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The Relationship Between Personality Factors and Musical Taste

Joe Dean Brower

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By

Joe Dean Brower

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E. F. Castetter
DEAN

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DATE

Thesis committee

Morton J. Keston
CHAIRMAN

Ralph Thoreson

Irvin Peterson

TABLE OF CONTENTS

X

LIST OF TABLES

CHAPTER I

THE PROBLEM AND ASSOCIATED LITERATURE

I. THE PROBLEM

This study is an attempt to distinguish personality factors which may influence persons in their preferences for a particular kind of music.

It is not the purpose of this study to investigate the personality of individuals who happen to prefer a special type of music. Instead, the study is focused on personality differences which may be found among three groups of people who have indicated a preference for three different types of music.

Two tests were chosen for this investigation. The first test used was the Keston Music Preference Test. Of the many published music tests, this is the only one available which allows the subject to listen to music being played and then indicate his preferences among the selections he has just heard. In this way, the test measures an individual's esthetic response or judgment to various musical selections. The test is constructed in such a way that the individual must choose between a serious classical selection, a "pop concert" selection, and a "dinner music" selection. Thus, after the test has been administered to a number of individuals, they may be subdivided into groups according to

which of the three types of music they preferred in general throughout the test.

The second test used was the Personality Research Inventory. This is an experimental test in the process of being developed by the Educational Testing Service, Princeton University, and, as the name implies, lends itself quite readily to research problems of this kind. It was chosen from the host of pencil and paper tests available because it appeared to offer the widest range among personality factors.

Since the ultimate goal of this study was to be able to discover personality differences among the groups selected for study, the twenty-five scales of the Research Personality Inventory provided a large number of factors for investigation. A related goal of the study was the expectation that some of the personality factors could be shown to be related to musical sophistication. Although the Personality Research Inventory has some of the limitations of a pencil and paper test, it was found to be adequate for the purposes of this study, as will be shown later.

II. REVIEW OF THE LITERATURE

The general field of esthetics and personality is a much neglected field in the history of psychology. Unfortunately, little experimental research has been performed. There are nonetheless a number of important studies which

are important forerunners in this area. The review of the literature was confined to those studies which combined esthetic judgment and personality. The earlier studies cited combined the esthetic judgments of picture preferences and literary preferences with personality. The later studies combined the esthetic judgment of music preference with personality.

Early studies in esthetics and personality. In reporting the relationship between ability in art and personality, H. A. Carroll[1] found extroversion, as measured by the Bathurst Test of Personality, to be correlated with, (1) Meier-Seashore Art Judgment Test scores, -.18; and (2) McAdory Art Judgment Test scores, -.11. In a somewhat similar study, C. Burt investigated the differences between extroverts and introverts in picture preferences.[2] He formulated two general conclusions: (1) "Picture preferences of the introverts leaned toward the formal, that is, the impressionistic and the classical, and (2) "Picture preferences of the extroverts leaned toward the meaningful, that is, the romantic and the realistic."

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[1]H. A. Carroll, "A preliminary report on a study of the relationship between ability in art and certain personality traits," School and Society, 1932, 36, pp. 285-288

[2]C. Burt, "Correlations between persons," British Journal of Psychology, 1937, 28, pp. 50-96.

In an experiment by Eysenck[3] the subjects were asked to rank order according to liking five sets of pictures each containing thirty to forty pictures. The Heidbreder Personality Test and the Vetter Personality Test were administered to obtain measures of introversion-extroversion and radicalism-conservatism respectively. Factors were then extracted from the correlated rankings. The same two factors were active in each of the five sets of pictures; the "T" factor which was a preference for formal rather than the representational type of picture, and the "K" factor which was preference for modern, bright pictures and a preference of color to form. The findings of this experiment may be summarized as follows:

1. The "K" factor correlated +.72 with extroversion.

2. The "K" factor correlated +.72 with radicalism and youth.

E. D. Sisson and B. Sisson compared the performance of two groups, one high in introversion, the other high in extroversion, on the Allport-Vernon Scale of Values and other questionnaire material.[4] The conclusions were as follows:

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[3]H. G. Eysenck, "The general factor in aesthetic judgment," British Journal of Psychology, 1940, 30, pp. 94-102.

[4]E. C. Sisson and B. Sisson, "Introversion and the esthetic attitude," Journal of General Psychology, 1940, 22, pp. 203-208.

1. No differences were found between introverts and extroverts with respect to attitudes toward music and poetry.

2. No differences were found between the two groups with respect to esthetic training, experience, and interests.

3. There was a rather well-marked tendency for introverts to score higher on the esthetic scale of the Allport-Vernon test.

Another study attempted to discover the relationship between introversion and the appreciation of literature. Three test were used in the investigation: The Bernreuter Personality Inventory, to measure introversion, the Rigg Poetry Test and the Carroll Prose-Appreciation Test, to measure literary appreciation. The following correlations were found:

1. Between introversion and poetry appreciation, +.24.

2. Between introversion and prose appreciation, +.19.

3. Between introversion and the two tests combined, +.25.

The general conclusion was that there is "some possible relation between introversion and esthetic sensitivity."[5]

Three aspects of the esthetic experience, attitudes,

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[5]K. Coggins, R. Hensley, and H. K. Mull, "Introversion and the appreciation of literature," American Journal of Psychology, 1942, 55, pp. 561-571.

perceptions, and experiences, were studied by Peters.[6] He concluded from his experimentation that "the indications are that introverts prefer the formal, extroverts the meaningful."

These studies which have just been reviewed have shown that personality factors appear to be related to esthetic judgments such as literature and picture preferences. Three additional investigations which follow are especially pertinent because they combine personality with the particular esthetic judgment of musical preferences. The importance of these studies to the discussion of the present one is enhanced even further by the fact that all three of them utilized the Keston Music Preference Test. They are, therefore, discussed in some detail.

Literature on personality and music appreciation. Keston and Pinto[7] gathered data on certain factors, somewhat arbitrarily chosen, with the hope that they would yield interesting and valid relationships. The study attempted to find the possible relationships between musical preference and the following factors: (a) introversion-

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[6]Henry N. Peters, "The experimental study of aesthetic judgments," Psychological Bulletin, 1943, 39, pp. 285-288.

[7]Morton J. Keston and Isabelle Pinto, "Possible factors influencing musical preference," Journal of Genetic Psychology, 1955, 86, pp. 101-113.

extroversion, (b) masculinity-femininity, (c) age, (d) educational level, (e) sex, (f) formal musical training, (g) ability to recognize musical compositions, and (h) intelligence.

A battery of tests was administered to 202 university students of average scholastic ability. These tests included the Keston Music Preference Test, the Keston Music Recognition Test and the Heston Personal Inventory. Questionnaire information and intelligence test scores were also obtained. The results of these tests were then correlated to see if any significant relationships could be found between any of the factors under investigation. The following correlations beyond the 1 per cent level were found for Musical Preference: .63 with Intellectual Introversion; .51 with Music Recognition; .41 with Music Training; .38 with Age; .29 with Intelligence. Thus, the highest correlation found was between Musical Preference and Intellectual Introversion.

Schopler, stimulated by the results found by Keston and Pinto, investigated the hypothesis that individuals who prefer classical music tend to be thinking introverts.[8] To test this hypothesis he administered the Keston Music

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[8] J. H. Schopler, "Introversion-Extroversion and Musical Taste." (Unpublished Master's thesis, The University of New Mexico, Albuquerque, 1953).

Preference Test and the Minnesota T-S-E Inventory to 127 college students. In the discussion which follows, high music preference scores refer to persons who like classical music, and high scores on the introversion-extroversion scales indicates introversion. The Minnesota T-S-E Inventory measures three types of introversion-extroversion--thinking, social, and emotional. The most conclusive finding of this study was the positive correlation found between Music Preference scores and Thinking Introversion-Extroversion scores.

A further analysis was performed in the Schopler study by comparing the upper and lower 25 per cent groups on the Keston Music Preference Test scores. Analysis of variance was performed to determine whether there was a significant difference between thinking introversion-extroversion scores for the low and high groups in music preference. F ratios obtained from this analysis permitted the rejection of the hypothesis that no significant differences existed between the thinking introversion-extroversion scores of the high and low musical preference groups. The thinking introversion-extroversion scores of the high music preference group was found to be significantly higher than the thinking introversion-extroversion scores of the low music preference group.

The procedure was then reversed by dividing the

population into two groups based on high and low thinking introversion-extroversion scores. Another analysis of variance was performed to test the hypothesis that there was no significant difference between the mean musical preference scores of the high and low thinking introversion-extroversion groups. This hypothesis was also rejected, since the music preference scores of the high thinking introversion-extroversion groups were significantly higher than the music preference scores of the low thinking introversion-extroversion group. Correlation coefficients were then calculated between pairs of factors in the various groups. The most significant correlations were found between Keston Music Preference Test scores and Thinking Introversion-Extroversion.

Schopler concluded that (1) a general positive relationship exists between musical preference and thinking introversion-extroversion, (2) there is no relationship between musical preference and social and emotional introversion-extroversion, (3) there is a significant relationship between high musical preference and thinking introversion-extroversion, and (4) the investigation of personality characteristics and other similar criteria of persons scoring high on the musical preference test appears to be a fruitful area for further investigation.[9]

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[9]Ibid., pp. 51-52.

The following study performed by Fenley bears even a greater similarity to the present one. The purpose of this study was to seek some possible relationships between personality characteristics and musical sophistication.[10] The Minnesota Multiphasic Personality Inventory and the Keston Music Preference Test were administered to 220 students in psychology classes at the University of New Mexico. Correlation analysis of the data proved to be fruitless. It was then decided to compare the top twenty males on the music preference test with the bottom twenty males, and the top twenty females with the bottom twenty females. An analysis of variance was performed on the groups. Four factors of the MMPI in the musical male group were found to be significantly higher than the non-musical male group. These factore were F ("false" or validity scale), Sc (schizophrenia scale), and Ma (hypomania scale) at the 1 per cent level; and Mf (masculinity, or interest scale) at the 5 per cent level.

These four factors--F, Sc, Ma, and Mf--were then paired for purposes of correlation analysis to determine if they were mutually exclusive or of a composite nature. Thus, a correlation coefficient was determined between the

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[10] G. W. Fenley, "A Study of the Relationship Between Musical Preference and the Fourteen Factors of the Minnesota Multiphasic Personality Inventory" (unpublished Master's thesis, The University of New Mexico, Albuquerque, 1955).

factors F and Sc, F and Ma, F and Mf, and so on for all combinations. The correlation coefficients obtained ranged from .00 to .62. With only twenty subjects, however, such correlations were not significant. Therefore, the hypothesis that these four variables may form a consistent pattern in the personality of a musically sophisticated person was rejected on the basis of the meager data available in the study. The conclusion was that these four variables are unrelated and independent but may, nonetheless, be related to musical sensitivity.[11]

When the female subjects were analyzed in a similar fashion, all twelve factors of the MMPI proved to be not significant with the exception of Pa (paranoia scale) which was found to be significant at the five per cent level.

The next step was to run an analysis of variance between upper males and upper females on the variables found to be significant for upper males. Results of this analysis showed that musical males were significnatly higher than musical females of F, Sc, and Ma scales. (It was not possible to compare males and females on the Mf scale since it is scored differently for each sex.)

The major findings of this study may be summarized as follows:

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[11]Fenley, op. cit., p. 59.

1. Musical males were significantly higher than non-musical males on F, Sc, Mf, and Ma scales.

2. Musical males were significantly higher than musical females on F, Sc, and Ma scales.

3. No significant differences were found between musical and non-musical females on any scale with the single exception of the Pa scale.

4. The significant difference found between musical and non-musical males on F, Sc, Mf, and Ma were accepted as the important and valid findings of the study.

5. No significant correlations were found among the four factors F, Sc, Mf, and Ma of the musical males.[12]

Some of the main conclusions drawn by Fenley from the results of his study are as follows:

1. The four factors found to be significant for the male groups, F, Mf, Sc, and Ma, were more than might have been anticipated, since the two tests used supposedly measure unrelated variables.

2. With respect to the F factor, the upper males were significnatly deviant from the lower males, and this deviancy lies in several areas which were found to be mutually exclusive upon further analysis.

3. Musically sophisticated males were found to be

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[12] *Ibid.*, pp. 81 *et seqq.*

higher than musically unsophisticated males on the Mf scale, a not surprising finding. The items of this scale refer to a trend in the direction of a feminine interest pattern. Certain areas, such as art, literature, music and similar esthetic fields, have been considered to belong to the feminine interest pattern.

4. The significance found for Sc was least expected. Many of the items of this scale represent a deviant pattern so unusual that they would not be likely to be found even in persons only marginally adjusted. Musical interest may, however, be connected in some way with the withdrawing behavior which typifies schizoid behavior.

5. The significance found in the Ma scale is not surprising in the light that such individuals are characterized by overproductive thought and action, and continually engage in emotionally stimulating pursuits of an intriguing nature.

6. No significant difference was found between the twenty high scoring females and the twenty low scoring females.

7. The most pressing question remaining is why the males should show a deviant pattern and the females should not. A speculative answer may be found in the fact that traditionally our society has discouraged male interest in music activity, but has aided and encouraged females in this pursuit. An interesting conjecture would be whether deviant

males enter into musical training or if such persons develop a deviant pattern after being cut off from segments of their group.[13]

Fenley's study is most like the present one in both design and method of analysis. Furthermore, the results and conjectures of his study provided the stimulus for the present investigation.

Overview of the literature. The earlier studies, which combined personality with esthetic judgment, attempted to show the relationship between introversion-extroversion and literature or picture preferences. Although none of the studies proved to be conclusive in their findings, the uniformity of the results suggests that a difference exists in the esthetic appreciation of introverts and extroverts.

The later studies cited were concerned with personality and music appreciation. They were motivated, in part, by the consistency of the results obtained by the earlier ones. The later studies have in common the use of the Keston Music Preference Test to determine the musical sophistication of the subjects and some measure of personality and other related material to determine if any significant differences existed between musical and non-musical subjects.

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[13] Ibid., pp. 85 et seqq.

These studies have shown that (a) a relationship between introversion-extroversion and music appreciation exists, and (b) a difference exists between musical and non-musical subjects on some of the clinical scales of the MMPI.

CHAPTER II

METHOD OF THE STUDY

I. DESCRIPTION OF THE POPULATION

The data for this study were provided by students enrolled in upper and lower division psychology classes at the University of New Mexico. Tests were administered at the beginning of each of two successive semesters. The classes consisted of sophomores, juniors, seniors, and graduate students. Complete data was obtained from 370 subjects, 163 male and 207 female. Since sex differences were not sought in the ultimate analysis, no attempt was made to keep the number of males and females equal. Equality in grouping was obtained, however, when three groups were selected from the male population and three groups from the female population for analysis.

II. DESCRIPTION OF THE TESTS

Two tests were administered to the subjects, the Revised Keston Music Preference Test and the Personality Research Inventory. A description of these tests follows.

The Revised Keston Music Preference Test

Description of the test. The Keston Music Preference Test is a series of twenty groups of musical excerpts, each

group consisting of three musical selections, one each from the following categories of music:

a. severely classical

b. serious popular classical ("pop concert")

c. light concert selections ("dinner music").

Each of the excerpts is approximately thirty seconds in length and one excerpt is separated from the next by the voice of an announcer who says "1A" or "1B", or "1C" according to the excerpt being played. A five second pause between each excerpt allows the subject to indicate his preference for one of the selections. The three categories of music have been randomized within each group. An attempt was made to keep the mood of the three excerpts of a given item similar. Table I indicates the order of presentation of the 20 items of the test.

In Item No. 1, for example, the order of presentation is as follows: serious popular classical excerpt, first; severely classical excerpt, second; and the light concert selection, last. The remaining items of the test may be similarly interpreted.

Administration of the test. The Keston test is readily administered to even large groups. The excerpts are tape recorded, and printed answer sheets are available. The subject is asked to indicate which selection he likes best and which he likes least in each of the twenty items of the

TABLE I

ORDER OF PRESENTATION OF THE KMPT ITEMS

1.	BAC	6.	ABC	11.	ABC	16.	ABC
2.	CBA	7.	CBA	12.	CAB	17.	BAC
3.	ACB	8.	BAC	13.	ACB	18.	CAB
4.	CAB	9.	ACB	14.	BCA	19.	ABC
5.	BCA	10.	BCA	15.	CAB	20.	CAB

test. The method of response is as follows. There are three excerpts on each item of the test; these excerpts are referred to as A, B, and C. The subject is asked to rank the order of the selections, A, B, C, by indicating which of the three he likes best and which he likes least. The answer sheets provide small circles alongside the six possible responses to each item, AB, AC, BA, BC, CA, and CB. The subject fills in the circle of the response he wishes to make. The answer sheet also provides a "work" area where the subject may indicate his preferences as the selections are being played. The final response can readily be transferred to the proper answer space. FIGURE 1 includes a typical portion of the answer sheet used in the test.

ITEM NO. 1		ITEM NO. 2		ITEM NO. 3	
AB O	_____	AB O	_____	AB O	_____
AC O	_____	AC O	_____	AC O	_____
BA O	_____	BA O	_____	BA O	_____
BC O	A	BC O	A	BC O	A
CA O	_____	CA O	_____	CA O	_____
CB O	_____	CB O	_____	CB O	_____

FIGURE I

A TYPICAL PORTION OF THE ANSWER SHEET
USED IN THE KESTON TEST

The horizontal lines which appear after each of the possible responses represent the "work" area to be used by the subject to indicate his preferences as the music is being played. The printed A which appears on the middle line is merely to facilitate the ranking of the three selections by the subject. This A refers to the first selection played. When selection B is heard, the subject places a B either above or below the A according to whether he preferred A to B or not. The third selection, C, likewise is placed according to the subject's preference. During the pause which follows the playing of the three selections, the subject fills in the circle alongside the appropriate response. For example, if the subject were to rank the selection A C B he would fill in the circle alongside the paired group AB, indicating that he liked A best and B least.

Scoring the test. The six possible responses for each item are weighted 5,4,3,2,1,0. The principle involved in assigning the weights, was to penalize a person more for preferring a "poor" composition than for his failure to discriminate between two "good" compositions. Responses to each of the twenty items on the test may receive from 5 to 0 points. Therefore, the highest possible score obtainable is 100 and the lowest possible score is 0. Furthermore, a high score on the test indicates a preference for serious

classical and serious popular classical music; low scores on the test indicate a preference for light concert selections. Extreme scores are rare, however, and most of the subjects received scores in the 60-40 range.

Validity of the test. In an attempt to establish the validity of the test, it has been administered to a number of expert judges, and to large numbers of college students. Twelve such judges, including faculty members of music departments of the Universities of New Mexico, Minnesota, and Chicago, made an average score of 94.5, whereas 139 college students in psychology classes at the University of New Mexico made an average score of 58.8.[1]

Reliability of the test. The reliability of the revised test was established by the test-retest method in which 91 students from the University of New Mexico were utilized. Analysis of variance and covariance were used to determine the reliability of these scores, and a mean reliability coefficient of .92 was found.[2]

Formation of groups on the basis of the test. After the Keston Music Preference Test was administered, it was

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[1]Barbara J. Snodgrass, "A Simplified Revision of the Keston Music Preference Test" (unpublished Master's thesis, The University of New Mexico, Albuquerque, 1953), p. 48.

[2]Ibid., pp. 63-64 *et passim*.

necessary to separate the subjects on the basis of the type of music they preferred. It was decided to divide them into three groups, since the test itself contained three categories or levels of music. Group I refers, then, to those subjects who consistently chose serious classical music. Group II includes those whose predominate first choice was popular classical music. Group III contained those individuals who preferred light concert music. After the sorting had been completed, it was considered expedient to take the top twenty males and the top twenty females of each group. The subjects of this study, therefore, consist of three groups of twenty males and three groups of twenty females.

The Personality Research Inventory

Description of the test. The Personality Research Inventory, Form CETX3, was developed by the Educational Testing Service at Princeton University, under the direction of David R. Saunders. The Personality Research Inventory consists of 252 items of conventional inventory types. Personality is measured by the subject's scores on twenty-five descriptive variables, i.e., compulsive, tolerant of ambiguity, masculinity vs. femininity, etc.

The 252 items are used in twenty-five non-overlapping 10-item scales, with two general items left over. The latter provide data about the subject's sex and educational level

achieved. The items are arranged in a stratified random order so that the items of each scale are spread throughout the form.

Psychological nature of the test. The PRI provides for criterion keying studies or for clinical interpretation, through its stratified sample of personality inventory items. Application of the data obtained through the PRI is enhanced when patterns of items or configural interpretations are employed.

The PRI, then, is an experimental test, and no claims are made for its ability to predict anything. Continuous alteration is planned for the improvement of the test. Under the present circumstances, it was felt to be an adequate and suitable instrument, especially since the items would be unfamiliar to any of the psychology students who provided the data for this study.

Administration of the test. The subject is instructed to mark on the specially-designed separate answer sheet to indicate his immediate, independent response to each item. The test is untimed, normally requiring about 25-30 minutes, with almost all subject's finishing within 55-60 minutes.

The answer sheet provides for Y, N, or ? responses to each of the items. If the subject wishes to answer the question in the affirmative, he circles the Y; if he wishes

to answer in the negative, he circles the N. For some of the items choices other than "yes" and "no" are offered; for each of these questions the meaning of Y and N is given with the question. An example of one of these is:

Which is more characteristic of your conversational skill?

(Y) Being a good listener.

(N) Being a clear speaker.

In this case of course, the subject is not answering in terms of yes or no but merely indicating his response by circling either yes or no. The ? response is for indicating any other response the subject may wich to make, such as "in between," "somewhat," "don't know," "doesn't apply," etc. The subject is cautioned not to answer more than about one question in ten in this manner. A common example of this is:

Which would you rather listen to on the radio?

(Y) News reports.

(N) Symphonic music.

In this case, the subject may not care to listen to either news reports or symphonic music; therefore, he may indicate this by circling the ? response. Or he may like both news reports and symphonic music and would again circle the ? response to indicate this. The test specifically allows for about 10 per cent of the responses to be marked in this manner.

Validity and reliability of the test. No formal results for Form CETX3 are available at present. However, for Form CETX2, containing earlier versions of twenty of the scales, a median reliability of .52 was obtained through the application of the Kuder-Richardson Formula 14, and a median absolute intercorrelation of .11 was obtained from a sample of 458 high school seniors. These were about the poorest set of reliabilities obtained. Higher reliabilities, median = .65 have been obtained for college groups. Table II contains the mean scores and standard deviations for the 387 college students used in this study.

Therefore, the PRI consists of a series of twenty-five typical and important variables which are measured with sufficient reliability for correlational studies involving criteria, predictors, or other experimental factors. The probability of finding statistically significant results is enhanced by using the scales instead of single items. The interpretation of significant findings is facilitated through the built-in homogeneity of the scales. Furthermore, scale homogeneity minimizes the psychological complexity of each measure.

Description of the scales. The twenty-five scale labels are based on the content of each scale. The ten items of each scale are more similar to each other than in other inventories. The labels are technically, however,

TABLE II

"NORMS" FOR 387 COLLEGE STUDENTS OF THIS STUDY

SCALE	MEAN SCORE	STANDARD DEVIATION
Insightful	11.84	2.81
Free-floating anxiety	7.18	4.80
Self-accepting	11.29	3.47
Tolerant of frustration	10.33	3.18
Tolerant of ambiguity	9.91	4.03
Compulsive	11.18	3.39
Impulsive	10.74	3.16
Altruistic	8.81	4.03
Talkative	10.61	5.19
Self-sufficient	7.97	4.50
Gregarious	8.06	3.65
Aggressive	11.02	3.13
Attitude toward work	12.88	4.08
Foresight	13.35	3.25
Belief in individual freedom and responsibility	13.85	2.10

TABLE II (continued)

SCALE	MEAN SCORE	STANDARD DEVIATION
Belief in over-all group values	9.22	2.89
Social conscience	12.07	3.15
Status aspiration	8.53	3.35
Social know-how	12.29	3.53
Social status	14.84	3.76
Masculinity vs. femininity	8.77	3.65
Artistic vs. practical	10.47	3.83
Spiritual vs. material	7.60	4.91
Progressive vs. conservative	11.05	3.58
Liking to use mind	13.37	3.24

hypotheses as to what each scale measures. Alternate hypotheses are encouraged. Since no manual exists as yet for the test, and the scale labels are hypothetical, a formal description of the scales is not possible. Therefore, the scale-labels are given below with three examples taken from the test. A "Y" in parenthesis after the question indicates that points are earned on that scale for an affirmative response. If an "N" appears after the question, it indicates that credit is given for a negative response to the question.

Insightful. Are you able to criticize people without hurting their feelings? (Y) Are you reputed to have a good sense of humor? (Y) Are you always aware of what you are doing? (N)

Free-floating anxiety. Have you ever had a sudden sense of dread and vague danger without knowing why? (Y) Do you frequently get in a state of tension and turmoil by thinking over the day's happenings? (Y) Do you think that through being calm and cool you use up less energy than most people in getting things done? (N)

Self-accepting. Do you like to read in the bathtub? (Y) Do you like to have someone rub your back? (Y) Do you like to go swimming without a bathing suit? (Y)

Tolerant of frustration. Do you like to read continued stories in the popular magazines? (Y) When you are annoyed how apt are you to come out with remarks that hurt people's feelings? (Y)

(Y) Rarely
(N) Often

If it means giving up some personal pleasure, does it take a real effort for you to go out of your way to help another person? (N)

Tolerant of ambiguity. Do you like to have a place for everything and everything in its place? (N) Assuming the odds were appropriate in each case, which would you rather bet on? (Y)

(Y) Something that is about fifty-fifty.
(N) An almost sure thing.

Do people who seem unsure and uncertain about things make you feel uncomfortable? (N)

Compulsive. Does it bother you to have nothing to do at times? (Y) Do you tend to count things when there is no particular reason for knowing how many there are? (Y) Does everything you do have a purpose? (Y)

Impulsive. Are you always looking for new things to do or see or hear? (Y) When you are bored do you like to be quiet for a while? (N) Do you find that your interests

tend to be pretty much the same from day to day and month to month? (N)

Altruistic. Do you think that many people would refuse to tell lies to keep themselves out of trouble? (Y) Do you think that you can usually trust women to "play fair" with you? (Y) Are you annoyed by conceited people who claim to be superior to others? (N)

Talkative. Are you as likely to talk in a group of ten as in a group of two or three? (Y) Are you embarrassed if you are suddenly made the center of attention in a social group? (N) Would you describe yourself as a sociable, talkative person? (Y)

Self-sufficient. Do you like to do your planning alone, without suggestions from or discussions with other people? (Y) Do you like to work alone? (Y) Does it bother you to have some one offer you advice when you didn't ask for it? (Y)

Gregarious. If you could do either equally well, which would you rather paint pictures of? (Y)

(Y) Groups of people.
(N) Landscapes without people in them.

Do you enjoy the variety of humor in the usual radio or TV comedy show? (Y) How would you rather spend a free

afternoon? (N)

(Y) In an art gallery.
(N) At a game of cards.

Aggressive. Do people think of you as a leader who is nice to work with? (Y) Assuming you could do it well, do you think you would enjoy having quthority over people? (Y) Do you like to give orders that get things moving? (Y)

Attitude toward work. Do you ever take your work as if it were a matter of life or death? (Y) Can you always be counted on to try to do your job regardless of how hopeless it may be? (Y) What kind of goals do you usually set for yourself? (N)

(Y) Low enough so that you can reach them without too much effort.

(N) Too high for you to reach without too much effort.

Foresight. If you were a lawyer, would you be willing to defend a man after you knew he was guilty? (N) Should we pay our elected officials better than we do? (Y) Does it make you angry when you hear of someone who has been wrongly prevented from voting? (Y) Are our present physical and mental standards for policemen high enough? (N)

Belief in individual freedom and responsibility. Is it proper for censorship to advise us as to what books we can read, or what movies we can see? (Y) Is it all right for

businesses to form monopolies? (Y) Should any person accused of spying be given a trial by jury? (Y)

Belief in over-all group values. Do you believe war production should be encouraged if that is the only way to prevent a depression? (N) Should we worry about our own country and let the rest of the world take care of itself? (N) Would you be willing to be governed by a legislature in which over half of the delegates were not Americans? (Y)

Social conscience. Should young children be taught to be perfectly obedient? (Y) Does every family owe it to the city to keep their sidewalks cleared in the winter and their lawn mowed in the summer? (Y) Should police cars always be marked so that you can see them coming? (N)

Status aspiration. Other things being equal, would you prefer the job of a life insurance salesman to that of a farmer? (Y) If you could be successful either way, would you rather be an air raid warden than a political organizer? (N) Would you mind going in debt in order to achieve your ambitions? (N)

Social know-how. Do you feel uncomfortable when you are in mixed company and a shady story is told? (Y) Do your friends consider you rather absent-minded? (N) Does it annoy you when people use bad manners? (Y)

Social status. Do you have a telephone in your home? (Y) Does your family own any life insurance? (Y) Is your family income more than $5,000 per year? (Y)

Masculinity vs. femininity. Do you enjoy keeping in good physical condition? (Y) Which would you rather do? (N)

(Y) Take a bath.
(N) Take a shower.

On social questions, which are you regarded as? (N)

(Y) Soft-hearted and idealistic.
(N) Tough and practical.

Artistic vs. practical. Are you more sensitive than most people to the artistic quality of your surroundings? (Y) Are you considered to be a practical person? (N) Does poetry convey any more meaning to you than prose? (Y)

Spiritual vs. material. Which would you rather be? (Y)

(Y) A bishop.
(N) A colonel.

Which would you rather become? (Y)

(Y) A Saint.
(N) A millionaire.

Which spouse would you prefer? (N)

(Y) One who will command admiration.
(N) One who likes to read religious books.

Progressive vs. conservative. Do you believe that being ashamed of nudity is a useless prejudice that people

should get over? (Y) Do whatever religious beliefs you have tend to be strict (orthodox)? (N) Would it be a good idea to prohibit scientific experiments involving such things as high explosives, children's education, or operations on live animals? (N)

Liking to use mind. Are you inclined to analyze the motives of others? (Y) Do you enjoy thinking hard? (Y) Are you frequently surprised by the behavior of people whom you know well? (N)

Scoring of the test. There are ten questions assigned to each of the twenty-five scales of the PRI. Credit is earned toward each of the scales when the appropriate response is elicited by the subject. Two points are earned for each "correct" response. Thus, if the question is a plus item and the subject responds by circling the Y on the answer sheet he will receive two points in that scale. If he answers by circling the N then no credit is earned in that scale. When the ? response is indicated, one point is earned toward that scale; the rationale here is that if the subject does not indicate a definite answer, his indecision is partly in the direction of the variable under consideration. Thus, in any given scale the highest possible score is 20 and the lowest possible score is 0. Extreme scores such as these are infrequent, however. The mean scores for

our population on the twenty-five scales ranged from 14.84 to 7.18, as may be noted from Table II, page 26.

Summary of the method of the study. In this study, therefore, two tests were used. The revised Keston Music Preference Test was used to select three groups of subjects on the basis of the type of music they prefer. This test has been shown to be readily administered, easily graded, and to possess adequate validity and reliability. The Personality Research Inventory was used to obtain measures on twenty-five descriptive personality variables. In the following chapter, an attempt will be made to determine which of these variables may be related to music preference.

CHAPTER III

RESULTS AND DISCUSSION

The question stated in Chapter I as to which personality factors may influence persons in their preference for a particular kind of music may now be answered within the limitations of this study. Analysis of variance was chosen as the statistical instrument to be utilized for the comparison of groups.

The function of the analysis of variance is to determine whether or not significant differences are present between the means of groups under investigation. The purpose in applying this analysis to our data, then, is to determine whether or not the personalities of the people constituting the three groups form a consistent pattern. Factors were looked for among the three male groups, and, similarly, factors were looked for among the three female groups. The male and female groups, however, were not compared; this would only confound the analysis, for it was not the purpose of this study to focus attention on personality differences between the sexes.

In the application of the analysis to the data, a null hypothesis is proposed which states that no significant difference exists in the means of the groups, and the analysis then confirms or rejects the hypothesis proposed.

Analysis of the male population. The results of the three groups of males (I, II, and III) in terms of raw scores for each of the twenty-five scales of the Personality Research Inventory follows.

Table III contains the basic data for analysis of the self-sufficient scale for the male subjects. The null hypothesis to be tested may be stated: there is no significant difference among the means of the three groups of scores on the self-sufficient scale. The degrees of freedom of the "among groups" is one less than the number of groups involved, or 3 - 1. The degrees of freedom for the "within groups" entry in the tables which follow is 57 because 3 restrictions have been imposed on the original 60 observations; the number of degrees of freedom is reduced once for each restriction imposed. In this analysis, the F ratio obtained was 6.83. The F tables show that with n = 2 and n = 57, the values are 4.01 at the 5 per cent level and 7.01 at the 1 per cent level.[1]

The null hypothesis is therefore confirmed at the 1 per cent level but rejected at the 5 per cent level. In this study, levels beyond the 5 per cent level will be accepted as significant. Therefore, F ratios beyond the 5 per cent level will lead to the rejection of null hypotheses.

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[1]George W. Snedecor, Statistical Methods (Ames: The Iowa State College Press, 1946), p. 214.

TABLE III

ANALYSIS OF VARIANCE OF SELF-SUFFICIENT SCORES OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	1291	59		
Among Groups	250	2	125.0	6.83* Rejected
Within Groups	1041	57	18.3	

An F ratio which is significant at the 5 per cent level will be indicated by a single asterisk. An F ratio which is significant at the 1 per cent level will be indicated by a double asterisk. An F ratio which is not significant will have no asterisk. The F ratio of 6.83 obtained in the self-sufficient scores of the three male groups are significantly higher than those of the other two.

Since a significant F ratio was found, the next step was to determine which one of the three groups was superior to the other two. In this analysis a variation of the usual t test which is administered after the F test was applied. The formula employed, to test the fiducial limits, was developed by Peterson and may be stated as follows:[2]

$$f.\ l. = \sqrt{2\ N\ F\ V}$$

Here N = the number in groups, or 20; F = the tabled ratio for the degrees of freedom of the between groups and the within groups, or 2 and 57; V = the variance of experimental error, or the mean square of the within groups. This variation of the t test permits the comparison of sums rather than of means, and significant groups are, therefore, more readily ascertainable. This procedure is a relatively simple one because the values for N and F remain constant and the value for V is readily obtained from the analysis of

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[2]George M. Peterson. Unpublished material from seminar discussion. Psychology 221, The University of New Mexico, Albuquerque, 1955.

variance table. When the value for V is substituted in the formula and the computation completed, the only further step involved is to subtract the sums of scores for the three groups under consideration to see which of them is significantly higher than the others. Table IV contains the basic data for the application of the Peterson test to determine which of the three groups was significantly higher on the self-sufficient scale.

In this analysis, the value for V was 18.3. When this substitution was made in the formula and the computation completed, a difference of 72 in the sums of the scores was needed at the 1 per cent level. When the sums were subtracted a difference of 100 was found between Groups I and III. Therefore, a significant difference exists between the scores of Group I and Group III on the self-sufficient scale of the Personality Research Inventory, and this significance exists at the 1 per cent level.

In a similar manner, the remaining twenty-four scales were subjected to the analysis of variance. Tables V:A to IX:A represent the essential steps in these analyses.

Of the twenty-five scales on the Personality Research Inventory, six were found to be significant: gregarious, status aspiration, masculinity vs. femininity, and artistic vs. practical at the 1 per cent level; self-sufficient, and liking to use mind at the 5 per cent level.

TABLE IV

TEST OF SIGNIFICANCE AMONG MALE GROUPS ON SELF-SUFFICIENT SCORES

Group	Sum	Conclusion
I	219	Group I--Group III Significant at 1 per cent
II	171	
III	119	

TABLE V:A

ANALYSIS OF VARIANCE
OF GREGARIOUS SCORES OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	829	59		
Among Groups	210	2	105.0	9.63** Rejected
Within Groups	619	57	10.9	

TABLE V:B

TEST OF SIGNIFICANCE
AMONG MALE GROUPS ON GREGARIOUS SCORES

Group	Sum	Conclusion
I	118	Group III--Group I Significant at 1 per cent
II	148	
III	208	Group III--Group II Significant at 1 per cent

TABLE VI:A

ANALYSIS OF VARIANCE
OF STATUS ASPIRATION SCORES OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	571	59		
Among Groups	155	2	77.5	10.62** Rejected
Within Groups	418	57	7.3	

TABLE VI:B

TEST OF SIGNIFICANCE
AMONG MALE GROUPS ON STATUS ASPIRATION SCORES

Group	Sum	Conclusion
I	160	Group III--Group I Significant at 1 per cent
II	168	
III	232	Group III--Group II Significant at 1 per cent

TABLE VII:A

ANALYSIS OF VARIANCE
OF MASCULINITY VS. FEMININITY SCORES
OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	835	59		
Among Groups	276	2	128.0	13.1** Rejected
Within Groups	559	57	9.8	

TABLE VII:B

TEST OF SIGNIFICANCE AMONG MALE GROUPS
ON MASCULINITY VS. FEMININITY SCORES

Group	Sum	Conclusion
I	150	Group III--Group I Significant at 1 per cent
II	235	Group III--Group II Significant at 1 per cent
III	246	

TABLE VIII:A

ANALYSIS OF VARIANCE OF ARTISTIC
VS. PRACTICAL SCORES OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	1063	59		
Among Groups	302	2	151.0	11.29** Rejected
Within Groups	761	57	13.4	

TABLE VIII:B

TEST OF SIGNIFICANCE AMONG MALE GROUPS
ON ARTISTIC VS. PRACTICAL SCORES

Group	Sum	Conclusion
I	270	Group I--Group III Significant at 1 per cent
II	228	Group II--Group III Significant at 1 per cent
III	161	

TABLE IX:A

ANALYSIS OF VARIANCE OF LIKING TO USE MIND SCORES OF MALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	753	59		
Among Groups	119	2	59.5	5.36* Rejected
Within Groups	634	57	11.1	

TABLE IX:B

TEST OF SIGNIFICANCE AMONG MALE GROUPS ON LIKING TO USE MIND SCORES

Group	Sum	Conclusion
I	299	Group I--Group III Significant at 1 per cent
II	265	
III	230	

When these significant F ratios were found, the significant group was determined by applying the fiducial limits test. Tables V:B to IX:B represent the results of these analyses.

The most conclusive findings, as revealed by the analysis, were the differences found between Group I and Group III. In all of the scales Group II followed the same pattern as Group I; therefore, they were combined for the purposes of interpretation. In the discussion which follows, Group I and Group II combined will be compared with Group III.

The results of the statistical analysis present a consistent pattern in the personality differences found among the groups. The traits found to be significantly different not only form a reasonable syndrome within themselves, but, in addition, agree with the findings of previous studies. With respect to the male subjects, the musical group is high on the self-sufficient, artistic, and liking to use mind scales, and low on the gregarious, status aspiration, and masculinity scales.[3] In describing the esthetic man, Gordon Allport refers to the esthetic man's appreciation of form and harmony, his interest in the

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[3]Appendix A of this thesis contains the ten items on each of the scales where significant differences were found.

artistic episodes of life, his interest in persons rather than the welfare of persons, and his tendency toward "individualism and self-sufficiency."[4]

Previous studies have pointed out the high scores obtained by musical groups in the factor called intellectual introversion.[5] This refers to an independence of judgment in intellectual matters and would perhaps relate to both the liking to use mind and self-sufficient scales of this study. The high scores made by the musical males in the artistic scale is, of course, to be expected.

The finding in this study of significantly higher scores in the gregarious scale by males who preferred popular music is not a surprising one although neither Pinto[6] nor Schopler[7] found this to be the case. This variable is exclusively social in its reference and refers to the desire to be with others in preference to being alone. In the research of Pinto and Schopler, this factor was investigated under the title social extroversion vs. social intorversion, and no significance was found between musical and non-musical groups. In discussing gregariousness, how-

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[4]Gordon W. Allport, Personality (New York: Henry Holt and Company, 1938), p. 229.

[5]Schopler, loc. cit.

[6]Pinto, loc. cit.

[7]Schopler, loc. cit.

ever, Allport suggests that clues to gregariousness would include membership in social clubs, size of correspondence, liking for sports and popular music, and interest in current gossip.[8] Furthermore, the items on the gregarious scale of the Personality Research Inventory compare favorably with the items Flanagan found to be related to sociability on the Bernreuter Personality Inventory.[9] In addition, Flanagan found the items related to sociability to correlate positively with the original Bernreuter scales referred to as extroversion and dominance; these correlations were .95 and .87 respectively. Therefore, the finding of high scores by the non-musical males on the gregarious scale might have been anticipated on the basis of the findings of Allport and Flanagan but not on the findings of Pinto and Schopler.

Another consistency arises from the high scores obtained by the non-musical males on the status aspiration scale. The non-musical males have already been described as gregarious, and, therefore, sociable. The items on the status aspiration scale are also social in their orientation. Furthermore, the items on these two scales are comparable to the items found to be related to the social individual by both Allport and Flanagan. Moreover, musical

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[8]Allport, op. cit., p. 42.

[9]Factor Analysis in the Study of Personality, J. C. Flanagan, cited by Leonard W. Ferguson, Personality Measurement (New York: McGraw-Hill Book Company, Inc.), 1952, p. 183.

males were found to be significantly higher on the artistic scales whereas non-musical males were significantly higher in the opposite trait labeled practical. The picture, then, of the musical male as impractical, not gregarious, and less masculine is not inconsistent with a relatively lower status aspiration than the non-musical male.

It was first pointed out by Terman and Miles that cultural and artistic factors would increase the femininity score of a male.[10] This fact was born out in this study, for the masculinity scores of non-musical males were significantly higher than musical males. It is interesting to note that Fenley found this to be the case, but Pinto did not. Of course, one is dealing here with different tests each measuring a particular personality factor, and perhaps differences of this kind may be expected to occur.

It may be pertinent at this point to compare the findings of this study with those of Fenley who used the Minnesota Multiphasic Personality Inventory to measure the personality factors of his subjects.[11] In Fenley's study, four scales were found to be significantly higher in the musical male group, general deviancy, masculinity-femininity, schizophrenia, and hypomania. It is safe to say that

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[10] L. M. Terman and C. C. Miles. Sex and Personality (New York: McGraw-Hill Book Company, Inc., 1936), p. 349.

[11] Cf. ante, pp. 10-14.

the findings of Fenley are consistent with the findings in this study. The factor of masculinity-femininity has already been discussed. The picture of the musical male as something of a deviant may readily be derived from this study for a composite of the traits would describe him as less masculine, less gregarious, lower in status aspiration, and artistic rather than practical. The finding of Fenley of high scores in schizophrenia and hypomania do not conflict with any results of this study, for these scales are not present in the inventory used in this study. It could be pointed out, however, that a schizophrenic would very likely be solitary, have low aspiration, be self-sufficient in terms of his mental life, would like to use his mind, and would tend to be impractical and less masculine.

In summary, the personality characteristics of the musical male appear to show a very consistent pattern of traits emerging from these studies. Enough studies have now been completed to provide some direction for further investigation. With respect to the musical female, however, a summary of previous studies does not reveal as consistent a pattern as is present in the musical male. It will now be pertinent to examine the female groups of this study in order to determine whether or not any consistent pattern may be evident.

Analysis of the female population. Tables X:A to XV:A contain the essential steps in the analyses of variance of three groups of female subjects. Tables X:B to XV:B summarize the results obtained from the test of significance to determine which of the three groups were superior to the other two on each of the six scales in which significant differences among groups were found. These tables reveal that the musical female had high scores in the scales labeled tolerant of ambiguity, self-sufficient, belief in over-all group values, artistic vs. practical, and liking to use mind, but the group had low scores in the gregarious scale. The first point to be noted is the similarity between the musical males and the musical females. Significant scores were obtained on four of the same scales for both groups: self-sufficient, artistic vs. practical, liking to use mind, and lack of gregariousness. When one considers the fact that only six scales were found to be significantly different between musical females and non-musical females, it is rather striking for four of the significant scales to be common to both the musical male and musical female groups.

Therefore, the traits found common to both musical male and musical female groups, were as follows:

(1) self-sufficient,

(2) artistic vs. practical,

(3) liking to use mind, and

TABLE X:A

ANALYSIS OF VARIANCE
OF TOLERANT OF AMBIGUITY SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	997	59		
Among Groups	125	2	62.5	4.09* Rejected
Within Groups	872	57	15.3	

TABLE X:B

TEST OF SIGNIFICANCE
AMONG FEMALE GROUPS ON TOLERANT OF AMBIGUITY SCORES

Group	Sum	Conclusion
I	244	Group I--Group II Significant at 1 per cent
II	178	
III	189	Group I--Group III Significant at 5 per cent

TABLE XI:A

ANALYSIS OF VARIANCE
OF SELF-SUFFICIENT SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	1139	59		
Among Groups	237	2	118.5	7.50** Rejected
Within Groups	902	57	15.8	

TABLE XI:B

TEST OF SIGNIFICANCE
AMONG FEMALE GROUPS ON SELF-SUFFICIENT SCORES

Group	Sum	Conclusion
I	210	Group I--Group II Significant at 1 per cent
II	139	
III	117	Group I--Group III Significant at 1 per cent

TABLE XII:A

ANALYSIS OF VARIANCE
OF GREGARIOUS SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	801	59		
Among Groups	230	2	115.0	11.5** Rejected
Within Groups	571	57	10.0	

TABLE XII:B

TEST OF SIGNIFICANCE
AMONG FEMALE GROUPS ON GREGARIOUS SCORES

Group	Sum	Conclusion
I	98	Group II--Group I Significant at 1 per cent
II	167	
III	190	Group III--Group I Significant at 1 per cent

TABLE XIII:A

ANALYSIS OF VARIANCE OF BELIEF
IN OVER-ALL GROUP VALUES SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	370	59		
Among Groups	59	2	29.5	5.40* Rejected
Within Groups	311	57	5.5	

TABLE XIII:B

TEST OF SIGNIFICANCE AMONG FEMALE GROUPS
ON BELIEF IN OVER-ALL GROUP VALUES SCORES

Group	Sum	Conclusion
I	210	Group I--Group III Significant at 1 per cent
II	180	Group I--Group II Significant at 5 per cent
III	162	

TABLE XIV:A

ANALYSIS OF VARIANCE OF ARTISTIC
VS. PRACTICAL SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	913	59		
Among Groups	250	2	125.0	10.8** Rejected
Within Groups	663	57	11.6	

TABLE XIV:B

TEST OF SIGNIFICANCE AMONG FEMALE GROUPS
ON ARTISTIC VS. PRACTICAL SCORES

Group	Sum	Conclusion
I	275	Group I--Group II Significant at 1 per cent
II	209	
III	177	Group I--Group III Significant at 1 per cent

TABLE XV:A

ANALYSIS OF VARIANCE OF LIKING TO USE MIND SCORES OF FEMALE GROUPS

Source of Variance	Sum of Squares	df	Mean Square	F
Total	589	59		
Among Groups	121	2	60.5	7.38** Rejected
Within Groups	468	57	8.2	

TABLE XV:B

TEST OF SIGNIFICANCE AMONG FEMALE GROUPS ON LIKING TO USE MIND SCORES

Group	Sum	Conclusion
I	313	Group I--Group II Significant at 1 per cent
II	261	
III	247	Group I--Group III Significant at 1 per cent

(4) non-gregarious.

The trait found among the non-musical males but not among the non-musical females was:

(1) status aspiration.

The traits found among the musical females but not among the musical males were:

(1) tolerant of ambiguity and

(2) belief in over-all group values.

Tolerant of ambiguity and belief in over-all group values are difficult to understand as present in the musical female group and absent in the musical male group. Allport suggests the liberal and progressive person as tolerant, interested in art and poetry, and relatively free from prejudice and misinformation.[12] The items on both the tolerant of ambiguity and belief in over-all group values scales point in this direction; thus, it would not be inconsistent for these two factors to be common among the same group of individuals. Therefore, it may be suggested that an expansion of this study to include more subjects might reveal these two factors as present in the musical male group.

The two scales which were significantly different between musical males and non-musical males but which were not significantly different between musical and non-musical

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[12]Allport, op, cit., pp. 430-31.

females were masculinity vs. femininity and status aspiration. The masculinity vs. femininity scale has no relevance for the female groups. With respect to status aspiration, this factor would not be expected to be significantly different between the musical female and non-musical female. The items on the status aspiration scale refer primarily to aspiration in the direction of a better job or position, and, females whether musical or non-musical would not be expected to indicate serious career aspirations.

Composite picture of a musical person. A composite picture of a musical person, based on the findings and interpretations of this study, then, would include the following factors: self-sufficient, belief in over-all group values, artistic, feminine, liking to use mind, and a lack of status aspiration and gregariousness. These factors occurring between the two groups, one male and the other female, suggest the description of the Socialized, Cultured Mind (Source Trait K) as discussed by Cattell. This type of personality would include the following traits:

(1) intellectual interest, analytical

(2) polished, poised, composed

(3) independent-minded

(4) conscientious, idealistic

(5) aesthetic and musical tastes, and

(6) introspective, sensitive.[13]

A wider ramification of these traits as noted by Cattell would indicate the following: greater resistance to suggestion, large vocabulary, inclination to study personalities, interest in current social problems, more interest in intellectual matters than in athletics (for their own sake), inclination to take the initiative and lead in group activities, and tendency to take "advanced" rather than conservative social views.[14]

A final point may be made. The subjects of this study were divided into groups on the basis of responses to a music preference test. The fact that the traits described have formed such a consistent syndrome when compared with other workers in the field speaks well for both the Keston Music Preference Test and the Personality Research Inventory. In this area of the relationship between musical tastes and personality factors, consistent findings such as the ones described in this study are both unexpected and welcome and support the suggestion that further research will be both challenging and rewarding.

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[13]Raymond B. Cattell. Personality (New York: McGraw-Hill Book Company, Inc., 1950, p. 64.

[14]Ibid., p. 65.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to distinguish personality factors which may influence persons in their preferences for a particular kind of music. The study was focused on personality differences among three groups of people who had indicated a definite preference for one of the following kinds of music, serious classical, serious popular classical ("pop concert"), or light concert ("dinner music") selections.

Three hundred and seventy college students provided data for the study. Each subject was administered two tests, the revised Keston Music Preference Test and the Personality Research Inventory. The former was used in the selection of the three groups to be studied. The test consists of sixty musical excerpts on tape recording, twenty groups of three selections each. The subject is asked to indicate which of the three selections he likes the best and which he likes the least. The kind of music preferred by each subject may be ascertained by counting the number of times he chooses each of the three kinds of music as "like best." In this manner, three groups of individuals were obtained based on the kind of music preferred.

The Personality Research Inventory was used to measure

the personalities of the three groups. The 252 items of this test are used in twenty-five non-overlapping ten-item scales, with two general items left over. The latter provide data about the sex and education of the subject. Raw scores obtainable on each of the scales range from 0-20.

Analysis of variance was used to determine whether or not significant differences were present among the means of the groups under investigation on any of the twenty-five scales. An attempt was then made to ascertain whether or not there were any consistent patterns of traits among the three groups. In general, the null hypotheses which are to be confirmed or rejected by these analyses propose that there are no significant differences in the means of the three groups under investigation. A typical null hypothesis in this study would be: there is no significant difference among the means of the three groups of males on the self-sufficient scale of the Personality Research Inventory.

The results of the statistical analysis present a consistent pattern in the personality differences found among the groups. With respect to the male subjects, the musical group had superior scores on the following scales: self-sufficient, artistic, and liking to use mind; this group had lower scores on the gregarious and status aspiration scales. This finding of high scores on the self-sufficient and liking to use mind scales was consistent with

earlier studies which found musical males to be intellectually introverted. Intellectual introversion refers to an independence of judgment in intellectual matters and relates to both the liking to use mind and self-sufficient scales.

The finding of significantly higher scores in the gregarious and status aspiration scale was not surprising, for it is consistent with the description of the social individual as discussed by both Allport and Flanagan. These two scales are socially oriented and the items relate to a social individual who has been described as liking to be with people, and having an interest in sports, current gossip, and popular music. Moreover, musical males were found significantly higher in the artistic scale whereas the non-musical males were higher on the opposite trait labeled practical. The picture, then, of the musical male as impractical, not gregarious, and less masculine is not inconsistent with relatively lower status aspiration.

With respect to the masculinity vs. femininity scores, previous studies have pointed out that cultural factors would increase the femininity score of a male. Thus, the finding on the masculinity scales was anticipated.

Thus, the musical male may be described as being most like the esthetic individual as discussed by Allport. Such a person would be apt to be non-gregarious, intellectually introverted, and rather artistic and feminine. The

non-musical male would have tendencies similar to the social individual, one who likes to be with people, who is interested in sports, and who partakes of a minimum of intellectual and esthetic interests.

In a similar fashion, the scores obtained on the twenty-five scales of the three female groups were subjected to analysis of variance. Previous studies have not revealed as consistent a pattern for the female as for the male. The analysis, however, revealed musical females to be significantly higher on the scales labeled tolerant of ambiguity, self-sufficient, belief in over-all group values, and liking to use mind; whereas significantly lower scores were found for this group in the gregarious scale. The similarity between the high scores of the musical males and of the musical females is at once apparent. Significant scores were obtained on four of the same scales for both male and female musical groups: self-sufficient, artistic, and liking to use mind, and non-gregarious. With only eight of the twenty-five found to be significant for all the groups, a similarity on four scales for musical males and females could hardly have been anticipated.

Status aspiration was the only trait found among the non-musical male but not among the non-musical female. This scale refers to occupational or career aspiration, and it therefore could hardly have been expected to distinguish the

musical female from the non-musical female, for status aspiration, in a career sence, is not a vital consideration among females.

The traits found among the musical female but not among the musical male were tolerant of ambiguity and belief in over-all group values. These two scales are difficult to interpret as present in the musical female and absent in the musical male. The traits, however, have been found to exist, together with the other four, among individuals described as being of the liberal and progressive type. It was suggested, therefore, that a larger population of subjects might indicate these traits to be present among musical male subjects.

The two scales which were significantly different between musical and non-musical males but which were not significantly different between musical and non-musical females were masculinity vs. femininity and status aspiration. Since both of these scales are interpreted as not having relevance for the female groups, no significant difference would be expected to occur between two groups of females, whether musical or not.

A composite picture of the musical person, as indicated by this study, would include high scores on such scales as self-sufficient, belief in over-all group values, artistic, and liking to use mind, with low scores on such

scales as gregarious, masculinity, and status aspiration. These factors, appearing together among the individuals composing the musical male and musical female groups of this study, suggest the description presented by Cattell of the Socialized, Cultured Mind, and, therefore, are consistent in forming this pattern.

The results of this study, then, are consistent within themselves and concur with the findings of previous studies. Thus, a body of consistent results is accumulating, and it may be suggested that further studies in the area will undoubtedly continue to develop this field according to the principles and spirit of scientific tradition.

The following seven major conclusions of this study may now be listed:

1. Musical males were significantly higher than non-musical males on the self-sufficient, liking to use mind, and artistic vs. practical scales.

2. Non-musical males were significantly higher than musical males on the gregarious, status aspiration, and masculinity vs. femininity scales.

3. Musical females were significantly higher than non-musical females on the self-sufficient, artistic vs. practical, tolerant of ambiguity, belief in over-all group values, and liking to use mind scales.

4. Non-musical females were significantly higher

than musical females on the gregarious scale.

5. Traits found among both musical male and musical females were self-sufficient, artistic vs. practical, liking to use mind, and non-gregarious.

6. The trait found among the non-musical males but not among the non-musical females was status aspiration.

7. The traits found among the musical females but not among the musical males were tolerant of ambiguity and belief in over-all group values.

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COMPLETE LISTINGS OF ITEMS

OF THE EIGHT SCALES FOUND TO BE SIGNIFICANT

Tolerant of ambiguity

Plus item.

Assuming the odds were appropriate in each case, which would you rather bet on?

(Y) Something that is about fifty-fifty.
(N) An almost sure thing.

Minus items.

Do you like to keep regular hours and to run your life according to an established routine?

Is it hard for you to sympathize with a person who is always doubting and unsure about things?

Are you in favor of a very strict enforcement of all laws, no matter what the consequences?

Would our thinking be a lot better off if we would just forget about words like "probably," "approximately," and "perhaps?"

Do you mind working on a problem when you do not expect a clear-cut and definite answer?

Do people who seem unsure and uncertain about things make you feel uncomfortable?

Do you find it nearly impossible to get along with someone who is always changing his mind?

Do you like to have a place for everything and everything in its place?

Do you mind things being uncertain and unpredictable?

Self-sufficient

Plus items.

Which sort of teacher would you rather have?

(Y) One who neglects you and leaves you to your own devices.
(N) One who continually watches you and makes suggestions.

Do you like to do your planning alone, without suggestions from or discussions with other people?

How can you usually solve a problem better?

(Y) By studying it out alone.
(N) By discussing it with others.

When you must make a number of decisions in a comparatively short time, how would you rather make them?

(Y) Alone.
(N) With the help of others.

Do you like to work alone?

Does it bother you to have some one offer you advice when you didn't ask for it?

Minus items.

If you had to carry through some project how would you rather work?

(Y) With a committee of able, interested people.
(N) On your own, with one or two assistants to follow you?

Does it help you to discuss a problem with others before coming to a decision?

Do you often feel that you must discuss something you have read before you will really understand or remember it?

If you have to learn about something, how would you rather do it?

(Y) By class discussion.
(N) By reading a book on the subject in your own time.

Masculinity vs. femininity

Plus items.

Do you enjoy keeping in good physical condition?

If you could earn as much either way, which kind of work would you prefer?

(Y) That of an engineer.
(N) That of a social science teacher.

If you could be equally successful at either, which would you rather be?

(Y) A parachute jumper.
(N) An actor (or actress).

If you could be equally successful at either, which would you rather be?

(Y) A truck driver.
(N) A choir director.

Minus items.

On social questions, which are you regarded as?

(Y) Soft-hearted and idealistic.
(N) Tough and practical.

If you could be equally successful in either job, which would you rather be?

(Y) A schoolteacher.
(N) A weather observer.

If you could do either equally well, how would you rather work?

(Y) Guiding young people seeking careers.
(N) Managing a manufacturing concern.

If you could be equally successful at either, which would you rather be?

(Y) A florist.
(N) An athletic coach.

Masculinity vs. femininity (con't)

Which would you rather do?

(Y) Take a bath.
(N) Take a shower.

If you could be equally successful at either, which would you prefer to be?

(Y) A hairdresser.
(N) A forester.

Belief in over-all group values

Plus items.

Should we pass a law requiring every car or truck over twelve years old to be kept off of all public roads?

How would you rather die?

(Y) Defending your country.
(N) Avenging your family's honor.

Would you be willing to be governed by a legislature in which over half of the delegates were not American?

Would you support a movement to unify the various world religions into one body?

Should the various states revise their laws so that one body of law would be applicable all over the country?

Minus items.

How should we determine our import tax (tariff) rates?

(Y) High enough to prevent foreign competition with our own products.
(N) Low enough to provide maximum income to the government.

Which is more deserving of loyalty?

(Y) A small group of friends whom you know well.
(N) A larger group whom you do not know personally.

Do you believe war production should be encouraged if that is the only way to prevent a depression?

Should we worry about our own country and let the rest of the world take care of itself?

Which do you think would be the better way to handle the racial question in this country?

(Y) Permanent segregation.
(N) Complete intermarriage

Gregarious

Plus items.

If you could do either equally well, which would you rather paint pictures of?

(Y) Groups of people.
(N) Landscapes without people in them.

Which kind of a life would you prefer?

(Y) A YMCA (or YWCA) secretary.
(N) An artist.

If you could be equally successful in either job, which would you rather be?

(Y) A business office manager.
(N) An architect.

Do you enjoy the variety of humor in the usual radio or TV comedy show?

Minus items.

How would you prefer to spend an evening?

(Y) Doing something by yourself.
(N) At a dull party.

Which would you prefer?

(Y) To eat your lunch alone.
(N) To eat your lunch with a group of people.

Assuming you could earn as good a living either way, how would you rather do it?

(Y) As a musician.
(N) As a certified public accountant.

How would you rather spend a free afternoon?

(Y) In an art gallery.
(N) At a game of cards.

Which would you rather be?

Gregarious (con't)

(Y) An expert amateur rifle marksman.
(N) An expert amateur basketball player.

To which of these would you like more prominent space given in newspapers?

(Y) Explorers.
(N) Leading athletes and record breakers.

Artistic vs. practical

Plus items.

If you could be equally successful at either, which would you rather be?

(Y) A producer of plays.
(N) An appliance-store owner.

Which is more important to you?

(Y) How something looks.
(N) How well it works.

Are you more sensitive than most people to the artistic quality of your surroundings?

Which would you rather read?

(Y) A well-written piece of fiction.
(N) A military or political history.

Does poetry convey any more meaning to you than prose?

Minus items.

If you could do either, which would you rather do in your spare time?

(Y) Make pictures photographically.
(N) Paint pictures in oil, watercolor, etc.

Which would you rather listen to on the radio?

(Y) News reports.
(N) Symphonic music.

Which would you rather have around you?

(Y) Purely functional colors.
(N) Many bright colors.

Are you considered to be a practical person?

If you could do either, which would you rather do in your spare time?

(Y) Learn a foreign language.
(N) Learn to play a musical instrument.

Liking to use mind

Plus items.

Which part would you rather have in a play?

(Y) Adlai Stevenson.
(N) Harry Truman.

Which would you rather do?

(Y) Try to solve riddles and other puzzles.
(N) Play a game requiring good control of hand and eye.

Do you enjoy reading and thinking about such topics as what are the most valuable things in life, what is life all about, what are people here on earth for, why are some things beautiful, etc.?

Are you inclined to analyze the motive of others?

Do you enjoy thinking hard?

Minus items.

If you disagree with another person, which are you inclined to do?

(Y) To seek the most agreeable compromise with the least fuss.
(N) To argue out the ultimate nature of the difference in value, principle, or policy.

Are you frequently surprised by the behavior of people whom you know well?

Which would you rather do?

(Y) Use a giant computer to solve problems.
(N) Devise a new kind of giant computer.

Which would you rather be?

(Y) A politician.
(N) A lawyer.

Which would you rather read a book about?

(Y) Geography.
(N) Philosophy.

Status aspiration

Plus items.

Other things being equal, would you prefer the job of a life insurance salesman to that of a farmer?

Would it please you a lot to have your name appear in the society column of a large newspaper?

Which would you rather be?

(Y) Conductor of the New York Symphony Orchestra.
(N) A member of a neighborhood orchestra.

Other things being equal, which would you rather have in a mate?

(Y) Someone able to impress people socially,
(N) Someone able to give interesting intellectual companionship.

In marriage, which sort of wife or husband do you think is to be preferred?

(Y) One who can achieve prestige, commanding admiration from others.
(N) One who is fundamentally a homemaker or provider.

If you had expected to go, would you be angry if you weren't invited to an important social event?

Minus items.

Which would you prefer in a mate?

(Y) Someone who is artistically gifted.
(N) Someone who can achieve prestige socially.

If you could be successful either way, would you rather be an air raid warden than a political organizer?

Would you mind going into debt in order to achieve your ambitions?

Which job would you rather have?

(Y) One that you find very absorbing.
(N) One that is not so interesting, but that other people think is more important.

APPENDIX B

TABLE XVI

SUMMARY OF F RATIOS OF THE TWENTY-FIVE SCALES

Scale	F Ratio	
	Males	Females
Insightful	2.49	1.93
Free-floating anxiety	1.24	. . .
Self-accepting	. . .	. . .
Tolerant of frustration	1.73	1.06
Tolerant of ambiguity	2.19	4.08*
Compulsive	2.45	2.50
Impulsive	1.33	1.56
Altruistic	. . .	. . .
Talkative	2.05	. . .
Self-sufficient	6.83*	7.50**
Gregarious	9.63**	11.50**
Aggressive	. . .	. . .
Attitude toward work	1.34	. . .
Foresight	1.67	1.23
Belief in individual freedom and responsibility	. . .	. . .

*Significant at the 5 per cent level, tabled ratio = 4.10

**Significant at the 1 per cent level, tabled ratio = 7.10

TABLE XVI (continued)

Scale	F Ratio	
	Males	Females
Belief in over-all group values	2.98	5.36*
Social conscience	1.82	. . .
Status aspiration	10.62**	. . .
Masculinity vs. femininity	13.06**	1.22
Artistic vs. practical	11.29**	10.78**
Spiritual vs. material	. . .	. . .
Progressive vs. conservative	3.06	2.58
Liking to use mind	5.36*	7.38**

*Significant at the 5 per cent level, tabled ratio = 4.01

**Significant at the 1 per cent level, tabled ratio = 7.10