methodological considerations. He suggested that divergent results might have occurred due to variations in the experimental situation, the type

of experimental subjects (naive vs. sophisticated) used, and/or the number of subjects used in the experiment.

Differential conditioning studies (Spence and Farber, 1953; Spence and Farber, 1954; Prokasy and Whaley, 1962; Runquist and Ross, 1959; Runquist and Spence, 1959) indicated that in the presence of a "ready signal" HA Ss exhibited superior performance when compared with LA Ss. The superiority of the HA groups was significant ($p. = .05$) in all cases except the Spence and Farber 1954 study ($p. = .09$). Prokasy and Whaley (1962) found differences between anxiety groups disappeared when a "ready signal" was not presented during the experimental procedure.

Drive level theory predicted superior performance for high D subjects on simple tasks. However, on complex tasks, Taylor (1956) predicted that HA Ss are inferior and that LA Ss are able to perform in a superior fashion. Results (Taylor and Spence, 1952; Montague, 1953; Ramond, 1953; Spence, Farber, and McFann, 1956; Spence, Taylor, and Ketchel, 1956; Korchin and Levin, 1957; Taylor and Rechtschaffen, 1959; Marks and Vestre, 1961; Reynolds, Blau, and Hurlburt, 1961; Standish and Champion, 1960) substantiated the above predictions with reference to the comparison of extreme anxiety groups on varying levels of task difficulty. Hughes, Sprague, and Bendig (1954) failed to find significant differences between anxiety groups on complex tasks when they replicated the Taylor and Spence 1952) study. Similarly, Brown (1960) failed to find predicted differences between anxiety groups (HA vs. LA) when level of task difficulty was varied. Farber and Spence (1953) found that LA Ss were significantly superior to HA Ss in their performance of a stylus maze. However, Axelrod, Cowen, and Heilizer (1956), failed to find significant differences between anxiety groups when they replicated the Farber and

Spence study.

Spence (1964) recognized that there may be a question raised as to whether the TMAS is measuring situational or chronic anxiety. There was a marked discrepancy between the results of eyelid conditioning studies performed by the Iowa group and the results of investigators outside this group. It is possible that the locus of variation does not reside in the variable, chronic anxiety, per se as purportedly measured by the TMAS, but in the anxiety aroused in different experimental environments. Wenar (1954) indicated that the experimental situation may be sufficient to elicit greater amounts of manifest anxiety. Mednick (1957) suggested that a HA score on the TMAS be regarded as an indicant of high susceptibility to a specific stress stimulus. It was also demonstrated that the naivity of Ss in the experimental situation may be a variable influencing the results of studies using the Taylor scale.

Recent researches relating the TMAS to measures of academic achievement and aptitude have been inconsistent in their findings. Alpert and Haber (1960) investigated the relationship between paper and pencil instruments used to measure individual differences in anxiety and academic achievement performance. No significant relationship was found between scores on the TMAS and measures of academic performance. Bendig (1957, a) reported similar results; i.e., a non-significant relationship between the TMAS and personal achievement. Similarly studies (Mayzner, Sersen, and Tresselt, 1955; Klugh and Bendig, 1955) have reported non-significant correlations between the TMAS and aptitude test performance on the ACE Psychological Test. Lamonica and Berkun (1959) failed to find a significant relationship between the TMAS and measures of verbal ability and arithmetic reasoning.

However, Speilberger (1958) has reported a low but significant negative correlation between the TMAS and aptitude test performance on the ACE Psychological test. Kerrick (1955) also found significant negative correlations between manifest anxiety and measures of general ability and intelligence. Speilberger and Katzenmeyer (1959) used ACE, TMAS, and grade-point averages (GPA). Significant negative correlations were found between the TMAS, ACE, and GPA. Using the ACE as a measure of intelligence, the sample was divided into low, average and high intelligence groups. Analysis revealed that GPA was unrelated to TMAS scores for the extreme intelligence groups. However, "grades varied inversely with anxiety level for the average aptitude subjects." Grice (1955) found low anxious Ss superior in a reaction time task. Further analysis revealed this superiority could be attributed to intellectual differences rather than to differences in levels of anxiety.

Clinical studies designed to test the validity of the Taylor scale have proved equivocal. Grosz and Levitt (1959) correlated scores on the TMAS with a measure of hypnotically induced anxiety. The results suggested the scale is an adequate measure of clinical anxiety. Moss and Waters (1960), and Kausler, Trapp, and Brewer (1959) indicated further support for the scale's validity as a measure of clinical anxiety. Lebo, Toal, and Brick (1958) interpreted their results as supporting the Taylor scale as a measure of manifest anxiety. However, Foger and Knopf (1958), using psychiatric patients as Ss, failed to find a significant relationship between the TMAS and stimulus generalization; and interpreted this finding as revealing the inability of the scale to serve as a useful measure of anxiety levels in psychiatric patients. Lauterbach (1958) failed to find any relationship between psychiatric criteria of anxiety and the TMAS.

When skin conductance was used as a physiological index and related to the TMAS (Raphelson, 1957; Silverman, 1957), no significant relationship was evidenced.

O'Connor, Lorr and Stafford (1956) extracted five factors when they used 42 items from the TMAS. Bendig (1958) identified Factor A from the above study as similar to Eyesenck's "neuroticism" factor. Factor D from the same study appeared in Bendig's analysis to be a combination of Eyesenck's "neuroticism" and "introversion" factors. Martin (1960) used the TMAS, a list of food dislikes similar to Wallens' (1945), a list of annoyances devised by Bennett (1945) and ten other measures which previous research indicated were related to anxiety. A Rao (1955) canonical factor analysis was performed on a 37 x 37 correlational matrix. Eleven orthogonal factors were extracted. Three factors were given serious consideration; an anxiety factor, a motivational factor and an intelligence factor. Since orthogonality is present, it was suggested by Martin that motivation and intelligence can be excluded as explanations of the anxiety dimension. This study used an insufficient N of ninety-eight Ss, all female. The matrix which was factor analyzed did not include the list of food items which Martin originally had designed his study to include.

In summary, although the Taylor Anxiety Scale has been involved in much research, the exact properties of the scale and its relationship to other personality variables is still undetermined.

CHAPTER II

PROCEDURE

The experimental procedure is classified under three phases of operation. "Phase I" involved the obtaining of responses from a sample of college students on items of the Common Annoyances Test, the Food Aversions Test, and the Manifest Anxiety Scale. Items were analyzed and selected for use in "Phase II." Phase II consisted of the formation of a research test composed of discriminating items from the above mentioned tests and the administration of this research test to a large population sample. The final phase, "Phase III," was a multivariate factor analysis of the research test.

Subjects: Subjects used for Phase I and Phase II were students drawn from Introductory Psychology classes at Oklahoma State University. Phase I had an N of 83 and Phase II had an N of 319. Sex distribution was approximately equal.

Phase I

The Cattell Common Annoyances Test (CA), the Wallen Food Aversions List (FA), and the Taylor Manifest Anxiety Scale (TMAS) were administered in their original form to two introductory psychology classes (N = 83) at Oklahoma State University. The CA consisted of 62 items: The FA, 20 items, and the TMAS, 50 items.

Two introductory psychology classes were tested. The testing of each

class required two fifty-minute periods. Subjects were not tested on all three inventories the same day. The first testing period in which the CA and the FA were given required one half-hour. The length of time required to complete the CA form averaged 15 minutes, that for the FA test approximately 7 minutes. Subjects were given sufficient time to complete responses for all items on both tests. The TMAS was administered during the second testing period within seven days after the initial period of testing. There was no time limit for the completion of this form.

Instructions were identical for the two classes and were given orally. Subjects were informed that the tests were not intended to diagnose them but were for research purposes only. The specific instructions used for all three tests are found in Appendix A. When the subjects appeared to have completed the tests, the question was asked, "Is everyone finished?" If anyone had not finished the test, time was extended for completion of the remaining items.

The subjects were ranked in order of their scores for each test. There were three separate rankings for each subject corresponding to the three scales. The top 27 per cent of the scores and the lower 27 per cent were selected out for each test separately.

Individual item scores were calculated based on the responses of those subjects found in upper and lower 27 per cent on each scale. Items responded to 90 per cent of the time or more and items responded to 10 per cent of the time or less were excluded as non-discriminating items. To obtain valid estimates of significant discriminative items, the "significance of difference between two independent proportions" was calculated for each remaining item according to the formula supplied by

Ferguson (1959). In this procedure, the observed difference between two proportions is divided by the estimate of the standard error of the difference between two proportions based on independent samples. The Z value found from this formula is interpreted as a deviate of the unit normal curve.

Phase II

A new form entitled "Research Test A" was constructed. This test consisted of the discriminating items found on the CA, FA and TMAS forms. Research Test A had three primary divisions or parts. The first part utilized 18 discriminating items selected at random from among 46 discriminating items of the TMAS. Previous research (Rankin, 1963) indicated that the TMAS had 46 discriminating items. The second part of the research test consisted of 21 items of the CA's 64 items which discriminated between high and low criterion groups, (Items No. 19-39). The third part consisted of items from the FA test. There were eight discriminating items, (Items No. 40-47).

Instructions for the research test were slightly modified versions of the original test instructions. An answer sheet was constructed to yield dichotomous responses (T-F; Yes-No) for all 47 items of Research Test A. The research test and answer sheet are found in Appendix C.

The research test was administered to 319 Introductory Psychology students. No time limit was used for the completion of this test. The test instructions consisted of two parts: (1) general instructions read aloud to all subjects (Appendix B) and (2) written instructions for each part of the test, found on each test booklet distributed (Appendix C). Subjects were instructed to read the written instructions before beginning

each new part of the test. Subjects were also required to remain seated until everyone had completed their tests. When the experimenter had received indication that all test forms were finished, the booklets were collected.

Items were scored on the basis of 0-1 responses. Coefficients of correlations were calculated among the three sections of the research test. Kuder-Richardson formula #21 was computed for each subtest as a measure of internal consistency.

Phase III

Each subject's set of responses to the 47 items of Research Test A were recorded on I.B.M. punch cards. An I.B.M. computer No. 650 was programmed for the Beaton Correlation Routine to obtain phi coefficients among the 47 items. A 47 x 47 correlation matrix was obtained. This matrix was then factored using a Centroid Factor Program.

The last procedure consisted of a Varimax Rotation following Cooley and Lohnes, (1962) for orthogonal rotation of the original factor matrix. Statements were adopted for the I.B.M. No. 1410 on which the varimax rotation was performed. A variance matrix was constructed on the basis of the resulting factor matrix. Significant factors were interpreted in terms of their psychological implications.

CHAPTER III

RESULTS

Kuder-Richardson formula #21 was computed for each of the three subtests of the research test form. Table 1 presents the mean number of significant responses ($\bar{X}_{sub.t.}$), the appropriate variance (V) estimates, and the KR_{21} correlation coefficients (r_{tt}), for each subtest of Research Test A.

TABLE I

INTERNAL CONSISTENCY ESTIMATES (r_{tt}) FOR THE THREE SUBTESTS OF RESEARCH TEST A

Subtests		$\bar{X}_{sub.t.}$	V	r_{tt}
TMAS	(Items 1-18)	5.18	8.98	.62
CA	(Items 19-39)	8.98	10.28	.52
FA	(Items 40-47)	5.84	3.04	.55

The relationships among the three subtests were determined. The product moment correlation coefficients among the subtest are presented in Table 2. Two significant correlation coefficients were obtained. The correlation between the TMAS and the FA subtests was significant ($\alpha = .05$). The TMAS subtest showed a very significant relationship with the CA subtests ($\alpha > .01$).

TABLE II

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS FOR THE THREE SUBTESTS OF RESEARCH TEST A

	TMAS	CA	FA
CA	r = +.27		
FA	r = -.11	r = -.09	

The elements of the correlation matrix are found in Appendix D and present the Phi coefficients for each item with every other item. The item content of the numbered elements of the correlation matrix is found in the "Item Identification Index" of Appendix E. The 47 x 47 variable matrix of intercorrelations yielded eleven centroid factors after the Thurstone complete centroid method of factor analysis was applied (Appendix F). The 11 x 47 factor matrix was orthogonally rotated to simple structure and positive manifold. From the resultant factor matrix (Appendix G), it was ascertained that, of the eleven rotated factors, Factor I accounted for 9.98% of the total variance: Factor II, 10.41%; Factor III, 11.21%; Factor IV, 9.49%; Factor V, 7.05%; Factor VI, 13.06%; Factor VII, 6.12%; Factor VIII, 9.92%; Factor IX, 8.60%; Factor X, 6.41%; and Factor XI, 7.68%.

The first reference vector obtained loadings from five items of the TMAS subtest. Factor I accounted for 22% of the variance in item three, 25% in item five and 32% in item nine. Substantial factor loadings (+.34, +.34) also occurred for items sixteen and eighteen. The principal loadings were: (1) my feelings are hurt easier than most, (2) I am usually not calm and am easily upset, and (3) I am more self

conscious than most people. Factor II had substantial loadings from four items of the CA. Two of these items correlated quite well with the factor (-.56; -.62). The items were: (1) keys that don't work, and (2) electric appliances that go out of order. The third reference vector accounted for the second largest percentage of the total variance found among all eleven factors. Here, as in Factor II, large factor loadings (-.72, -.65, -.37) occurred on three items of the CA. These items were: (1) lurid and sexy covers on pocket books, (2) dirty or obscene jokes, and (3) the emphasis given sex crimes.

Food items accounted for the principal variance components in Vectors IV and IX. Large positive factor loadings (+.39 to +.47) are found in Factor IV whereas food items correlated negatively (-.47, -.49, -.50) with Factor IX. Food items loadings on Factor IV are bean soup, salmon, lima beans, and cabbage. The items of the latter vector include swiss cheese, mushrooms, and cottage cheese.

Factor V had substantial loadings on items ten, seventeen, twenty-four and thirty-nine. Items from the TMAS subtest and the CA subtest entered into the loadings. These are: (1) life is often a strain for me (+.42), (2) being annoyed by people who do all the talking in conversations (+.28), (3) annoyed by being asked to repeat something just said (+.33), and (4) I am not happy most of the time (+.27).

Factor VI ranked first among the eleven factors in accounting for the greatest percentage of the total variance. This factor accounts primarily for the variance of three items. The items appear, in strength of relationship to the factor, as follows: (1) I worry quite a bit over possible troubles (+.60), (2) at times, I lose sleep over worry (+.51), and (3) sometimes, I get excited and am unable to get to sleep (+.49).

Three other items from the Taylor subtest had lower but substantial loadings. These were: (1) I feel anxious all the time (+.44), (2) I am the kind of person who takes it hard (+.35), and (3) life is often a strain for me (+.37).

Factor VII accounted for the least percentage of the total variance of the eleven factors. Three items loaded substantially (-.37, -.32, -.35) but not to the degree witnessed in previous loadings of other factors. A fairly substantial loading (+.26) occurred for the food item "Swiss cheese". The three principal variance elements were: (1) My hands and feet are not usually warm enough, (2) Often my bowels do not move for several days, and (3) I have been afraid of people I knew couldn't hurt me.

Factor VIII contained extremely heavy loadings for two items of the TMAS subtest: (1) I have a great deal of stomach trouble (+.65), and (2) I am often sick to my stomach (+.73).

Factor X obtained substantial loadings on three items of the CA subtest. Items observed were: (1) Annoyed by stopping for red lights while driving (-.35), (2) annoyed by jokes being told that you have heard before (-.35), and (3) annoyed by taking medicine (-.34).

Factor XI received heavy loading from four items of the CA subtest. Items observed were: (1) annoyed by pencil points that aren't sharp (-.50), (2) annoyed by being interrupted in the middle of work (-.33), (3) annoyed by drafty rooms (-.31), and (4) annoyed by water fountains where the water doesn't spurt up high enough (-.31).

CHAPTER IV

DISCUSSION

Reliability

The K-R 21 reliability coefficients indicated moderate internal consistency for the three subtests of Research Test A. The formula used to compute these estimates is known to be a conservative one, probably underestimating the reliability of each subtest.

The K-R 21 value computed for the CA subtest was +.53. The Spearman-Brown formula was used to estimate the full scale reliability of the CA subtest which had employed 21 of the original 62 items of Cattell's test. The reliability coefficient obtained was approximately +.77. The split-half reliability for the CA (M.I. 211) reported by Cattell and Scheier (1957) was +.89. This latter estimate of internal consistency does appear slightly exaggerated when compared to the more modest estimate obtained in this investigation. However the full scale reliability estimate of the CA is probably underestimated since the Spearman-Brown formula utilized the K-R 21 coefficient as an estimate of the reliability of the CA subtest.

The internal consistency estimate obtained for the FA subtest (+.55) approximates in size the K-R 21 reliability coefficient of the CA subtest. This tends to indicate that, with regard to the homogeneity-heterogeneity of the significant items in each subtest, both the CA and FA subtest are at the same relative stage of development. The

internal consistency value found for the TMAS subtest appears slightly higher (+.62) than the two previously mentioned measures. This finding would appear consonant with the rationale used by Taylor (1953) in constructing her test; i.e., construction of a test composed of items which measure a single construct "D." The Spearman-Brown formula was used to estimate the full scale reliability for the TMAS subtest of 18 items. The Spearman-Brown formula yielded a reliability coefficient of +.81. Bendig (1957, b), using a sample of college students, obtained a K-R 20 correlation coefficient of +.78 for the original Taylor scale.

The values supplied by K-R 21 do not offer a validity estimate of these three subtests. The K-R 21 estimates do indicate however that homogeneity of test items cannot be assumed for each of the subtests.

Pearson product moment correlation coefficients were determined to provide an index of relationship among the three subtests. The CA subtest and the FA subtest exhibited a non-significant relationship. It may be concluded with some caution that the variables each subtest is measuring are distinct. Evidence from the analysis of the factor matrix seems to support this contention since significant loadings from both CA and FA items failed to occur on any single factor. The TMAS and the FA subtests showed a slight but significant negative relationship. This suggests there may be one or more variables operating between the measures. Factor VII of the factor matrix does indicate substantial negative loadings for three items of the TMAS subtest and a significant positive loading for an item of the FA subtest. Therefore both the TMAS and FA contribute to the variance of factor VII. The TMAS and CA subtests showed a very significant positive relationship. The implication that arises is that items from both tests may be measuring a similar dimension.

Factor V received four substantial positive loadings. These loadings consisted of two items of the TMAS and two of the CA.

TABLE III

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS AMONG THE THREE SUBTESTS CORRECTED FOR ATTENUATION

	TMAS	CA	FA
CA	+.47		
FA	-.19	-.17	

The correlations among the three subtests, corrected for attenuation are presented in Table III. This was done to estimate what the correlation coefficients would be if the subtests were perfectly reliable. Since conservative internal consistency estimates were used, the corrected correlations found in Table III are overestimated.

Factorial Evaluation

Eleven independent factors were obtained from the 47 items of the combined subtests. Analysis of the Variance matrix (appendix G) suggests that there is no general factor which is involved in the variance of all three subtests. Each subtest may be considered multidimensional; measuring more than a single factor. Thus, in relation to the original problem of Chapter I, it may be concluded that there is no general factor for items from the CA, FA, and TMAS subtests. It also seems evident that each subtest is not unidimensional.

Each subtest had two or more unique factors; i.e., a factor which is involved in the variance of only one of the three subtests. The TMAS yielded three unique factors (I, VI, VIII); the CA had four unique

factors (II, III, X, XI), and the FA had two unique factors (IV, IX). Two vectors were present which are labeled "common" factors; i.e., a factor which is involved in the variance of two subtests but not in all three subtests. Factor V is labeled a common factor since it involved substantial item variances of both the CA and TMAS subtests. Factor VII was also a common factor. This factor had substantial negative loadings of TMAS items and a substantial positive loading of an FA item.

All three major loadings on Factor I appeared as Factor A loadings in the O'Connor, Lorr, and Stafford (1959) study. It is suggestive to recall that Bendig (1957, a) referred to Factor A of the above mentioned study as similar to Eyesenck's "neuroticism" factor. Further reference to the O'Connor, Lorr, and Stafford (1959) study indicates that Factor VI appears somewhat of a composite of their Factors A, C. However, meaningful comparisons must be approached with some caution. The oblique methods used to rotate factors in the 1959 study stands in contrast to the orthogonal method employed here.

It is recommended that future research be directed toward cross validation of the factors found in this study. The stability of these factors should be examined culturally across different sections of the country with different population samples. Future research might well stress an analysis of the factor patterns produced by "abnormal" groups; i.e., psychiatric and mentally retarded groups. The examination of factor patterns of statistically and socially divergent groups should eventually aid in more rapid and economical diagnostic discriminations among groups.

CHAPTER V

SUMMARY AND CONCLUSION

The original CA, FA, and TMAS Scales were administered to introductory psychology students at Oklahoma State University. Forty-seven discriminating items were selected from these inventories and incorporated into a single test designated as Research Test A. The purpose of the study was to determine if the discriminating items of the CA, FA, and TMAS tests measure identifiable factors.

The general approach involved the administration of Research Test A, consisting of 47 items, to 319 introductory psychology students at Oklahoma State University. A matrix of item intercorrelations was obtained for all 47 items of the research test. A factor matrix was evolved from the matrix of intercorrelations and the factors were analyzed.

The results obtained were as follows:

1) Moderate internal consistency estimates were found for the CA, FA, and TMAS subtests of Research Test A.

2) There was a very significant positive relationship found between the TMAS and CA subtests. There was also a significant negative relationship found between the TMAS and FA subtests.

3) Eleven independent factors were obtained from the original intercorrelational matrix of 47 items of the CA, FA, and TMAS scales.

4) The factor which accounted for the largest per cent of the variance was Factor VI. This factor had substantial loadings of items

of the TMAS subtest.

5) Items of the TMAS subtest had substantial loadings on 3 factors. Items of the CA subtest accounted for the principal variance of 4 factors. Two factors had substantial item loadings from two of the three subtests.

6) No single factor obtained item variances from all three subtests.

7) Each subtest yielded more than one unique factor.

It was concluded on the basis of the results:

1) There is no general factor present which is involved in the variance of all three subtests.

2) There is no single independent factor capable of accounting for the variance of any one subtest. The subtests are not unidimensional.

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APPENDIX A

INSTRUCTIONS FOR THREE TESTS (PHASE I)

Taylor Manifest Anxiety Scale

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 as 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 make one and only one answer space for each item. Here is an example:

I would like to be an artist.	T	F

If you have any questions, please ask them now.

Common Annoyances Test

What to do: Everyone knows that some things irritate him more than others. Below is a list of annoying things. Mark for each item a check in one of the three columns to show whether you would find it very annoying, somewhat annoying, or not annoying. Don't skip any things listed. You don't have to spend a lot of time thinking about each thing. Once you've read and understood it - your first impression is usually the truest and the best for you.

Food Aversions Test

We are interested in the food likes and dislikes of the college population. Information such as this will be useful in many ways. At this time, we are finding out if we have the right foods on our list. On the bottom of this page please list any other food you dislike to the point of refusing to eat it.

Please mark "X" after each food that you dislike to the point of refusing to eat it.

APPENDIX B

GENERAL INSTRUCTIONS (PHASE II)

The test you have been given is divided into three parts. You are to read and follow the directions carefully for each part. An answer sheet is provided for your convenience. (Place the answer sheet in front of you.) You will notice the answer sheet is divided into three parts. Each part corresponds in number to a section on the test. Simply follow the numbered order of the items on the test booklet and you will have no difficulty. Once again, make sure to read carefully the instructions for each part of the test. If you are confused on some point, feel free to question the examiner.

NOTE: The test you have been given is not designed to measure you personally. Its purpose is for research analysis of the tests. Please answer all items.

Now before you begin the test, take the answer sheet and fill in your name, section, sex (M or F), age, today's date, major (academic), and your living group (Independ. or Greek). After you finish this, look at the board.

Here you see an example of how the answer sheets are to be marked. You will look at your item, (in this case the item is numbered one) and then find the corresponding item number on the answer sheet - then proceed to blacken the column most appropriate.

	T	F
1. I want to be an artist.	II	■

APPENDIX C

"RESEARCH TEST A"

SECTION I:

The following statements 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. Please answer every item either true or false without skipping any.

If you have any questions, please ask them now.

DO NOT MARK THIS BOOKLET

1. My hands and feet are usually warm enough.
2. I feel anxious about something or someone almost all the time.
3. I am more self-conscious than most people.
4. I feel hungry almost all the time.
5. I am usually calm and not easily upset.
6. I have nightmares every few nights.
7. I have been afraid of things or people that I knew could not hurt me.

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

9. My feelings are hurt easier than most people.

10. I am happy most of the time.

11. I have a great deal of stomach trouble.

12. At times I lose sleep over worry.

13. I worry quite a bit over possible troubles.

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

15. I am often sick to my stomach.

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

17. Life is often a strain for me.

18. I practically never blush.

SECTION II:

What to do: Everyone knows that some things irritate him more than others. Below is a list of common happenings. Mark for each item in one of the two columns on the answer sheet to show whether you would find it annoying or not annoying. Don't skip any things listed. You don't have to spend a lot of time thinking about each thing. Once you've read and understood it - your first impression is usually the truest and best for you.

19. People who spend more money than they can afford to.

20. People who get very emotional in discussions.

21. Electric appliances that go out of order.

22. People who snore.

23. People who honk car horns to call somebody.

24. People who do all the talking in conversations.

25. Keys that don't work.

26. Library books which have been damaged or from which a page has been torn.

27. Being interrupted in the middle of some work.

28. Lurid and "sexy" covers on pocket books sold in drug stores.

29. Coffee or cocoa spilled from the cup into the saucer.

30. Water fountains where the water doesn't spurt up high enough.

31. Stopping for red lights or stop signs while driving.

32. Highly seasoned or "hot" foods.

33. Jokes that you have heard before.

34. "Dirty" or obscene jokes.

35. The emphasis given sex crimes in popular newspapers.

36. Taking medicine.

37. Pencil points that aren't sharp enough.

38. "Drafty rooms."

39. Being asked to repeat something you just said.

SECTION III:

This section consists of food items. We are interested in the food likes and dislikes of the college population. Darken the area under "yes" on the answer sheet if you like the food to the extent you will not refuse to eat it. If you dislike the food to the point of refusing to eat it, darken the area under "no", thus indicating your dislike of that particular food. Make sure to respond to each food item.

40. bean soup
41. salmon
42. Swiss cheese
43. veal chops
44. lima beans
45. cabbage
46. mushrooms
47. cottage cheese

ANSWER SHEET

Name_____ Sex_____ M F (circle one)

Section_____ Major_____

Date_____ Age_____

Living Group: (1) Independent
(Check one) (2) Greek

PART I

"True" and "False" Section

	T	F
1.	II	II
2.	II	II
3.	II	II
4.	II	II
5.	II	II
6.	II	II
7.	II	II
8.	II	II
9.	II	II
10.	II	II
11.	II	II
12.	II	II
13.	II	II
14.	II	II
15.	II	II
16.	II	II
17.	II	II
18.	II	II

PART II

	Annoying	Not Annoying
19.	II	II
20.	II	II
21.	II	II
22.	II	II
23.	II	II
24.	II	II
25.	II	II
26.	II	II
27.	II	II
28.	II	II
29.	II	II
30.	II	II
31.	II	II
32.	II	II
33.	II	II
34.	II	II
35.	II	II
36.	II	II
37.	II	II
38.	II	II
39.	II	II

PART III

	Yes	No
40.	II	II
41.	II	II
42.	II	II
43.	II	II
44.	II	II
45.	II	II
46.	II	II
47.	II	II

APPENDIX D

47 x 47 INTERCORRELATION MATRIX

Item No.	1	2	3	4	5	6	7	8	9	10
1	+1.00	+.14*	+.13*	+.16**	+.18**	+.01	+.15**	+.11	+.07	+.13*
2		+1.00	+.19**	+.04	+.19**	-.02	+.09	-.00	+.09	+.14*
3			+1.00	+.06	+.19**	+.03	+.12*	+.01	+.29**	+.11
4				+1.00	+.03	-.03	+.04	+.06	+.03	+.00
5					+1.00	-.04	+.13*	+.05	+.33**	+.17**
6						+1.00	+.02	+.09	+.05	+.07
7							+1.00	+.08	+.03	+.09
8								+1.00	+.05	+.00
9									+1.00	+.16**
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Appendix D (continued)

Item No.	11	12	13	14	15	16	17	18	19	20
1	+.12*	-.00	+.13*	+.07	+.09	+.06	+.08	+.01	+.06	+.00
2	+.11	+.12*	+.40**	+.16**	+.18**	+.22**	+.31**	+.02	+.13*	-.02
3	+.14*	-.00	+.14*	-.04	+.15**	+.17**	+.23**	+.18**	+.01	+.00
4	+.02	-.02	+.09	+.08	+.04	+.00	+.20**	-.04	+.04	-.02
5	+.08	+.12*	+.20**	+.08	+.14*	+.28**	+.17**	+.19**	+.05	-.07
6	+.06	+.09	+.00	+.10	+.04	-.05	+.06	-.00	-.01	-.09
7	+.02	+.06	+.14*	+.12*	+.09	+.06	+.10	+.09	+.07	-.02
8	-.04	-.02	-.05	+.02	-.06	-.03	-.01	-.01	-.04	-.05
9	-.00	+.06	+.11	+.04	+.03	+.31**	+.18**	+.17**	+.00	-.03
10	+.15**	+.11	+.18**	-.04	+.14*	+.11	+.27**	-.04	+.05	-.01
11	+1.00	+.08	+.17**	+.00	+.53**	+.11	+.07	-.02	+.07	-.02
12		+1.00	+.34**	+.33**	+.06	+.14*	+.19**	+.02	+.13*	-.07
13			+1.00	+.21**	+.15**	+.30**	-.32**	-.02	+.13*	-.01
14				+1.00	-.01	+.09	+.13*	+.04	+.04	-.09
15					+1.00	+.10	+.07	+.09	+.10	+.06
16						+1.00	+.17**	+.05	+.13*	-.05
17							+1.00	+.01	+.13*	+.00
18								+1.00	-.01	-.01
19									+1.00	-.01
20										+1.00
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Appendix D (continued)

Item No.	21	22	23	24	25	26	27	28	29	30
1	+.11	-.00	+.02	+.02	+.06	+.02	+.02	+.15**	+.07	+.05
2	+.01	+.00	-.06	+.01	+.02	+.05	+.09	+.06	+.12*	+.20**
3	-.01	+.02	+.02	+.00	+.04	+.01	+.08	+.00	+.03	+.11
4	+.06	+.02	-.12*	+.08	+.07	-.07	+.05	-.04	+.02	+.12*
5	+.09	+.06	+.02	+.10	+.03	+.03	-.01	+.06	+.04	+.08
6	-.01	+.06	-.06	-.04	-.02	+.05	-.07	-.01	+.01	+.00
7	+.05	-.06	-.05	+.09	+.04	+.08	+.04	+.06	+.13*	+.00
8	-.03	-.05	+.11	+.05	+.01	+.00	-.07	-.00	-.00	-.00
9	+.04	+.00	+.01	+.00	+.00	-.01	+.07	+.07	+.01	+.07
10	+.02	+.00	+.05	+.13*	+.04	-.05	+.10	+.03	+.10	+.01
11	+.02	+.07	+.00	+.09	+.02	+.07	-.05	-.04	+.04	+.08
12	+.08	+.04	+.01	+.05	+.06	+.05	+.00	+.03	-.00	+.08
13	+.06	+.07	-.12*	+.05	+.03	+.01	+.10	+.05	+.03	+.10
14	+.17**	+.06	-.02	-.07	+.03	-.01	+.10	+.01	+.00	-.00
15	+.06	+.09	+.01	+.08	+.09	-.02	-.11	-.03	+.13*	+.17**
16	+.08	+.01	-.03	+.01	+.04	+.09	+.05	+.07	+.03	+.08
17	+.06	+.05	+.01	+.07	+.03	+.01	+.02	-.00	+.12*	+.11
18	+.04	+.01	-.03	-.01	+.06	-.03	-.03	+.04	+.06	+.07
19	-.03	-.03	+.03	+.04	+.03	+.02	-.05	+.16**	+.06	-.01
20	+.03	-.04	-.03	+.06	+.08	-.00	-.03	+.08	-.16**	+.01
21	+1.00	+.16**	+.08	-.02	+.40**	+.14*	+.08	+.12*	+.09	+.06
22		+1.00	+.10	+.10	+.19**	+.07	+.08	-.02	+.07	+.07
23			+1.00	+.02	+.09	+.16**	-.00	+.07	+.12*	+.05
24				+1.00	+.03	-.00	+.04	+.04	+.09	+.08
25					+1.00	+.22**	+.15**	+.01	+.01	+.23**
26						+1.00	+.12*	+.01	+.02	+.11
27							+1.00	+.01	+.02	+.15**
28								+1.00	+.16**	+.00
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Appendix D (continued)

Item No.	31	32	33	34	35	36	37	38	39	40
1	-.05	-.02	-.05	+.08	+.03	+.06	+.06	+.11	+.12*	-.00
2	+.06	+.02	+.11	+.01	+.04	+.08	+.09	+.00	+.05	-.04
3	+.06	+.15**	+.08	+.01	+.02	+.02	+.09	+.18**	+.17**	+.03
4	+.03	-.02	+.08	-.02	+.00	+.18**	+.01	+.12*	+.13*	-.02
5	+.04	+.03	+.04	+.02	-.01	+.02	+.03	+.09	+.11	-.03
6	+.09	-.03	+.05	-.06	+.00	-.01	-.07	-.04	+.00	+.11
7	+.04	+.13*	-.02	+.05	+.09	+.09	+.14*	+.01	-.00	-.02
8	+.06	-.03	-.02	+.03	-.09	+.03	-.09	-.01	+.00	+.01
9	+.09	+.02	+.10	+.03	+.03	+.06	+.17**	+.04	+.15**	-.01
10	+.02	+.01	+.08	+.02	-.05	+.07	-.03	-.05	+.05	-.02
11	+.07	-.01	+.04	-.02	-.00	-.02	-.00	+.03	+.03	+.02
12	+.10	+.01	+.06	-.04	+.02	+.05	+.05	+.05	+.02	-.09
13	+.05	+.03	+.13*	+.01	+.02	+.08	+.12*	+.06	+.00	-.06
14	+.06	-.00	-.01	-.03	+.03	+.05	+.02	-.00	+.03	-.12*
15	+.05	-.00	+.00	+.05	-.01	-.00	+.05	+.00	+.01	-.02
16	+.00	+.05	+.14*	+.13*	-.00	+.05	+.08	-.05	+.08	-.05
17	+.01	+.01	+.10	-.05	-.00	+.10	-.00	+.02	+.13*	+.04
18	+.00	+.00	+.04	+.06	-.00	-.03	+.03	+.07	+.04	-.07
19	-.10	+.06	-.10	+.09	+.13*	+.00	-.05	-.00	+.03	+.00
20	+.06	+.09	+.06	+.10	-.01	+.09	-.04	-.01	+.00	+.04
21	+.05	+.03	+.06	+.03	+.09	+.23**	+.15**	+.12*	+.06	-.03
22	+.07	+.00	+.14*	-.05	-.05	-.04	+.11	+.15**	+.19**	+.00
23	-.02	-.01	+.01	+.12*	+.08	-.00	-.00	+.00	+.00	+.11
24	-.02	-.02	+.02	+.03	+.01	-.01	+.10	-.01	+.11	-.01
25	+.11	+.19**	+.03	+.00	+.03	+.11	+.20**	+.26**	+.06	-.10
26	+.06	-.02	+.07	+.03	+.07	+.03	+.13*	+.19**	+.09	-.04
27	+.07	-.01	+.04	-.01	+.00	+.07	+.24**	+.10	+.17**	-.06
28	-.01	-.01	-.03	+.52**	+.27**	-.08	+.04	-.08	+.02	-.06
29	+.05	+.06	-.02	+.12*	+.05	-.02	+.06	-.01	+.04	-.02
30	+.15**	+.14*	+.14*	+.01	+.04	+.11	+.25**	+.13*	+.20**	-.02
31	+1.00	+.00	+.10	-.06	-.02	+.21**	+.19**	+.05	+.11	-.03
32		+1.00	+.11	-.03	+.22**	+.06	+.07	+.11	+.03	-.06
33			+1.00	+.02	+.05	+.15**	+.15**	+.08	+.18**	-.06
34				+1.00	+.19**	-.08	+.04	-.04	-.03	+.03
35					+1.00	+.01	+.04	-.05	+.10	-.00
36						+1.00	+.12*	+.06	+.10	-.01
37							+1.00	+.24**	+.07	-.05
38								+1.00	+.11	+.03
39									+1.00	-.05
40										+1.00
41										
42										
43										
44										
45										
46										
47										

Appendix D (continued)

Item No.	41	42	43	44	45	46	47
1	+.03	-.05	-.02	-.04	+.01	-.01	+.00
2	-.06	-.00	-.01	-.00	+.01	-.00	+.07
3	-.08	-.01	-.03	-.05	-.04	-.05	+.01
4	+.00	-.04	-.01	-.12*	-.01	-.03	-.05
5	+.02	-.05	+.04	+.03	-.05	-.01	+.01
6	-.03	+.11	+.01	-.06	+.00	+.08	-.02
7	-.01	-.05	-.08	+.00	+.04	+.00	+.01
8	+.04	-.07	-.07	-.00	-.03	+.01	+.01
9	-.07	+.01	-.03	-.01	+.00	+.00	-.02
10	-.08	-.05	-.05	-.13*	-.06	-.03	-.09
11	+.05	+.02	+.00	+.04	+.08	+.00	-.09
12	-.01	+.07	-.02	-.08	-.02	+.02	+.00
13	-.08	-.01	-.04	-.05	-.05	-.05	-.04
14	-.07	+.00	-.09	-.10	-.10	-.09	-.08
15	+.04	+.06	+.02	+.06	+.02	-.04	-.00
16	-.07	+.03	+.00	-.00	-.01	-.05	-.06
17	-.13*	+.12*	+.01	-.03	-.04	-.01	-.02
18	-.07	-.02	-.00	-.04	-.02	-.02	+.05
19	-.02	+.07	-.01	+.03	-.00	+.02	-.04
20	+.01	-.04	-.04	+.01	+.10	-.03	+.02
21	-.06	-.07	+.08	-.05	-.08	-.04	-.05
22	+.04	+.05	+.01	-.02	+.02	-.01	-.05
23	-.04	-.00	-.03	+.11	-.02	-.04	-.02
24	+.07	-.04	-.06	+.01	+.02	-.07	-.04
25	-.15**	-.02	+.02	-.08	-.07	-.00	+.03
26	-.04	+.12*	-.06	+.07	-.04	+.03	+.14*
27	-.10	-.05	+.00	-.00	+.02	-.13*	-.09
28	-.01	+.00	-.04	+.04	+.16**	+.09	+.11
29	+.03	+.06	-.02	-.03	-.00	+.01	+.04
30	-.11	-.02	-.08	-.06	-.10	+.02	+.02
31	-.07	-.00	-.07	-.04	+.09	+.01	-.00
32	-.17**	-.10	-.05	-.10	-.08	+.00	+.00
33	-.11	-.02	-.07	-.03	+.03	-.03	-.12*
34	+.02	-.03	-.07	+.15**	+.16**	-.01	+.13*
35	+.00	+.11	+.00	-.00	+.02	+.04	+.01
36	-.10	-.05	-.01	-.08	-.08	+.00	-.10
37	-.02	-.09	-.01	+.03	+.06	+.01	+.03
38	+.00	+.01	+.05	-.03	-.00	+.01	+.03
39	-.09	-.00	-.07	-.02	-.04	+.01	-.04
40	+.14*	+.13*	+.15**	+.31**	+.26**	+.14*	+.15**
41	+1.00	+.16**	+.14*	+.17**	+.17**	+.05	+.05
42		+1.00	+.16**	+.18**	+.12*	+.27**	+.27**
43			+1.00	+.09	-.00	+.08	+.05
44				+1.00	+.25**	+.07	+.17**
45					+1.00	+.13*	+.15**
46						+1.00	+.27**
47							+1.00

APPENDIX E

ITEM IDENTIFICATION INDEX

Item No.

1. My hands and feet are usually warm enough.
2. I feel anxious about something or someone almost all the time.
3. I am more self-conscious than most people.
4. I feel hungry almost all the time.
5. I am usually calm and not easily upset.
6. I have nightmares every few nights.
7. I have been afraid of things or people that I knew could not hurt me.
8. Often my bowels don't move for several days at a time.
9. My feelings are hurt easier than most people.
10. I am happy most of the time.
11. I have a great deal of stomach trouble.
12. At times I lose sleep over worry.
13. I worry quite a bit over possible troubles.
14. Sometimes I become so excited that I find it hard to get to sleep.
15. I am often sick to my stomach.
16. I am the kind of person who takes things hard.
17. Life is often a strain for me.
18. I practically never blush.
19. People who spend more money than they can afford to.
20. People who get very emotional in discussions.
21. Electric appliances that go out of order.
22. People who snore.
23. People who honk car horns to call somebody.
24. People who do all the talking in conversations.
25. Keys that don't work.
26. Library books which have been damaged or from which a page has been torn.
27. Being interrupted in the middle of some work.
28. Lurid and "sexy" covers on pocket books sold in drug stores.
29. Coffee or cocoa spilled from the cup into the saucer.
30. Water fountains where the water doesn't spurt up high enough.
31. Stopping for red lights or stop signs while driving.
32. Highly seasoned or "hot" foods.
33. Jokes that you have heard before.
34. "Dirty" or obscene jokes.
35. The emphasis given sex crimes in popular newspapers.
36. Taking medicine.

Appendix E (continued)

37. Pencil points that aren't sharp enough.
38. "Drafty rooms."
39. Being asked to repeat something you just said.
40. bean soup
41. salmon
42. Swiss cheese
43. veal chops
44. lima beans
45. cabbage
46. mushrooms
47. cottage cheese

APPENDIX F

ORIGINAL CENTROID FACTOR MATRIX

284220	52848	139500	75928	173698	141693	49526	1 1
184137	63434	72053	61199				1 2
380168	123897	210890	137796	187630	95101	214465	2 1
59342	58867	61043	95078				2 2
361573	78900	144743	159574	124494	174796	118854	3 1
98101	156233	145040	160515				3 2
200071	41376	89206	39160	46680	99287	164267	4 1
151545	56117	74161	48959				4 2
369831	103862	267787	111841	155614	174064	210431	5 1
43799	97122	124465	44696				5 2
19202	139096	90124	37414	37456	96034	88138	6 1
136975	193361	167170	62499				6 2
262647	44072	137912	104459	17906	75256	99985	7 1
200219	38384	31488	164835				7 2
28843	58933	66776	131084	102398	137436	102071	8 1
212564	150357	173743	17577				8 2
335088	142516	168185	156982	67954	308707	282984	9 1
33426	57881	102956	31157				9 2
304821	161509	188095	59331	85624	25603	116725	10 1
62225	146055	97192	158036				10 2
241409	125724	244699	191813	260161	160362	233945	11 1
268286	63760	229792	49233				11 2
298479	135630	95369	69148	214631	263231	41053	12 1
127120	141181	22329	102924				12 2
444261	227093	175542	147675	182729	97166	175400	13 1
107806	224514	79810	34343				13 2
278928	172538	41632	40837	169595	190577	57045	14 1
213107	252471	39893	55139				14 2
277632	77736	282870	199968	313411	189768	250059	15 1
341486	85507	157332	126916				15 2
357091	136608	190046	120135	153204	52263	104292	16 1
107559	145679	71430	93030				16 2
368517	170874	206820	149712	48966	81328	89564	17 1
127503	199941	147110	208899				17 2
145486	31622	59765	31855	70370	70988	252589	18 1
92820	40024	94873	204386				18 2
144448	58897	237639	119405	62515	154025	65113	19 1
53094	44238	116114	73805				19 2
39806	78836	79959	37333	48900	148568	105674	20 1
170148	29379	189961	49608				20 2
336913	220086	185671	55632	103490	112689	117358	21 1
152102	166856	216456	206177				21 2
176660	152303	114356	176921	153493	71325	62900	22 1
68901	78721	60607	142250				22 2
84388	215945	48105	130120	83033	57884	90505	23 1
71550	119472	143390	178857				23 2
149423	86871	64815	25278	110793	115538	186845	24 1
45104	58753	115059	113818				24 2
356672	336446	291493	134286	163369	205976	104222	25 1
39059	61441	152854	21186				25 2
181466	279766	50620	140711	89924	132183	109111	26 1
56029	40434	118276	20719				26 2
224429	135801	224422	50679	120254	135064	126031	27 1
94344	98453	132977	41620				27 2
176681	394012	335844	305406	297414	92695	107403	28 1
85590	144815	119038	42863				28 2
231442	185866	185458	136398	100569	141042	109800	29 1
34349	145887	126609	118715				29 2
374983	148814	129123	177567	41898	84442	137079	30 1
107940	158539	81128	155210				30 2
198252	42968	148562	224225	134952	78239	52118	31 1
55505	97827	193263	143901				31 2
172667	53278	137267	46679	25710	45073	38059	32 1
102432	137368	75631	146606				32 2
258060	55003	156246	181558	149574	121718	57018	33 1
187665	113228	40197	76343				33 2
106213	332876	328896	263941	178876	199046	53961	34 1
161181	159659	217429	53444				34 2
125138	266975	124999	133272	205412	62895	51667	35 1
73787	59842	51242	66545				35 2
236874	43635	234048	116786	56890	92323	120309	36 1
188020	153847	151607	161716				36 2
308940	267148	161798	205467	79177	147850	107148	37 1
30105	103743	86290	179740				37 2
205470	216515	193024	273905	195691	43103	103341	38 1
120595	62399	86574	131172				38 2
310664	79837	131480	132206	36072	112511	35275	39 1
115286	213981	152444	130411				39 2
233337	168204	268846	272787	68442	75290	83273	40 1
40946	141475	76019	158876				40 2
246861	116097	222003	105295	164433	78346	85200	41 1
102676	133158	91112	70996				41 2
152526	120942	270551	345259	186475	289573	126842	42 1
32135	152169	97918	98706				42 2
161701	57526	95463	245409	158275	83063	74244	43 1
123971	129757	77794	126917				43 2
210993	261241	277661	221704	33680	119297	84145	44 1
56847	89924	62162	117212				44 2
155532	211273	238683	209930	111191	256631	171323	45 1
20202	81715	138784	30866				45 2
154402	164523	185485	218811	118983	116112	99143	46 1
125913	170551	55898	125202				46 2
157912	263357	228286	203214	104214	70376	118513	47 1
148194	84754	24492	273418				47 2

APPENDIX G

ORTHOGONALLY ROTATED FACTOR VARIANCE MATRIX

Item No.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
1	.01	.01	.00	.00	.00	.00	.13	.00	.00	.00	.01
2	.00	.00	.00	.00	.01	.19	.00	.04	.00	.00	.03
3	.22	.00	.00	.01	.02	.00	.01	.02	.00	.00	.01
4	.00	.00	.01	.00	.03	.00	.02	.00	.00	.00	.02
5	.25	.00	.00	.00	.00	.03	.02	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.02	.00	.04	.00	.03
7	.00	.00	.01	.00	.00	.01	.10	.00	.00	.00	.03
8	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.02
9	.31	.00	.00	.00	.00	.01	.00	.00	.00	.02	.00
10	.00	.00	.00	.00	.00	.03	.06	.02	.00	.00	.00
11	.00	.00	.00	.00	.00	.01	.00	.41	.00	.00	.00
12	.00	.01	.00	.00	.00	.26	.00	.00	.00	.00	.00
13	.01	.00	.00	.00	.00	.36	.00	.02	.00	.00	.02
14	.00	01	.00	.01	.01	.23	.00	.00	.00	.00	.00
15	.01	.00	.00	.00	.00	00	.00	.53	.00	00	.00
16	.11	.00	.01	.00	.00	12	.00	.00	.00	.00	.00
17	.02	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00
18	.11	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00
19	.00	.00	.04	.00	.00	.03	.00	.00	.00	.03	.00
20	.00	.00	.00	.00	.00	.02	.00	.00	.00	.06	.00
21	.00	.31	.00	.00	.00	.02	.01	.00	.00	.00	.00
22	.00	.11	.00	.00	.00	.00	.01	.00	00	.00	.00
23	.00	.04	.04	.00	.00	.00	.00	.00	.00	.00	.03
24	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
25	.00	.37	.00	.03	.03	.00	.00	.00	.00	.00	.02
26	.00	.10	.01	.00	.00	.00	.00	.00	04	.01	.00
27	.00	.01	.00	.00	.00	.01	.00	.02	.01	.01	.01
28	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.03	.02	.02	.00	.02	.02	.01	.04	.01
30	.00	.02	.00	.05	.05	.00	.00	.03	01	.01	.09
31	.00	.00	.00	.00	.00	.00	.01	.00	.01	.12	.02
32	.00	.00	.00	.07	.07	.00	.00	.00	.00	.00	.01
33	.03	.00	.00	.01	.01	.00	.01	.00	.00	.12	.00
34	.00	.00	.41	.01	.01	.00	.01	.00	.00	.00	.00
35	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00
36	.00	.02	.02	.00	.00	.01	.02	00	.00	.11	.00
37	.01	.04	.00	.00	.00	.00	.00	.00	.00	.01	.24
38	.03	.13	.02	.00	.00	.00	.00	.00	.00	.00	.09
39	.04	.02	00	.01	.01	.00	.00	.00	.00	.03	.01
40	.00	.00	.00	.18	.18	.02	.00	.00	.05	.00	.00
41	.00	.00	.00	.15	.15	.00	.00	.00	.00	.04	.00
42	.00	.00	.00	.03	.03	.01	.06	.00	.25	.00	.01
43	.00	.02	03	.08	.08	00	.00	.00	.01	.02	.00
44	.00	.00	.02	.21	.21	.00	.01	.00	.01	.00	.00
45	00	01	.02	.17	.17	.00	.00	.00	.01	.02	.02
46	.00	00	.01	.01	.01	.00	.00	.00	.21	.00	.00
47	.00	.00	.00	.01	.01	.00	.00	.00	.24	.00	.01

VITA

Thomas Francis Cunningham

Candidate for the Degree of

Master of Science

Thesis: A FACTOR ANALYTIC STUDY OF THREE PERSONALITY MEASURES

Major Field: Psychology

Biographical:

Personal Data: Born in Hoboken, New Jersey, December 1, 1940, the son of William Aloyisius and Ann Marie Cunningham.

Education: Received elementary education at St. Mary's Elementary School, North Bergen, New Jersey; graduated from St. Peter's Preparatory School, Jersey City, New Jersey in 1958; received Bachelor of Science degree from St. Peter's College in June, 1962 with a major in Sociology; received college credits from New York University, New York City, New York; completed requirements for the Master of Science degree with a major in Psychology in August 1965.

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