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The Bernreuter personality inventory and neuropsychiatric disabilities

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SCHOOL OF EDUCATION

Thesis

THE BERNREUTER PERSONALITY INVENTORY
AND NEUROPSYCHIATRIC DISABILITIES

Submitted by

Robert J. McCarthy
(B.S. in Ed., Boston University, 1943)

In partial fulfillment of requirements
for the degree of Master of Education

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First Reader: William C. Kvaraceus, Associate Professor of Education
Second Reader: Elmer B. Mode, Professor of Mathematics
Third Reader: J. Wendell Yeo, Professor of Education
Gift of R.J. McCarthy
School of Education
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The writer expresses sincere appreciation to the members of the faculty who have shown interest in the academic progress of the writer and have made this paper possible: to Dr. William C. Kvaraceus for the direction he has offered in all educational and professional pursuits and in accomplishing this research; to Professor Elmer B. Mode for the individual instruction he has given concerning the statistical design of this study; to Dr. J. Wendell Yeo for guiding the writer into the field of Research and Measurement.
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the writer's training of research and research.
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- Natural reading of the page appears to be discussing various topics related to the Second World War, veterans, and personality. The page seems to be part of a report or an analysis regarding the impact and personality traits of those who served in the Second World War.
CHAPTER I
STATEMENT OF THE PROBLEM AND JUSTIFICATION

Introduction

Today, with measurement of personality an integral part of most testing programs and with the acute necessity for a valid method of differentiating between the thousands of veterans with structural or functional disabilities as compared with those whose disabilities are psychogenic in origin, the need for an instrument which actually measures what it purports to measure is paramount. The advocates of the projective techniques of personality evaluation state that they are meeting this need. However, the global procedures of objective personality evaluation are sufficiently complicated and time consuming as to make their universal use impractical, at this time. The more popular use of non projective, group testing as a method of personality measurement necessitates an instrument of unquestionable validity. Such an instrument must yield valid results for the specific situation in which it is used. Until personality test validation studies are available for specific evaluation purposes, the users of personality tests must accept the general interpretations of
CHAPTER I

STATEMENT OF THE PROBLEM AND INTERPRETATION

Introduction

Together with measurement of personality as integral part of your concept and with the concepts necessary for any theory of differentiation between the dimensions of personality with emphasis on important and theoretically important differences and their meaning. The key for an integrated approach to personality measurement is the concept of the personality as the key concept for measurement of personality. The main difference between measurement of personality and measurement of performance is the need for a person to make his own judgments. The major difference between the theories of personality measurement is the need for a person to make his own judgments. The major difference between the theories of personality measurement is the need for a person to make his own judgments.
personality tests as being equally applicable to the specific situation in which they are interested.

Purpose of this Study

The principal purpose of this study is to examine and analyze the B1N and F1C scales of the Bernreuter Personality Inventory to determine their effectiveness in measuring neurotic tendency in male veterans of World War II.

Justification for this Study

The justification for this study is based on three problems posed by psychologists interested in the personality evaluation of veterans: (1) the acute need for a valid instrument to measure personality traits of the increasing population of neuropsychiatric veterans, (2) the general need for validity studies of all existing instruments of personality evaluation and (3) the specific need for such a study of the Bernreuter Personality Inventory due to its popular though controversial use.

Extensive literature and courses of study made available during the war brought to the collective mind of the general public the idea that many of the healthy men who left home to fight for God and country would return as veterans, sick in mind and body. The necessity of helping these veterans to readjust to the complications of modern society has been accepted by a sympathetic public. However, the vast number
Personality tests are part of daily applications to the specific...

The principal purpose of this study is to examine and...

Invention to determine their effectiveness in measuring...

Invention for this study...

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of veterans in need of psychiatric guidance is probably well beyond the average lay persons expectations and the potential value of an instrument for detecting those who are emotionally maladjusted may be suggested by the following report by Greer Williams, 1/ special consultant to the Veterans Administration.

The living veterans of World War I and II total around 18,000,000. Nearly 525,000 of them are drawing pensions for neuropsychiatric disability, meaning they have some kind of mental or nervous disorder. Half of the patients in Veterans Administration hospitals are there for neuropsychiatric reasons.

It's likely to get more before it gets less. VA psychiatrists estimate the present hospital load of 50,000 'NP' patients will rise to a peak of 200,000 in 1975, judging from the experience after World War I. They also figure from a survey of 'NP' pension cases in one eastern state, that perhaps 50 per cent from World War II would benefit from an occasional visit to a psychiatrist - without going to a hospital.

Today's case load of veterans with neuropsychiatric disabilities is sufficiently pressing to give rise to considerable thought to a means of detecting those who will benefit from psychiatric guidance. The need for a valid instrument of personality evaluation to meet the potential neuropsychiatric case load is an obvious criterion for the justification of this study.

The felt need for studies of the validity of group tests of personality posed by psychologists interested in the

1/Greer Williams, "Are You Insane? Well Don't Fret; The Answer Is No", Army Times (February 1, 1947) 26: 9.
of a report on Green, William R. for a secret committee to the Senate.

Administrative

The following are some of the reports made by the Senate on the above-named persons.


personality evaluation of veterans is based on empirical phenomena. However, their problem is not unique in the field of personality testing, for many test authorities have voiced their opinion of the questionable value of personality tests. Thus the second justification for this study lies in the general need for personality test validation as stressed by Traxler:1

Probably the greatest single need in personality measurement at the present time is the need for extensive studies of the validity of existing instruments, for very few such tests can be confidently recommended for general school (or other group) use until there is more evidence than is now available that they actually measure what they purport to measure.

The specific need for a validation study of the Bernreuter Personality Inventory is raised by those who use this questionnaire extensively, yet question the duplicity of its scales and the value of the time consumed in its scoring. The final justification for this study is to be found within its results for this study should yield objective evidence that will help to clarify an understanding of the personality traits measured by the Bernreuter Personality Inventory and the most valuable technique of securing these measurements.

The specific need for a validation study of the Revised Personality Examination Inventory to detect psychoneurotic reactions and other deficiencies in personality characteristics was discussed in the previous section. The findings of this research have been presented in the inventories and the procedures for interpreting them have been illustrated. The validation study has been conducted by psychologists and psychiatrists who have experience in the field of personality testing. The results of the study show that the Revised Personality Examination Inventory is a reliable and valid instrument for detecting psychoneurotic reactions in individuals.

The revised version of the inventory includes additional items that were not present in the original version. These items were added to improve the accuracy and reliability of the test. The revised inventory has been found to be more effective than the original version in detecting psychoneurotic reactions.

The findings of the validation study have been presented in the form of statistical analyses and graphs. These analyses show that the revised inventory is more effective than the original version in detecting psychoneurotic reactions. The results of the study have been presented in the form of tables and figures that illustrate the performance of the revised inventory.

The revised inventory has been found to be a useful tool for psychologists and psychiatrists who are interested in detecting psychoneurotic reactions in individuals. The inventory has been found to be a reliable and valid instrument for detecting psychoneurotic reactions in different populations.
CHAPTER II
REVIEW OF THE RESEARCH AND DESCRIPTION
OF THE SAMPLE OF THIS STUDY

Reviewing the Literature of
General Personality Evaluation

This investigation of the literature is restricted to reports concerning the non projective techniques of personality evaluation for it is within this area that the Bernreuter Personality Inventory is to be found. A review of the present status of group administered personality questionnaires will also yield information of value in determining the comparative worth of the Bernreuter Personality Inventory. In general most of the existing instruments of personality evaluation have been the object of greater condemnation than praise. It is relatively impossible to find a single instrument of personality measurement that is acceptable to all its users. The opinions of the majority of experts in the area of objective personality assessment are such that little optimism may be developed concerning the use of the instruments now available. Over a period of years the users of objective type personality tests have observed the interpretations of
CHAPTER II
REVIEW OF THE RESEARCH AND DESCRIPTION
OF THE METHOD OF THE STUDY

Reviewing the Literature of
General Personality Evaluation

The investigation of the literature is motivating to
report on previous research on personality assessment or
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Recent work of the existing instruments of personality
evaluation have been the subject of greater concentration than
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the items. The opinion of the majority of experts in the area of
personality assessment measurement and such files little optimism
available. Over a period of years the case of personality type
isolates. Personality tests have undergone the interpretation of

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personality tests to be at variance with the known behavior of examinees when the tests have been interpreted with reference to their standard directions. On this subject Traxler has written:

The appraisal of personality seems to have a special fascination for nearly everyone. Consequently this field has been, almost since the memory of man, an unusually productive hunting ground for assorted quacks and charlatans.

It was not until recent years that the proponents of objective evaluation turned their attention to the field of personality, but, once test making was begun in this area, personality testing seemed to become open sesame for nearly everyone who could formulate a questionnaire about likes and dislikes, worries, dreams, and suppressed wishes. The result has been that the few worthwhile instruments which have been prepared have been obscured by many tests of inferior quality.

The abundance of paper and pencil type group tests referred to by Traxler is probably largely responsible for the unsavory position in which standardized personality tests have fallen. Undoubtedly many of these instruments have merit and if used judiciously can supply test users with objective evidence of real value. Unfortunately today's market is glutted with tools masked under the guise of personality tests, inventories, questionnaires and rating scales. It is interesting to note that this preponderance of materials has been developed within the past two decades yet have added little to the need for valid instruments of

benignity leads to be of assistance with the known defects in
examinations. The same facts have been incorporated with refer-
ence to clinical standards in the context of the

The essential difference in personality seems to have a
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yet I have watched little to the day for really understanding of

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with substantial (from 1945) 99.44 at
personality measurement since 1930. In that year Menninger wrote, "No satisfactory means of measuring driving force or emotional possibilities, have yet been devised." Today there is little evidence to suggest that Menninger's statement would not fit the majority of the existing instruments of personality evaluation. For the most part the rapid qualitative advances that have been made in the fields of intelligence and achievement testing have been met quantitatively in the field of personality testing, with the earlier techniques of personality measurement refined, but not necessarily improved. In consequence Freeman has written;

Tests of personality have not yet been found as serviceable for routine use by the teacher or school administrator as have tests of mental ability. Their meaning in terms of every day behavior is not so clear. Many of them have turned out to be fairly reliable when given under favorable conditions, but their validity has to be largely taken on faith, and their significance judged on the basis of clinical experience.

Traxler voices the same opinion and continues with, "One obstacle to the measurement of personality is that there


Psychological measurement since 1950. In fact, very few people have ever seen or heard of "the latest psychological tests," they have been confined to the research laboratory. Today there is little evidence to suggest that psychological measurement is making any more contributions to the social sciences than have been made in the fields of biology and test theory. Since the field of personality testing, with the exception of projective methods, has no extensive research literature to support its findings, the meaning of personality measurement remains to be determined.}

is not general agreement on a definition of personality, or on the number and nature of the traits of which it is composed." Perhaps there lies within Traxler's observation the very core of the problem of objective personality evaluation. Personality traits are usually propounded on the behavior characteristic of a type of personality. However, a lack of standardization of the types of personality makes it relatively impossible for the test constructors to design their tests with respect to a personality classification acceptable to all the users and interpreters of personality tests. As Cobb\(^1\) has pointed out, the typing of mankind has been an accepted evil of each generation. Classifications have arisen with each school of psychology, and the Behaviorists, Gestaltists, Pavlovians, Freudians and Sheldonians have failed to produce universal categories or even a basis for universal classification. If Traxler's statement on the obstacle to the measurement of personality is as important as it appears to be, and if Cobb's observations represent the present status of personality classification, then the development of worth-while instruments of personality evaluation must await a universally acceptable method of personality classification. In the meantime confusion reigns

The neglect of recognition of a definition of personality so far from any study of the effects of which it is concerned. However, a lack of recognition of the importance of personality makes it difficult to adapt new and necessary techniques to personality testing. The need for new and necessary techniques of personality testing has been so great that the development of new and necessary techniques or personality testing has been so extensive. A lack of recognition of the importance of personality testing has so far been

The neglect of recognition of a definition of personality so far from any study of the effects of which it is concerned. However, a lack of recognition of the importance of personality makes it difficult to adapt new and necessary techniques to personality testing.
concerning the real value of present day instruments of personality evaluation.

The low repute in which the majority of these instruments are held has been objectively demonstrated by Kornhauser.\textsuperscript{1/}

He sent out a questionnaire regarding psychometric devices to reputable American psychologists asking, "In the field of personality testing how satisfactory or helpful for present practical use do you consider Personality Inventories and questionnaires (such as those of Bernreuter, Bell, Humm-Wadsworth, etc.)?" Kornhauser’s five category responses yielded the following results from his returns:

1. highly satisfactory............... 01.5 per cent
2. moderately satisfactory.......... 13.5 per cent
3. doubtfully satisfactory.......... 36.0 per cent
4. rather unsatisfactory........... 33.0 per cent
5. highly unsatisfactory.......... 16.0 per cent.

Such a range of opinion, with only fifteen per cent of the established psychologists placing reasonable faith in the available instruments of personality measurement necessitates that further objective evidence of their validity be made available if they are to continue to be used in general testing programs. The value of this study rests in the fact that personality tests are used frequently, and that the many constructors of personality instruments have found a lucra-

\textsuperscript{1/}A. Kornhauser, "Replies of Psychologists to a short questionnaire on Mental Test Developments, Personality Inventories, and the Rorscharch Test", \textit{Educational and Psychological Measurement} (1945) 5: 6.
The following regression shows the relative importance of

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The regression model captures the relationship between personality traits and various outcomes. The coefficients indicate the magnitude of the effect of each variable on the outcome. The model suggests that the most important factors include...
tive market for the fruits of their labor. The naive acceptance of these instruments by less objective persons than Kornhauser's subjects, and the knowledge that these same tests flourish in the popular field of personality evaluation, have prompted considerable research in the general field of personality test validation. For a direct attack and a thorough summary of this work, the reader is referred to Ellis' article on this subject. His concluding statement based on his far reaching study causes one to wonder what sins have been committed in the name of objective personality evaluation. For he states:

We may conclude, therefore, that judging from the validity studies on group administered personality questionnaires thus far reported in the literature, there is at best one chance in two that these tests will validly discriminate between groups of adjusted and maladjusted individuals, and that there is very little indication that they can be safely used to diagnose individual cases or to give valid estimations of the personality traits of specific respondents. The older, more conventional, and more widely used forms of these tests seem to be, for practical diagnostic purposes, hardly worth the paper on which they are printed.

Reviewing the Literature pertaining to the Bernreuter Personality Inventory

Of the many and diverse tools of personality measurement, the Bernreuter Personality Inventory is the most popular,

1/Albert Ellis, "The Validity of Personality Questionnaires", Psychological Bulletin (September 1946) 43: 425.
The new method for the analysis of these factors has been developed and tested. The new method is based on the use of a new set of indices that correlate closely with the personality characteristics of the individual. The new method has been found to be more accurate and reliable than the previous methods. The new method has been applied to a variety of personality traits and has shown that it is effective in predicting behavior in a wide range of situations.
most widely used instrument in the field of personality measurement. Traxler\(^1\) writing on personality testing states, "The best known and doubtless the most widely used controlled-answer questionnaire for adolescents and adults is the Bernreuter Personality Inventory." In like manner, Greene\(^2\) reviewing the Bernreuter Personality Inventory writes, "This is doubtless the most widely applied test of its kind." To these statements may be added the results of Pallister's\(^3\) canvass of 74 American psychologists, members of the American Psychological Association specializing in measurement research, which lends objective evidence to the opinions of the experts. Pallister's questionnaire regarding psychometric techniques resulted in proof that the Bernreuter Personality Inventory was the best known test in his canvass. However, popularity \textit{per se} does not make for the greater validity of an instrument. Also, this multi-trait questionnaire is "one of the older, more conventional and more widely used forms"\(^4\) which has been the object of as much if not more adverse comment than the less popular tests of its kind. The intensity with which these

\(^1\)Arthur E. Traxler, op. cit., p.103.


\(^4\)Albert Ellis, loc. cit.
The "trait" approach to personality measurement, in which criteria are established and a test is constructed to measure these traits, is particularly useful here. The present study was designed to test the validity of the famous "16 Personality Factor" test developed by Cattell (1957). The test consists of a large number of items, each of which is scored on a 1 to 5 scale, with 1 indicating extreme disagreement and 5 indicating extreme agreement. The final scores are obtained by summing the responses to each item, with the total score ranging from 1 to 50. The test is intended to assess personality traits such as extraversion, neuroticism, and openness to experience.

The present study was conducted with a sample of 100 students from a large university. The participants were administered the "16 Personality Factor" test and also completed a series of questionnaires designed to assess their personality traits. The results of the study indicated that the test was highly reliable and valid, with correlations ranging from 0.7 to 0.8 between the test scores and the questionnaire scores. The results also suggest that the test is sensitive to differences in personality traits among individuals, and that it can be used to assess personality traits in a variety of settings.

In conclusion, the present study provides further evidence for the validity of the "16 Personality Factor" test as a measure of personality traits. The results support the use of this test in a variety of settings, and suggest that it may be a useful tool for assessing personality traits in both clinical and research settings.
criticisms have been made may be derived from reports such as those entitled, "What the Bernreuter Personality Inventory Does Not Measure,"¹/ and "Personality Traits by Fiat."²/

Yet this instrument has withstood the assaults of the critics for a great many years and continues to be the most widely used test in the field of personality evaluation, though many instruments have been composed and published since Bernreuter edited his inventory. There must be some just cause for its continued use. Some factors must be operating to keep the Bernreuter Personality Inventory in its relative place of prestige, as concerns objective personality testing.

Since its inception the Bernreuter Personality Inventory has had a ready market. Its initial success was undoubtedly traced to the economical need which Bernreuter attempted to meet in measuring more than one personality trait with a single test. Then too, its scales were assigned names, the connotation of whose traits were familiar to the psychologists and educators who hoped to evaluate personality. The interest in and use of the Personality Inventory gained momentum as industrial counselors and vocational advisors

¹/R. A. Brotemarkle, "What the Bernreuter Personality Inventory Does Not Measure", Journal of Applied Psychology (October, 1933) 17: 559-563.

alternative names may be used in the field of psychological testing.

Yet, the limitations of the Minnesota Multiphasic Personality Inventory (MMPI) and other personality test instruments are well known. There must be some inherent limitations inherent in the use of the Minnesota Multiphasic Personality Inventory.

Since the introduction of the Minnesota Multiphasic Personality Inventory, the initial success was problematic due to the economic need for a test with a broad appeal to psychologists and clinical practitioners. The single Jept. Then for the first time did something similar to the Brazil, a collective of young artists were familiar to the psychologists. The interest in the use of the Minnesota Multiphasic Personality Inventory sometimes as an integral part of the course of study and vocational guidance.
joined the ranks of the psychologists and school administrators who were attempting to ascertain the validity of the assumption that the discrepancies between intelligence and achievement test scores and job efficiency could be traced to non-intellectual personality factors. Unfortunately the Bernreuter Personality Inventory was not the exegesis of personality evaluation, and when its practitioners failed to find significant differences in its use, and when psychologists would not agree to the interpretations regarding its results, the Personality Inventory became the object of severe criticism.

Due to its originality in design and the contrary opinions concerning its worth, the Bernreuter Personality Inventory has been the subject of considerable research. Approximately 150 published studies have appeared in the literature since its inception. Such a quantity of individual research projects makes their individual enumeration impractical, and beyond the scope of this report. For a more detailed discussion and summary of these published studies the reader is referred to Super's publication which reviews the Bernreuter research, and gives the source and author of each study. Many of these original articles from which Super

Joining the ranks of the pioneers who were attempting to measure the abilities of the vocational aptitude and temperament factors through the correlation between intelligence and occupational aptitudes, this study aimed to explore the relationship between personality traits and success in various occupations. The study sought to investigate the extent to which the personality inventory was not the exclusive tool for understanding personality expression and how it distinguished effective and ineffective jobs. It also examined the relationship between temperament and the personality inventory and the personality and temperament inventory.

A detailed analysis of the factors associated with each personality trait would provide a comprehensive understanding of the relationship between personality and success in different occupations.
quotes have been analyzed for their value as concerns the totality of this report. A synthesis of Super's findings shows that:

1. The Bernreuter Personality Inventory has been used in almost every imaginable type of research project in which personality factors play an important part.

2. The results of these studies add to the total information concerning this instrument but do not determine definite situations in which it may be used.

3. For the most part, though profile patterns of trait responses are suggested by the authors as being indicative of one thing or another, significant differences are rarely reported.

4. The Personality Inventory definitely does not measure as many traits as it is purported to measure, and the use of more than three keys is economically and logically unsound.

5. The superiority of Flannagan's or Bernreuter's keys has not been established.

6. Validation studies reporting statistically significant differences and reliable coefficients of correlation using acceptable objective criteria, must continue to be made before the true validity of the Personality Inventory can be accepted with confidence.
Doctors have been trying for thirty years to overcome the tendency of this report. A percentage of superior findings

show that

The Helsinki Personality Inventory has been seen to affect every imaginable type of research project in

which personality factors play an important part.

In the review of these studies no to the total finds

section concerning the instrument and to not determine

activities related to which it may be near

on the most part show profile patterns of many

responses of the subjects of the various as profile
tests of one kind to another, similarly different

the overall results.

The Helsinki Personality Inventory correctly does not mean

same as many traits as it is important to measure and

the use of more than five years in economical and

 foregoing means.

6. The superiority of the measures of personality's tests

has not been established.

6. Attribute studies reporting additionally similar

factor differences and tentative correlations of core

relation with separate objective criteria, and

continue to be made before the same ability of the

Personality Inventory can be assessed with confidence.
Description of the Bernreuter Personality Inventory

In 1931 Robert G. Bernreuter, a candidate for the degree of Doctor of Philosophy at Stanford University, culminated his doctorate requirements with his dissertation, "The Valuation of a Proposed New Method for Constructing Personality Tests." The new method advanced by Bernreuter was one in which four of the most valid and reliable personality tests, each designed to measure a separate personality trait, were combined in a single instrument for optimal efficiency. This instrument is known today as the Bernreuter Personality Inventory. This 75 item, self administering, 30 minute, questionnaire was originally intended to measure four distinct personality traits by scoring the single test with four separate scales, each representative of a distinct personality trait. The scales were designated: (B1N) a measure of neurotic tendency, (B2S) a measure of self-sufficiency, (B3I) a measure of introversion - extroversion, and (B4D) a measure of dominance - submission.

In 1935 Flannagan applied Hotelling's method of


Description of the
Hemispheric Personality Inventory

In 1953, Herbert E. Hendler, a candidate for the degree of Doctor of Philosophy at the University of California, published "The Hemispheric Personality Inventory," which is a procedure for assessing personality traits. The inventory was designed to measure the interaction of the right and left hemispheres of the brain. The inventory is based on the idea that the right hemisphere processes functions related to creativity, intuition, and spatial reasoning, while the left hemisphere processes functions related to logic, language, and analytical thinking.

The inventory consists of two parts: the "Right-Head Test" and the "Left-Head Test." Each test is designed to measure the activity of a specific hemisphere of the brain. The "Right-Head Test" measures the activity of the right hemisphere, while the "Left-Head Test" measures the activity of the left hemisphere.

The inventory is administered using a series of questions and tasks that are designed to assess the activity of each hemisphere. The results of the inventory are used to determine the relative balance of the two hemispheres and to identify areas of strength and weakness.

Principal Components to the crude scores of 305 eleventh-grade boys on Bernreuter's four scales, and as a result of further research developed two new scales. These scales, (F1C) a measure of confidence in oneself, and (F2S) a measure of sociability, are claimed by Flannagan to account for 98 per cent of Bernreuter's four factors.

Bernreuter has reported coefficients of reliability calculated by the split-half technique, when corrected, to range from .83 to .88 for the different scales, the mean being .86.

The validity coefficients of correlation were obtained by correlating the Bernreuter scales with the original tests from which the Personality Inventory was constructed. The corrected coefficients range from 1.00 to .99, indicating that the traits measured by the Bernreuter Personality Inventory are identical with the traits which have been measured by previously validated tests.

The Inventory may be scored for any or all six scales and compared by percentile rank with six norm groups:

1. college men
2. college women
3. high school boys
4. high school girls
5. adult men
6. adult women.

The coefficient of correlation found between the B1N, and F1C scales reported as .95, coupled with Flannagan's
The Invention may be scored for any or all of the six scales:

<table>
<thead>
<tr>
<th>Scale:</th>
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<td>Coffee money</td>
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<td>High school</td>
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The correlation of correlation found between the M.I.I. and M.C. scores was reported as .65, statistically significant.
statement that the F1C scale accounts for 78 per cent of
the total variance of Bernreuter's four factors has led to
considerable controversy concerning the wisdom of using one
of these scales in preference to the other. 1/ Statistical
evidence does not indicate the superiority of one scale over
the other. The only general agreement to the question appears
to be that time and effort are wasted in scoring for both of
these scales for the same examinee.

The basic aim of this study is to determine whether the
BIN or the F1C scale is most valid in measuring emotional
adjustment and whether it is practical to use either or both
of these scales in the testing of male veterans of World
War II.

Description of the Sample

The sample employed in this study consists of 93 male
veterans of World War II who entered the services of the
United States in perfect mental and physical condition.
Following an indeterminate period of active duty in the armed
forces, each veteran received an honorable discharge, or a
medical discharge resultant of neuropsychiatric disorders.
Upon further examination a degree of disability for neuro-

1/Robert G. Bernreuter, Manual for the Personality Inventory,
Stanford University Press. Stanford University, Calif., 1935.
In the report of the O.C. we come to the conclusion that the infection of the region's total research team is due to the presence of a new strain of the virus. The evidence collected during the investigation of the outbreak indicates that the virus is more contagious than previously thought. To date, the research team has developed a vaccine that is effective in preventing the spread of the virus. However, further research is needed to fully understand the virus and develop effective long-term solutions.

The report also highlights the importance of public health measures in controlling the spread of the virus. It is crucial to maintain strict hygiene practices, wear masks, and practice social distancing to reduce the risk of transmission. The research team is also working on developing additional tools and technologies to aid in the fight against the virus.
psychiatric conditions was arrived at for each veteran. The total sample of 93 members is composed of:

1. thirty-one veterans rated 10 per cent disabled
2. thirty-one veterans rated 30 per cent disabled
3. thirty-one veterans rated 50 per cent disabled.

Each veteran was individually administered the Bernreuter Personality Inventory on the date of his appointment for counseling with advisors of the Advisement and Guidance Section of the Boston Regional Office of the Veterans Administration. The tests were scored and the raw scores converted to percentile ranks using the male adult norm.

The outside criteria employed in this investigation consists of veterans rated for degree of neuropsychiatric disabilities. However, ratings must not always contain the weaknesses of human judgment and bias. The ratings employed in this study are resultant of an evaluation of unlimited information of social, occupational, educational, pre-service, service, post-service, and medical histories of servicemen. The values of the percentage of disability arrived at by rating boards composed of professional representatives of the medical and legal professions, refer to the amount of limitation of ability inflicted upon the veteran without any
CHAPTER III

PROCEDURES

Random Sampling of the Criterion Population

The method of validating a test or inventory against outside criteria is ordinarily the most objective and acceptable means of determining the validity of the instrument under investigation. That the outside criteria must be valid and above reproach in order that the experimental factor may be evaluated adequately is perhaps the first axiom of experimental research.

The outside criteria employed in this investigation consists of veterans rated for degrees of neuropsychiatric disabilities. However, ratings must not always contain the weaknesses of human judgement and bias. The ratings employed in this study are resultant of an evaluation of unlimited information of social, occupational, educational, preservice, service, post-service, and medical histories of servicemen. The amounts of the percentage of disability arrived at by rating boards composed of professional representatives of the medical and legal professions, refer to the amount of limitation of ability inflicted upon the veteran without any

- 19 -
CHAPTER III

PHILOSOPHY

Range of emphasis of the culture population

The concept of affluence is based on increased participation of the concept of affluence and acceptance criteria to achieve the ability of the improvement and acceptance criteria to achieve the ability of the improvement under investigation. That the acceptance criteria must be valid and prove important in other areas. That the improvement leads to being the time frame of experiment.

mental need.

The acceptance criteria emphasis on the investigation

concepts of advanced musical or visual arts are conceptualized. However, opportunity and arts opportunity were conceived of human development and their

mental needs. In this sense, the importance of serving the improvement of

information of society, communication, technology, broadcasting, service's best-seller, and modern techniques of entertainment.

The focus of this document to address the implications of the

mental and legal implications related to the concept of

introduction of political influence upon the culture matrix and
regard to the type of psychoneurosis. The amount of limitation of ability is determined through the use of objective standards for evaluating purposes.

The sample of this study is composed of members possessing an extreme amount of the personality traits purportedly measured by the BlN and FLG scales of Bernreuter's Personality Inventory. Such a sample representative of the population of veterans rated for neuropsychiatric disabilities offers an ideal standard for testing the validity of the scales under investigation. Not only have the members been rated for a neuropsychiatric condition, but the degree of the disability conferred upon each member has been arrived at, through standard, comparable criteria. This factor allows for a refinement of the conventional methods of validity studies and also offers techniques of neoteric significance.

However, valid outside criteria is not in itself enough to insure the reliability of the results of a study such as this. In order to apply validly the statistical techniques of this investigation the problem of random sampling of the outside criteria was considered to be of paramount importance.

Ordinarily the research worker cannot examine every member of the universe under consideration. Therefore he must make some assumptions from a sample of subjects typical of that universe. This method represents no real problem, for logical speculation and empirical statistics show that a
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sample will yield a great amount of information about the parent universe. The fundamental aims of the theory of sampling are twofold:

1. the estimation of certain constants of the parent universe, from the sample,

2. the determination of the degree of confidence that can be placed in these estimates in terms of probability.

However, "all mathematical sampling theory is based finally on the assumption of random selection, and any application of this theory is valid only to the degree that the samples employed have been so selected."

Thus, the estimations applicable to the universe must be resultant of research in which the selection of an individual from the universe is such that each member of the universe has an equal chance of being selected, and that a predetermined number of such members shall compose the sample of that universe.

Such simple random sampling is not always possible. Sometimes, the universe may be divided into strata and then a portion of the sample is taken from each stratum. Therefore, if the design of experimentation necessitates some purposive principle of selection, "it is almost always

---

samples will yield a great amount of information about the population. The fundamental type of the sample is chosen.

If the estimation of confidence of the sample is known, the accuracy of the estimate can be increased in some property.

However, the estimation of confidence of the sample must be determined in practice to which the selection of the estimator.

The estimation of how many samples make of the sample

Then if the selection of the estimator is taken from each population, and from the same group.

Sometimes, the estimator may be given into equal, and then

IMPRINTED (ENGLISH) 1927, XILL 300 -

possible .... to provide for random selection and thus to utilize sampling theory in interpreting our results. "1/ Consequently a method of stratified sampling would allow for random selection within a series of dichotomy of a particular universe.

The Chi Square Test

If one desires to discuss the extent of the relationship between this manifold classification and some other variable, the data can be set out in the form of a table to find the amount of association between the variables under consideration. This method of manifold classification is a simple extension of dichotomy, and the table an extension of fourfold 2 by 2 contingency tables. 2/ Such a table will allow for the application of the Chi - Square Test (\(X^2\)), to determine whether certain experimentally obtained results differ significantly from those to be expected by "chance"; or whether obtained results diverge from some hypothesis to such an extent that the hypothesis should be accepted or rejected. The \(X^2\) method does not yield a coefficient but it does provide a measure of the probability that two sets


THE GUT SYMPOSIUM

If one desires to achieve the goals of the symposium, it may be necessary to analyze the amount of association between the variables under consideration. The method of analysis of association is similar to that of association of proportions, and the table size is determined. If $X^{(2)}$ is a contingency table, such as a table with row and column headings for the presentation of the data, then the method of analysis of association applies. In the analysis of the data in the contingency table, one must consider the contingency table in order to explore the relationships between the variables. The $X^2$ method does not imply a coefficient of correlation, but may indicate a measure of the relationship that may be useful. This analysis is continued in the next section.
of data are dependent or independent.

In computing $x^2$ from a contingency table, the independence values ($f'_i$), or theoretical Frequencies must first be obtained. The theoretical frequency to be expected in any cell is determined by multiplying the number of frequencies in the corresponding row of that cell by the number of frequencies in the corresponding column of that cell, and dividing by the total frequency of the contingency table. The difference between the observed ($f_i$) and expected values in each cell is squared and divided by the respective independence value of each cell. Chi-square equals the sum of these quotients by formula: $\chi^2 = \sum \frac{(f_i - f'_i)^2}{f'_i}$

This value of Chi-square represents the total amount of discrepancy between hypothesis and observation, and allows for the amount of assurance with which the hypothesis may be accepted or rejected.

Through the use of Chi-square tables it is possible to determine the probability with which the obtained value of Chi-square could occur solely by chance. However, entry into a Chi-square table necessitates two statistics; the value of

\[
\frac{s(i, j) - i^2}{i^2} \Rightarrow sX
\]
Chi-square and the number of degrees of freedom (m), the value of which changes with each set of data.¹/

Sometimes, the researcher is not as much concerned with the amount of relationship between two or more variables as he is with the difference between them. In discussing the association existent between variables, large samples are invariably investigated to predict universal associations. Often, the interpretation of differences between parameters of sub-universes is predicated upon small sample theory, and represents acceptable statistical technique for the basic aims of the theory of sampling are alike regardless of the size of the sample. However, though the statistical theory of small samples is generally applicable to large samples, the converse is not true.

The statistical theory of large samples allows that the sample values of a parameter will be grouped about the true value, and will differ by comparatively small values from that value. The use of the normal probability integral tables based upon the Gaussian curve is then made possible. This is not true of small samples, for their distribution tends to be leptokurtic in form, approaching a Pearsonian type III curve, thus eliminating directly transferable assumptions concerning position, disposition and other

measurements to the parameters of the universe.

The t Test

Consequently, Fisher's \( t \) ratio, first introduced in modified form by a statistician under the nom de plume "Student" is applied to test the difference between the means of small samples.\(^1\)

The fiducial limits or the level of confidence within which a statistic may be rejected or accepted in small sample statistics is based upon the "degrees of freedom" which is usually one less than the number of measurements in the sample. This statistic is located in the denominator of the \( t \) ratio.

In small sample theory the \( t \) ratio is most frequently applied to determine the probability that a difference between means is not the result of chance factors alone, and that the difference is significant at a predetermined fiducial limit.

Values of \( t \), indicative of real differences at the most usable levels of significance have been prepared by Fisher, and are sufficiently accurate to allow for precise interpolation of intermediate probabilities. An examination of these tables shows that the degrees of freedom range from one to thirty, thus suggesting that the normal probability

The T-Test

Hypothesis testing is at the heart of inferential statistics. When we want to assess the difference between the means of two groups, we use a hypothesis test. The T-Test is particularly useful when dealing with small samples and when the data is normally distributed.

The T-Test involves the use of a statistic called the T-score, which is calculated from the sample means and variances. The T-score is then compared to a critical value from the T-distribution to determine whether the difference between the means is statistically significant.

To conduct a T-Test, we first state our null hypothesis (H0) and alternative hypothesis (H1). The null hypothesis typically states that there is no difference between the means, while the alternative hypothesis proposes that there is a difference.

Next, we calculate the T-score using the formula:

\[ T = \frac{\bar{X}_1 - \bar{X}_2}{s_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \]

where \( \bar{X}_1 \) and \( \bar{X}_2 \) are the sample means, \( s_p \) is the pooled standard deviation, and \( n_1 \) and \( n_2 \) are the sample sizes.

Finally, we compare the calculated T-score to the critical T-value from the T-distribution table, based on the degrees of freedom and the chosen significance level. If the calculated T-score is greater than the critical T-value, we reject the null hypothesis and conclude that there is a statistically significant difference between the means.
integral table may be used effectively with samples larger than 31 in number.

Thus, the formula to test the significance of the difference between two means, of samples less than 31 in number, whose population variance is unknown is: 1/

\[ t = \frac{\bar{x}_1 - \bar{x}_2}{\sigma_{\bar{x}_1 - \bar{x}_2}} \]

and Fisher's t distribution with \( n = N_1 \neq N_2 - 2 \) when \( \bar{x}_1 \) and \( \bar{x}_2 \) are the means of the respective samples, and \( \sigma_{\bar{x}_1 - \bar{x}_2} \) is the estimated standard error of the difference of the means.

Whereas, the formula to test the significance of the difference between two means, of samples greater than 31 in number, whose population variance is unknown is: 2/

\[ t = \frac{\bar{x}_1 - \bar{x}_2}{\left(\frac{s_1^2}{N_2} + \frac{s_2^2}{N_2}\right)^{1/2}} \]

when \( t \) is normally distributed, and when \( \bar{x}_1 \) and \( \bar{x}_2 \) are the means of the respective samples, and \( \frac{s_1^2}{N_2} \) and \( \frac{s_2^2}{N_2} \) are the sample variances respectively, divided by the number of members of the inverse samples.

In general, Fisher's t distribution may be used for samples drawn from non-normal populations; however if the


2/Loc. cit.
In the formula to test the significance of the difference between the mean of two samples, the

\[ \frac{\bar{x} - \bar{y}}{s_{x-y}} = t \]

where \(\bar{x}\) and \(\bar{y}\) are the means of the two samples, and \(s_{x-y}\) is the standard deviation of the difference of the means. Whereas the formula to test the difference of the means is

\[ \frac{\bar{x} - \bar{y}}{s_{x-y}^2} = t \]

and where \(s_{x-y}^2\) is the standard deviation of the difference mean of the two samples.

In general, if parameters of the population may be assumed

\[ \frac{\bar{x} - \bar{y}}{s_{x-y}} = t \]

same variances, according to the formula of sample variance, sample variances are the same variances, according to the formula of sample variance.
samples are drawn from populations with different variances, i.e., if $\sigma_1^2 \neq \sigma_2^2$, the methods used above may be questioned. Thus, when comparing the means of samples it is often necessary to first determine whether the means of the samples under investigation are of the same universe with respect to their variance, or are of different universes.

The F Test

To estimate the significance of the difference between the variances of samples Fisher showed how the function of $z$ is distributed for pairs of random samples drawn from the same population.

G. W. Snedecor simplified Fisher's method and produced the $F$ test tables$^1$ (similar to those of $t$) to test the hypothesis that the samples drawn are from equally variable populations. The $F$ test does not deal directly with the difference between the standard deviations but rather with the ratio between the estimates of the true variances. The variance ratio may be defined by:$^2$

$$F = \frac{\sigma_1'^2}{\sigma_2'^2}$$


of the mean square error of the regression model. The test statistic is given by:

\[
F = \frac{\frac{s_{\text{res}}^2}{\nu}}{\frac{s_{\text{err}}^2}{\nu}}
\]
where $\sigma_1'^2$ always denotes the larger variance. If $F = 1$, then $\sigma_1'^2 = \sigma_2'^2$; thus, this is the test of the significance of the deviation of a given $F$ from one.

Analysis of Variance

Frequently in educational and psychological research, more than two groups of data are to be examined. To compare individually each group with another is a tedious and often a spurious operation. In such circumstances, Fisher's analysis of variance\(^1\) may be applied to any number of samples, to determine whether the samples are sufficiently different from one another to reject the hypothesis that they arose by random sampling of the same universe.

The basic proposition is that for any set of $r$ groups of $n$ cases each, we may, on the hypothesis that all groups are random samples from the same population, derive two independent estimates of the population variance, one of which is based on the variance of group means, the other on the average variance within groups. The test of this hypothesis then consists of determining whether or not the ratio ($F$) between these estimates lies below the value in the table of $F$ that corresponds to the selected level of significance.\(^2\)

Essentially, the F-test applied to between and within groups variance is an application of the t-test to all differences between means, simultaneously. If the difference as indicated by the F ratio is greater than can be attributed to

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\(^1\)E. F. Lindquist, op. cit., p. 87-179.
\(^2\)Ibid, p. 91.
where \( \alpha \) is the significance level of the test.

Thus, if \( \theta \) is the test of the significance of the deviation of a given mean from one

**Analysis of Variance**

Previously in experimental and psychological research, more

than two groups of data were to be examined. To compare

the difference, each group with another at a given point, a

specific test was applied. In order to determine, there are several tests

specific tests, but none to apply to the number of samples to

determine which of the samples are different, A test different from

one another to detect the hypothesis that any one of the

samples is the same or not.
chance fluctuations at a predetermined level of significance, it is known that one or more groups under investigation is atypical and is not a member of the parent universe. The F test does not signify that all methods differences are significant, but merely that the groups are not homogenous with respect to the differences of the method means.

The results of the F test determine the plausability of testing the individual differences. Application of the t test will then allow for the isolation of significantly different groups.

However, it must be understood that neither the F test or the t test determine the cause of the real differences. That the differences can not be explained away by chance is a statistical certainty but the factors operating to produce these real differences are not located through statistical technique.

In the final analysis, logical and empirical reasoning become the determiners of causation, though measurement offers the means of attack in the solution of psychological and educational research.
change in the rate of a pharmacological level of stimulation.

It is known that one or more hormones may influence the effect of a drug and not a member of the plasma membrane. A decrease does not simply start with working concentration the site of influence, but rather that the change was not homogeneous within the receptor to the differentiation of the receptor system.

The meaning of the test determines the feasibility of testing the individual difference. Against the test of the test will then allow for the reception of individual differences.

Moreover, it must be understood that if the test for a test does not achieve the cause of the individual difference. That the difference cannot be explained even by chance. As such, the difference can only be due to factors that are not based on chance and therefore are statistically significant.

In the field of health policy and management, these factors contribute to the search for solutions or就行了. The means of attack in the solution of pharmacological and other arguments serve.
CHAPTER IV
PRESENTATION OF DATA

Probabilities of Association

Pure random sampling of the criterion group was impossible, and its application would necessarily void the value of the degree of neuropsychiatric disability made available from the veteran universe. Thus, a parent universe, composed of three groups of veterans rated for varying degrees of neuropsychiatric disability was selected, as the criterion group. This universe became a manifold dichotomy of male veterans of World War II rated for one of the three most common degrees of neuropsychiatric disability; 10 per cent, 30 per cent and 50 per cent. Such purposiveness did not negate the technique of random selection for each group was considered complete when 31 consecutive veterans rated for the respective degree of psychoneurosis appeared for counseling. No predetermined principal of appointment scheduling was exacted other than the chronological order of the veteran's request for an appointment. The three groups of 31 members each, made up a total sample of 93 members. This composition allowed for the maximum benefits of the techniques of small sample theory yet yielded
CHAPTER VI
PRESENTATION OF DATA

Properties of Association

A random sample of 50 veterans was selected to meet the requirements for the present study. The sample was chosen from a population of 50 veterans. This composition allowed for the maximum

penalties of the receiving or small sample groups of veterans.
a parent universe of sufficient proportions to permit the application of large sample theory.

The form of the criterion group offered a single strata composed of three distinct stratum. By arranging the percentile ranks of the BlN and F1C scales into deciles, it is possible to prepare two contingency tables, one for each scale and the three stratum, representative of 10, 30, and 50 per cent disabled for neuropsychiatric conditions. By computing $\chi^2$ for each of these tables it is then possible to determine whether the three groups of veterans with varying degrees of neuroticism differ significantly with respect to their respective positions in the decile ranks of each scale.

In Table 1 the statistic appearing at the top of each cell is the observed or actual frequency ($f_i$); the figures in parenthesis represent the independence or theoretical values ($f'_i$).

In order to determine whether the three groups differ significantly in terms of probability with respect to their positions in decile rank on the BlN scale, it is necessary to compute $\chi^2$ by:

$$\chi^2 = \sum \frac{(f_i - f'_i)^2}{f'_i}$$

to yield $\chi^2 = 5.745$.

1/Elmer B. Mode, loc. cit.
The theory of the criterion group allowing a single figure

A comparison of three different methods. By examining the per-

centile ranges of the HIV and the same into separate, other for each scale

possible to produce two continuation tables, one for each scale

and the same criterion, representing data by computing X

geometric for nonparametric correlation. By computing X

for some of these figures if it seem possible to determine

whether the three groups of variables with varying degree of

nonparametric correlation significantly with respect to five reasons

the position in the scale tends to become.

In Table I the asterisk indicating the top of each

percentile represents the intersection of the 95th

percentile. Next, to determine the value of

\[ \frac{\hat{t} - \hat{t}}{\hat{t}} \leq \chi \]

To ensure that the distribution of the three groups differed

significantly in terms of properties with respect to their

percentile in terms of rank on the HIV scale it is necessary to

\[ \chi \]

where \( \chi \) is the variance of the variable.
Table 1  Comparison of Male World War II Veterans rated for Varying Degrees of Neuroticism and Percentile Ranks with respect to the B1N Scale of the Bernreuter Personality Inventory.

<table>
<thead>
<tr>
<th>Percentile Ranks</th>
<th>10 Percent Neuro-psychiatric</th>
<th>30 Percent Neuro-psychiatric</th>
<th>50 Percent Neuro-psychiatric</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>5</td>
<td>5</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>91</td>
<td>(7.000)</td>
<td>(7.000)</td>
<td>(7.000)</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>71</td>
<td>(6.000)</td>
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<tr>
<td>70</td>
<td>8</td>
<td>8</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>13</td>
<td>10</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>1</td>
<td>(10.333)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>93</td>
</tr>
</tbody>
</table>
Table I

<table>
<thead>
<tr>
<th>90 Percent</th>
<th>80 Percent</th>
<th>70 Percent</th>
<th>60 Percent</th>
<th>50 Percent</th>
<th>40 Percent</th>
<th>30 Percent</th>
<th>20 Percent</th>
<th>10 Percent</th>
<th>0 Percent</th>
<th>Percentage</th>
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<td>125</td>
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<td>155</td>
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<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
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<td>95</td>
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<td>65</td>
<td>75</td>
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<td>95</td>
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</tr>
<tr>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
<td>200</td>
</tr>
</tbody>
</table>

*Note: Data for varying degrees of separation and permanence rates with respect to the perceived importance of the performance expectancy.*
To evaluate \( x^2 \), it is necessary to enter a Table of \( x^2 \) with the \( x^2 \) value 5.745 and \( m \), the degrees of freedom. In this instance \( m \) equals \((4-1)(3-1)\) or 6. For \( x^2 = 5.745 \) and \( m = 6 \), \( P \) is approximately .42.

A probability of 0.42 is so large as to discredit entirely any hypothesis concerning the positive, causative relationship between rated per cents of severity of psychoneurosis and percentile ranks on the B1N scale.

In order to determine whether the three groups differ significantly in terms of probability with respect to percentile rank on the F1C scale, it is necessary to compute \( x^2 \) from Table 2. Again the observed or actual frequencies appear at the top of each cell, and the theoretical or independence values are enclosed in parenthesis.

By formula:

\[
\chi^2 = \sum \frac{(f_i - f'_i)^2}{f'_i}
\]

\( x^2 = 7.950 \). The degrees of freedom again equal 6. For \( x^2 = 7.950 \) and \( m = 6 \), \( P \) is approximately .25.

A probability of 0.25 means that there is insufficient evidence to support the hypothesis that the more severe the rated per cent of neuropsychiatric disability the higher the percentile rank of the F1C scale.

The probabilities of 0.42 and 0.25 for the B1N and F1C
To evaluate \( x \), it is necessary to select a table of \( x \) with
the values of \( \Delta x \). The \( x \)-value should be the nearest to the \( x \)-value of the function. In this
instance, we make use of the data given by

\[ s = \frac{3}{2} \text{ and } \frac{\Delta x}{x} = \frac{3}{2} \text{ (or } x \text{)} \]

So \( x = \frac{3}{2} \) is the approximate value of \( x \).

A property of \( 0.9 \) is to be used as to achieve

\[ \mu \] the objectives concerning the partitive numbers,

and between intersecting classes of the equal intervals.

percentile values on the M.I. scale.

In order to determine whether these three groups differ

significantly in terms of proportionality with respect to be-

\( s \) definitely rank on the M.I. scale, it is necessary to compute \( x \).

The table \( x \) gives the opening or central tendencies appear

from Table \( x \), from the opening or central tendencies appear

at the top of each cell, and the frequency or information

values are obtained in percentages.

\[ \frac{s}{x} \]

or \( \frac{3}{2} \) in this instance.

The \( x \)-value of the equal desired value

\[ x = 0.9 \]

for \( x \) in the distribution

A property of \( 0.9 \) means that the more severe

advantage to support the hypotheses that the more severe the

principle may change, can be made by the number of equal intervals,

percentile rank of the M.I. scale.

The property of \( 0.9 \) may be for the M.I. and M.L.
### Table 2: Comparison of Male World War II Veterans rated for Varying Degrees of Neuroticism and Percentile Ranks with respect to the FLIC Scale of the Bernreuter Personality Inventory.

<table>
<thead>
<tr>
<th>Percentile Ranks</th>
<th>10 Percent Neuro-psychiatric</th>
<th>30 Percent Neuro-psychiatric</th>
<th>50 Percent Neuro-psychiatric</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>91</td>
<td>(8.000)</td>
<td>(8.000)</td>
<td>(8.000)</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>71</td>
<td>(7.666)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>19</td>
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<tr>
<td>51</td>
<td>(6.333)</td>
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<tr>
<td>50</td>
<td>14</td>
<td>6</td>
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<td>27</td>
</tr>
<tr>
<td>1</td>
<td>(9.000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>93</td>
</tr>
</tbody>
</table>
Table 5 \(\text{Comparision of Male Work for II Age Class}^{*}\)  

\[ \begin{array}{cccc}
\text{Sample} & \text{50 Percent} & \text{20 Percent} & \text{10 Percent} & \text{Percentile} \\
\text{Total} & s & a & f & \text{Total} \\
16 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
19 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
22 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
25 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
28 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
31 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
34 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
37 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
40 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
43 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
46 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
49 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
52 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
55 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
58 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
61 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
64 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
67 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
70 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
73 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
76 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
79 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
82 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
85 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
88 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
91 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
94 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
97 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
100 & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} & \text{(000.3)} \\
\end{array} \]
scales respectively are of such magnitude as to allow for their respective $x^2$ values to occur approximately 42 and 25 times respectively by chance alone in 100 such tests. If the $x^2$ values indicated that either or both scales differed with respect to percentile rank and severity of neuroticism, it would have been necessary to apply Yates' correction for continuity, but since neither $x^2$ could be considered significant, the application of Yates' correction was considered impractical. 1/

A logical extension of the results of applying the $x^2$ test to the data of this study intended that the scale of greater $x^2$ significance be investigated, further. In this instance, neither $P$ was found to be significant. Consequently, further investigation of either scale was determined on the basis of frequency of use, in order to establish the validity or lack of validity concerning its continued use. Thus, the B1N scale 2/ was selected for further investigation, to determine the effectiveness with which it differentiates among groups of veterans rated for neuropsychiatric disabilities of varying degrees of severity; and between the total psychoneurotic group and the normal population.


2/ Donald E. Super, op. cit., p.113.
Differences between Variances

The simplest and perhaps most effective method of arriving at the solution of this problem was through the analysis of the variance of the scores of the three distinct samples of the parent neuropsychiatric universe, to determine whether they were actually heterogenous groupings, on merely members of a common aggregate. In this instance, the hypothesis that these were in fact three distinct sub-universe was considered tenable at the 5 per cent level of confidence. This pre-determined level was selected as one allowing sufficient latitude for the exactness with which the instrument under investigation was being tested because the B1N scale was designed to measure neurotic tendency on a single continuum, ranging from wholesome adjustment to emotional instability. The author has made no claim that this instrument will differentiate between varying degrees of neuroticism.

Table 3 depicts the distribution of raw scores for each of the three samples of this study.

Table 4 summarizes the results of the computation necessary in the analysis of the variance of the B1N scores of the groups rated 10 per cent, 30 per cent, and 50 per cent disabled for neuropsychiatric conditions.
Differences between Variance

The simplest and perhaps most obvious measure of variance is the square of the difference between the group means. To determine whether this is a common characteristic in the two sets of the same height samples of the variance of the scores of the three height samples of the

were essentially of an experimental commonplace in many respects, but for the purposes that this

were in fact those of a full-scale and reliable measure of the variance and for the

level new scores as one different measurement may

exceeding, with which the improvement may be of measure

past linear because the brain scores were getting to measure

verifying degrees of measurement.

Table 3 depicts the distribution of raw scores for each of

the three samples of each subject.

The increase in the variance of raw scores of the

extra 15% to be put over 50 percent and 80 percent of the

above for measurement conditions.
### Table 3

<table>
<thead>
<tr>
<th>Raw Scores</th>
<th>10 Percent Disabled</th>
<th>30 Percent Disabled</th>
<th>50 Percent Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>197</td>
<td>121</td>
<td>194</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>103</td>
<td>176</td>
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<td>65</td>
<td>77</td>
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<td>124</td>
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<tr>
<td>40</td>
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<td>20</td>
<td>51</td>
<td>103</td>
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<tr>
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<td>41</td>
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<td>18</td>
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<td>32</td>
<td>6</td>
<td></td>
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<tr>
<td>62</td>
<td>37</td>
<td>6</td>
<td></td>
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<td>64</td>
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<td>120</td>
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<td>72</td>
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<td>134</td>
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</tr>
<tr>
<td>196</td>
<td>207</td>
<td>170</td>
<td></td>
</tr>
</tbody>
</table>

| Total       | 1676                | 1039                | 90                  |
| Mean        | 54.06               | 35.52               | 2.90                |
| Grand Total | 2805                |                     |                     |
| Grand Mean  | 30.16               |                     |                     |
Table 4. The Analysis of Variance of the BIN Raw Scores of 10, 30, and 50 per cent Neuropsychiatric Groups

<table>
<thead>
<tr>
<th>Components</th>
<th>Degrees of freedom</th>
<th>Sums of squares</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>41097.88</td>
<td>20548.94</td>
</tr>
<tr>
<td>Within Groups</td>
<td>90</td>
<td>746106.32</td>
<td>8290.07</td>
</tr>
<tr>
<td>Total Group</td>
<td>92</td>
<td>787204.20</td>
<td></td>
</tr>
</tbody>
</table>

The variance of the group means was found to be 20548.94 and the average variance within the groups 8290.07. These values, considered to be two independent estimates of the population variance, yield a variance ratio to which can be applied Snedecor's F test;\(^1/\)

\[
F = \frac{\sigma_1^2}{\sigma_2^2}
\]

Thus, \( F = \frac{20548.94}{8290.07} = 2.478 \). For 2 and 90 degrees of freedom the value of F considered to be significant at the 5 per cent level of confidence is 3.10.\(^2/\)

Obviously the obtained value of F falling below the necessary 3.10 demands that the hypothesis that these are three distinct groups, be rejected. In terms of the BIN scores

\(^1/\)Elmer B. Mode, op. cit., p.14.

\(^2/\)G. W. Snedecor, op. cit., p.65.
The variance of the group means was found to be 0.0204. This indicates the variance within the groups, and the square root of this value was determined to be 0.1428. This value of the variance within the groups can be compared to the variance between the groups, which can be calculated by applying equation (2.9): \[ F = \frac{s_{w}^{2}}{s_{b}^{2}} \]

For the data and 60 degrees of freedom, the critical value at a 5% level of significance is 2.70. The variance between the groups was calculated as:

\[ F = \frac{0.0204}{0.02} = 1.02 \]

Comparing this value to the critical value of 2.70, the null hypothesis can be rejected. Therefore, the variance between the groups is statistically significant. This is consistent with the data presented in the table.
obtained by the members of the neuropsychiatric group rated for varying degrees of severity it must be assumed that they are in fact all members of a homogenous universe.

The test (and B1N scale) author does not submit that the "Neurotic Tendency" scale is capable of differentiating between neurotic individuals of varying degrees of severity. However, he does contend that the scale will select neurotics from the normal population. A test of this fundamental claim should yield proof of the real validity or lack of validity of this instrument, and should meet the requirement of significance at the one per cent confidence limit, for the sole purpose of this scale is to select neurotics from the normal population.

Differences between Means

Student's t test\(^1\) allows for the test of the difference between means of small samples. In this instance the total neuropsychiatric universe composed of 93 members, and Bernreuter's normative group composed of 300 members shall constitute the samples of this test.

As N increases, Student's t distribution approaches the normal distribution. Thus, in testing the difference of the means of the above samples whose population variance is unknown, the formula (appearing on page 40) and the normal distribution tables are employed.

\(^1\)R. A. Fisher, op. cit., p.125
applied by the members of the department at the rate
for any given degree of severity, it may be assumed that the
rate of the members of a homogeneous group
are in fact the members of a homogeneous group.

The fact (and the same) supposes not small that the
men's total means of any given degree of severity. However, we
have concluded that the scale which affects members from the
society's population is a test of the fundamental claim that
is the best known of all the tests of the acknowledge of the
society's population, and which meets the demand of the
interests of the one year certain conditions that must be
borne of the scale is to select members from the normal population.

Difference: Between Means

Let us consider the difference between means of equal samples in the interest of the total

variations of members of the same group or the same

heterogeneity's interesting among members of 200 members.

Let us consider the samples of the test.

We have a frequency spectrum of the populations of the

interest of the population's interesting members. Therefore, the

mean of the members above, means population averages in

measurement of the members (superior to 50) and the normal

representation of the population.
The data representative of the first sample has been extrapolated from Tables 3 and 4, and the data representative of the second sample has been taken from Bernreuter's Table of Percentile Norms appearing in the Appendix.

By formula:

\[ t = \frac{X_1 - X_2}{\sqrt{\frac{s_1^2}{N_2} + \frac{s_2^2}{N_1}}} \]

\[ t = \frac{-30.16 - (-63.9)}{\sqrt{\frac{92^2}{300} + \frac{79^2}{93}}} \]

\[ t = \frac{33.74}{\sqrt{95.32}} = \frac{33.74}{9.76} \]

to yield the value of \( t \) equal to 3.46. Referring to Fisher's Table of \( t \) for an infinite number of cases at the 1 per cent confidence limit, \( t = 2.576 \).

The obtained \( t \) of 3.46 very definitely meets the stringent requirements of this test at this level of confidence and thus proves real differences existing between the normal population and the neuropsychiatric universe; differences

1/Elmer B. Mode, loc. cit.

The data representing the first sample have been extracted from Table 3 and the data representing the second sample have been taken from Table 3. The percentile values appearing in the Appendix.

\[
\frac{\bar{X} - \bar{X}}{\frac{1}{S_1^2} + \frac{1}{S_2^2}} = f
\]

\[
\frac{1.320 - 1.016}{\frac{0.04}{0.06} + \frac{0.04}{0.06}} = f
\]

\[
\frac{\mu_1 - \mu_2}{\sigma_1} = \frac{\mu_1 - \mu_2}{\sigma_2} = f
\]
that can not be explained away by chance fluctuations; differences that do exist and exceed the 1 per cent level of significance. That is, the obtained value of $t$ is such that the probability of the difference between the means of the neuropsychiatric universe and the normal population is so large that it will occur approximately 999 times in 1000 such samples.

An investigation has shown that the majority of group administered personality tests, questionnaires and rating scales are held in low respect by most authorities in the field of personality assessment. The Bernreuter Personality Inventory, the most popular questionnaire of its kind, falls within the broad category of group administered personality tests and consequently has been the subject of considerable criticism and research concerning its use. A goodly amount of this criticism has centered about the value of using both Bernreuter's scale of "Tension Tendency" and Flemming's scale of "Confidence in oneself", in scoring the Personality Inventory. A few authorities suggest the use of both scales. The majority of the rest deplore the time wasted in scoring both scales because they state that these scales measure the same personality traits. However, they are divided in opinion as to which scale is the most valid, for the E.M. scale
That can not be explained on any cause of fluctuation other than that due to the natural variability of the data. The data suggest that the observed values of the mean of the series of 1000 samples are not consistent with the expected value.
Summary

An investigation has shown that the majority of group administered personality tests, questionnaires and rating scales are held in low repute by most authorities in the field of personality measurement. The Bernreuter Personality Inventory, the most popular questionnaire of its kind, falls within the broad category of group administered personality tests and consequently has been the subject of considerable criticism and research concerning its use. A goodly amount of this criticism has centered about the value of using both Bernreuter's scale of "Neurotic Tendency" and Flannagan's scale of "Confidence in oneself", in scoring the Personality Inventory. A few authorities suggest the use of both scales. The majority of the rest deplore the time wasted in scoring both scales because they state that these scales measure the same personality traits. However, they are divided in opinion as to which scale is the most valid, for the B1N scale
CHAPTER VI

LIMITATIONS OF THE BANTU

Summary

In an investigation into the nature of the personality characteristics and traits
of the Bantu, the main focus is on the development of the personality traits
in the rural areas. The investigation reveals that the personality traits of the
Bantu people are deeply rooted in the culture and tradition of their ancestors.

The study also highlights the role of society in the development of personality
traits. It shows that the Bantu people are influenced by their cultural norms and
values. The study concludes that society plays a significant role in shaping the
personality traits of the Bantu people. However, it also notes that the influence of
some personality traits may vary depending on the context in which they are
expressed.
is the preferred scale by many authorities although others restrict themselves to the F1C scale. As a result of this diversity of opinion, these two scales were investigated to determine whether either scale is valid for selecting extreme psychoneurotics from the normal population.

Ninety-three male veterans of World War II rated for neuropsychiatric disabilities of varying degrees of severity were randomly selected as the criterion group for this investigation. Percentile ranks on the BIN scale were combined into 5 unequal classes for three divisions of this criterion group, into 31 members rated 10 per cent disabled, 31 members rated 30 per cent disabled and 31 members rated 50 per cent disabled for neuropsychiatric conditions. This dichotomy made possible an estimation of the probability that high percentile ranks on the BIN scale, indicative of emotional maladjustment, are associated with severity of neuroticism. Through the use of the Chi square technique it was determined that $x^2 = 5.745$; for 6 degrees of freedom this $x^2$ value equals approximately .42 in terms of probability.

In like manner $P$ was computed for percentile ranks on the F1C scale and severity of neuroticism. Chi square equalled 7.950, and $P = .25$. Since neither $P$ was considered significant, the BIN scale was selected for further investigation due to its most frequent use, in the objective evaluation of neuroticism.
the previous section by many authorities in the area. As a result of this generalization of opinion, these two scales were invented to determine whether either scale is valid for selecting examinees by occupational aptitude tests. From the normal population,

which-kinds make negative or positive matches of aptitude scores?

In the occupational aptitude tests, two scales were invented for this purpose. The normal scale on the BIN scale was invented by occupational aptitude tests, and the normal scale on the other BIN scale was invented by occupational aptitude tests. These scales were developed by occupational aptitude tests, and the normal scale on the other BIN scale was invented by occupational aptitude tests. The normal scale on the BIN scale was invented by occupational aptitude tests, and the normal scale on the other BIN scale was invented by occupational aptitude tests. The normal scale on the BIN scale was invented by occupational aptitude tests, and the normal scale on the other BIN scale was invented by occupational aptitude tests.
By application of Fisher's technique of the analysis of the variance of BIN raw scores for the group rated 10 per cent disabled, 30 per cent disabled and 50 per cent disabled for neuropsychiatric conditions, it was possible to determine whether in terms of test scores, they were actually three distinct groups or whether they were really all members of a common aggregate population. The hypothesis that they were three distinct groups was considered tenable at the 5 per cent level of confidence. The resultant F of 2.478 demanded that this hypothesis be rejected.

The final test of the true validity of this scale rested in its ability to differentiate at the 1 per cent level of confidence between normal persons and persons manifesting an extreme degree of the trait purportedly measured by this scale. For purposes of this test, Bernreuter's normative sample of 300 members and the total veteran sample of 93 members rated for neuropsychiatric disabilities were selected. Student's t test of the differences between means was applied to the samples with a value of $t = 3.46$, which easily meets the requirements of this test at the predetermined level of confidence.
At the estimation of the school's economic status

The average of the school's economic status appears to be quite high. This indicates that the school is well-funded, and may have access to resources that are not available to other schools.

The economic status of the school is determined by a combination of factors, including the school's budget, the number of students, and the quality of the educational programs offered. The school's economic status is important because it can affect the quality of education that is provided to students.

In conclusion, the school's economic status is high, and this may have a positive impact on the quality of education that is provided to students. It is important for the school to continue to maintain this high level of economic status, as it is essential for providing the best possible education to students.
Conclusion

As a result of this investigation and the statistical techniques applied to the data compiled from the scores on the B1N and F1C scales of Bernreuter's Personality Inventory by male veterans of World War II rated for neuropsychiatric disabilities of varying degrees of severity, the following conclusions may be drawn:

1. Bernreuter's B1N scale, a measure of neurotic tendency, and Flannagan's F1C scale, a measure of confidence in oneself, evaluate the same personality trait or traits with relatively comparable validity. The undesirable extreme of this trait or fusion of traits is one which describes atypical behavior such as that of the nervous, emotionally unstable, neurotic individual.

2. High percentile ranks converted from raw scores on the B1N scale are not related significantly with severity of neuropsychiatric disability.

3. High percentile ranks converted from raw scores on the F1C scale are not related significantly with severity of neuropsychiatric disability.

4. There appears to be a greater (though not significant) trend towards an existing relationship between high percentile ranks on the F1C scale and severity of neuropsychiatric disability.
Conclusion

As a result of this investigation and the analysis of the records of the clients' casework, it is evident that the MM and PC scales of the Minnesota Multiphasic Personality Inventory are not as reliable as many other well-accepted methods of assessing personality. The following qualifications of various scores of seventeen, the following conclusions may be drawn:

1. Personnel who score high on the PC scale are relatively more prone to personality disorders. The nature of their personal problems is often associated with a complex of characteristics, including emotional instability, social maladjustment, and a lack of personal adjustment. These problems are often accompanied by an inability to establish a harmonious relationship with others.

2. Personnel who score low on the PC scale are more likely to have a stable personality. They are able to maintain a normal emotional equilibrium, and their personal problems are generally of a more transient and superficial nature. However, personality defects may still exist in some cases, and these personnel may require special attention and guidance to prevent the development of more serious problems.

3. Personnel who score high on the MM scale are more likely to have a neurotic personality. They are prone to emotional instability, social maladjustment, and a lack of personal adjustment. These problems are often accompanied by a complex of characteristics, including emotional instability, social maladjustment, and a lack of personal adjustment. These personnel are often more prone to develop neurotic disorders, and they may require special attention and guidance to prevent the development of more serious problems.

4. Personnel who score low on the MM scale are more likely to have a stable personality. They are able to maintain a normal emotional equilibrium, and their personal problems are generally of a more transient and superficial nature. However, personality defects may still exist in some cases, and these personnel may require special attention and guidance to prevent the development of more serious problems.
5. The BIN scale of the Bernreuter Personality Inventory is not capable of differentiating between groups of psychoneurotic individuals rated for neuropsychiatric disabilities of varying degrees of severity, when the test is administered, scored and interpreted according to its standard directions.

6. This scale is sufficiently refined as to allow for the selection of groups of neuropsychiatric individuals from the normal population at the 1 per cent level of confidence. Therefore, the continued use of the BIN scale, a measure of neurotic tendency, is not only justifiable but recommended in the field of personality evaluation.

Limitations of this Study and the Need for Further Research

To date, the majority of research studies in the fields of education and psychology has been limited to small sample theory thus including a greater margin of error than might otherwise be necessary. Usually the researcher is restricted to some method of selective sampling thus limiting the application of the findings of his research to a parent universe composed of identical elements possessed by his sample. This study is no exception. It is not the experimentum crucis in the field of objective personality evaluation. Its findings can not be made applicable to the
The final page of the manuscript is cut off, making it difficult to read.
total heterogenous universe. However, the results of this study can be applied to the personality testing of the population of 18,000,000 male veterans of World War II, with greater confidence than heretofore experienced.

Traxler,\[1/\] referring to the recent production of personality tests stated, "The result has been that the few worthwhile instruments that have been prepared have been obscured by many tests of inferior quality." This study has attempted to validate two scales of a single instrument of personality measurement. As such, this study barely scratches the surface of the problem of separating the few worthwhile instruments from many tests of inferior quality. However, this is a beginning; a beginning from which could be developed a systematic program of validity studies of the existing instruments of personality evaluation in order to determine which tests validly and reliably do what they are purported to do.

This study represents a material contribution to the need for validity studies of objective type personality tests, stressed by many authorities in the field of personality evaluation. Perhaps this contribution will suggest methods of validating tools now enjoying popular usage. A greater

\[1/\]Arthur E. Traxler, "Measurement in the Field of Personality", Education (March, 1946) 66: 424
However, the benefits of the system can be applied to the personality testing of the population of 18,000,000 male veterans of World War II, with greater confidence than previously expressed.

This system, known as the "Personality Research Bureau" test, has been developed using extensive psychological research and testing. The test consists of a series of questions designed to assess various aspects of personality, including self-concept, social interaction, and emotional stability.

The test results can be used to identify individuals who may require additional support or intervention. In addition, the test can be used to help individuals understand their own personality traits and how they might impact their behavior and social interactions.

Furthermore, the test has been found to be effective in predicting job performance and career success. By identifying individuals with certain personality traits, organizations can make more informed hiring decisions, leading to improved employee satisfaction and productivity.

In conclusion, the Personality Research Bureau test is a valuable tool for understanding and assessing personality traits. Its widespread use and effectiveness make it an indispensable resource for individuals and organizations alike.

need will be fulfilled if the constructors of personality tests not yet devised will make use of the improved statistical techniques and the advances in personality classification made possible by progressive authorities in the fields of education, psychology and medicine.


Korschun, A., "Replies of Psychologists to a Short Questionnaire on Mental Test Developments, Personality Inventories, and the Researcher Test", Educational and Psychological Measurement (1945) 57-63.

The failure of education, propaganda and medicine will be disappointing if the consequences of personality development are not yet developed. It will make use of the ignorance of the mass.
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MANUAL
FOR THE PERSONALITY INVENTORY

By ROBERT G. BERNREUTER
The Personality Inventory represents a new departure in the measurement of personality in that it measures several different aspects at one time. The immediate effect of this is a very considerable saving both in cost and in the time required for administration. The facts that the nature of the traits being measured is not readily detectable and that the scales possess high reliability, which permits their being used to compare one individual with another, are further distinct advantages.

Six scales have been prepared and are now available. These are designated by the symbols B1–N, B2–S, B3–I, B4–D, F1–C, and F2–S, and may be briefly described as follows:

**B1–N.** A measure of neurotic tendency. Persons scoring high on this scale tend to be emotionally unstable. Those scoring above the 98 percentile would probably benefit from psychiatric or medical advice. Those scoring low tend to be very well balanced emotionally.

**B2–S.** A measure of self-sufficiency. Persons scoring high on this scale prefer to be alone, rarely ask for sympathy or encouragement, and tend to ignore the advice of others. Those scoring low dislike solitude and often seek advice and encouragement.

**B3–I.** A measure of introversion-extroversion. Persons scoring high on this scale tend to be introverted; that is, they are imaginative and tend to live within themselves. Scores above the 98 percentile bear the same significance as do similar scores on the B1–N scale. Those scoring low are extroverted; that is, they rarely worry, seldom suffer emotional upsets, and rarely substitute day dreaming for action.

**B4–D.** A measure of dominance-submission.* Persons scoring high on this scale tend to dominate others in face-to-face situations. Those scoring low tend to be submissive.

**F1–C.** A measure of confidence in oneself. Persons scoring high on this scale tend to be hamperingly self-conscious and to have feelings of inferiority; those scoring above the 98 percentile would probably benefit from psychiatric or medical advice. Those scoring low tend to be wholesomely self-confident and to be very well adjusted to their environment.

**F2–S.** A measure of sociability. Persons scoring high on this scale tend to be non-social, solitary, or independent. Those scoring low tend to be sociable and gregarious.

The Personality Inventory may be scored on each of these six scales. However, the substantial correlations of the various scales as shown in Tables III, IV, and V indicate that for many purposes the use of a smaller number of scales would be satisfactory. For example, the high correlation

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* The items in this test which measure Dominance-Submission are based upon the Ascendancy-Submission Reaction Study by Gordon W. and Floyd H. Allport and are used by permission of and special arrangements with the publishers, Houghton Mifflin Company.
between B1-N for neurosis and B3-I for introversion would seem to make it unnecessary to employ both of these “B” scales in ordinary situations.

To obtain the maximum information from this inventory two new scales, F1-C and F2-S, have been constructed. The technique of revision is given later in this manual and is fully presented in J. C. Flanagan, Factor Analysis in the Study of Personality, 103 pages photolith, Stanford University Press, 1935, $1.25.

Thus it is possible to score the Inventory using any combination of the six desired by the examiner and applying appropriately the information given in Table III, below.

RANGE OF USEFULNESS

The blank has been used successfully with high-school students, with college students, and with adults. It is suitable for use with either sex. Percentile norms, which enable the layman to know how he compares with others, have been prepared for these three groups. An Individual Report Sheet is also available which depicts graphically how the individual compares with others of the same sex and group. This sheet is self-explanatory in that directions for reading it and the significance of each scale on it are explained in non-technical language.

INSTRUCTIONS FOR GIVING

1. The Inventory is self-administering. No instructions are necessary except those appearing on the blank. To insure the careful reading of the instructions, the examiner should read them aloud while the individuals being tested are reading them silently.

2. Each person should interpret the questions for himself. The examiner must not explain how he thinks a question should be interpreted; doing so can only result in invalidating the item. However, in the case of young or relatively uneducated subjects it probably is permissible to explain the meanings of the words which are not understood, provided the examiner can do so without thereby prejudicing the answer of the subject.

3. There are no time limits. Very few subjects will require more than 25 minutes to complete the Inventory.

4. The importance of thorough co-operation. Accurate results should be expected only when the subject is willing to co-operate thoroughly. The examiner should be careful to point out that the value of the results to the subject himself is dependent upon his own sincerity, and, further, should guarantee the confidential treatment of the findings.

5. The exact nature of the traits being measured should not be revealed before the subjects have finished. However, to avoid any air of mysteriousness it is well to state that “various aspects of personality” are being measured.

INSTRUCTIONS FOR SCORING

Six separate scoring keys are used in the scoring, one for each trait tested. In the preparation of these keys the diagnostic value of each response to each question was determined for each of the traits. Weights from plus 7 to minus 7 were assigned in accordance with these diagnostic values. The total score for a trait is the algebraic sum of the weights which
correspond to the responses made by the individual, as given on the key for that particular trait. In accordance with the instructions appearing on the *Inventory*, if an individual fails to answer a question it should be scored as though he had encircled the question mark.

There are several methods available for determining the sum of these weights:

1. The weights corresponding to each response which the subject has encircled may be written on the blank. These may then be summed to obtain the total score.

2. Many clerks, although not all, are able to total the weights mentally without writing them down. Such a procedure is very much more rapid than the other.

3. The most satisfactory method has been devised by Strong for use with the *Vocational Interest Blank* (*Manual for the Vocational Interest Blank*, Stanford University Press). Two Veeder counters are used (Nos. ZD-18-T and ZD-8-T, manufactured by the Veeder Manufacturing Company, Hartford, Conn.). These are fastened on a thin board with the levers adjacent. As the weights are read from the key, the index finger is used to tally the plus weights on the left-hand counter, the middle finger to tally the minus weights on the right-hand one. This is by far the most rapid method.

In order that the scores may be intelligible to the layman it is suggested that the total score be converted into percentile scores, for which purpose norms are provided. A percentile score indicates what proportion of the group an individual exceeds in the given measure. For example, a percentile score of 64 indicates that this individual has earned a score for neurosis, for self-sufficiency, for introversion, or for dominance, depending upon the scale used, which is higher than the scores earned by 64 per cent of the group with whom he is being compared.

A table is provided on the cover of the *Inventory* to facilitate the computation of the total scores and the percentile scores. Beneath this table is provided a device for indicating the group upon which the percentile scores are based. The group used should be indicated by encircling or underlining the proper symbols.

**INSTRUCTIONS FOR USING THE INDIVIDUAL REPORT SHEET**

1. Before filling out the Individual Report Sheet the total scores should be transmuted into percentile scores.

2. A separate column should be used for each score.

3. The symbols for the scales (B1-N, B2-S, etc.) should be written at the tops of the respective columns.

4. The percentile scores should be written in the spaces at the bottoms of the columns.

5. The percentile scores should be indicated on the columns by short dashes or cross marks.

6. A “profile” should be made by drawing a line from the score on one column to the one on the next column.

7. The group upon which the percentile scores were computed (highschool students, college students, or adults) should be written in the blank spaces provided.
RELIABILITY

The coefficients of reliability for each scale are reported in Table I. These were computed by using the split-half method and applying the Spearman-Brown prophecy formula. The subjects for the “B” scales were students in two separate classes of elementary psychology at Stanford University. The students in the fall-quarter class were part of the group used in computing the scoring weights; the data from the winter-quarter class were collected from entirely new students after the scoring weights had been computed. The subjects for the “F” scales were eleventh-grade boys in a number of high schools in the suburban Boston area.

Table I.—Coefficients of Reliability

<table>
<thead>
<tr>
<th>Stanford University Elementary Psychology Students</th>
<th>Fall Quarter Class</th>
<th>Winter Quarter Class</th>
<th>High-School Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 70</td>
<td>N = 128</td>
<td>N = 100</td>
</tr>
<tr>
<td>B1-N</td>
<td>.91</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td>B2-S</td>
<td>.92</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>B3-I</td>
<td>.89</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>B4-D</td>
<td>.89</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td>F1-C</td>
<td></td>
<td></td>
<td>.86</td>
</tr>
<tr>
<td>F2-S</td>
<td></td>
<td></td>
<td>.78</td>
</tr>
</tbody>
</table>

VALIDITY

Coefficients of correlation, both before and after being corrected for attenuation, are presented in Table II. They indicate that the four traits measured by The Personality Inventory are identical with four traits which have been measured by previously validated tests. These are the Thurstone Neurotic Inventory (TN), the Bernreuter Self-sufficiency Test (SS), the Laird C2 Introversion Test (C2), and the Allport Ascendance-Submission Reaction Study (AS). In the construction of The Personality Inventory these four tests were used to locate individuals who possessed the various traits to an extreme degree. The weights on the scoring keys were computed on the basis of the extent to which each question differentiated between the criterion groups composed of these extreme individuals.

Table II.—Coefficients of Validity

<table>
<thead>
<tr>
<th>Stanford University Elementary Psychology Students</th>
<th>Fall Quarter Class</th>
<th>Winter Quarter Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1-N and TN</td>
<td>70</td>
<td>.94</td>
</tr>
<tr>
<td>B2-S and SS</td>
<td>70</td>
<td>.89</td>
</tr>
<tr>
<td>B3-I and C2</td>
<td>70</td>
<td>.76</td>
</tr>
<tr>
<td>B4-D and AS (Men)</td>
<td>55</td>
<td>.81</td>
</tr>
<tr>
<td>B4-D and AS (Women)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTERCORRELATIONS

In Table III are reported the coefficients of correlation found between the various scales. It shows that the intercorrelations between the B1-N, B3-I, and F1-C scales are very high. Little is gained through using more than one of these three scales. If the “B” scales are used, B1-N is probably to be preferred over B3-I, because it has a higher reliability.

<table>
<thead>
<tr>
<th>B2-S</th>
<th>B3-I</th>
<th>B4-D</th>
<th>F1-C</th>
<th>F2-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>.37</td>
<td>.95</td>
<td>.80</td>
<td>.95</td>
<td>.32</td>
</tr>
<tr>
<td>.95</td>
<td>.47</td>
<td>.54</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>.31</td>
<td>.69</td>
<td>.88</td>
<td>.39</td>
<td>.11</td>
</tr>
<tr>
<td>.80</td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>.32</td>
<td>.60</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE III.—COEFFICIENTS OF INTERCORRELATION
The Pennsylvania State College (Men) Engineering Students

N = 157

<table>
<thead>
<tr>
<th>Scale</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III-IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurotic Tendency</td>
<td>.887</td>
<td>.228</td>
<td>√-.023</td>
</tr>
<tr>
<td>Self-Sufficiency</td>
<td>-.594</td>
<td>.648</td>
<td>.167</td>
</tr>
<tr>
<td>Introversion-Extroversion</td>
<td>.858</td>
<td>.321</td>
<td>.084</td>
</tr>
<tr>
<td>Dominance-Submission</td>
<td>-.833</td>
<td>.112</td>
<td>.358</td>
</tr>
</tbody>
</table>

It will be seen that the first factor accounts for 78 per cent, the second for 18 per cent, and the remaining two for 4 per cent of the total variance of the four factors. Since the first two factors account for practically all of the individual variability, the items of the inventory were re-evaluated in terms of these two factors. The intercorrelation of the scores made by a new group of 100 eleventh-grade boys on the two revised scales was .04. Thus the two new measures are practically independent.

* For full presentation, see J. C. Flanagan, Factor Analysis in the Study of Personality, 103 pages photolith, Stanford University Press, 1935, $1.25.
RELATIONS TO "B" SCALES

It should be noted that close approximations to the individual scores for the four original scales may be obtained from the two revised scales by means of the following simple relations:

\[
\begin{align*}
B1-N &= 0.89(F1-C) + 0.23(F2-S) - 26 \\
B2-S &= -0.48(F1-C) + 0.53(F2-S) + 18 \\
B3-I &= 0.69(F1-C) + 0.26(F2-S) - 1 \\
B4-D &= -0.71(F1-C) + 0.09(F2-S) + 23
\end{align*}
\]

The coefficients of correlation between the actual scores on the B scales and those estimated from the two "F" scales are given in Table V. These were obtained from a group other than that on which the scales were revised, a group consisting of 100 eleventh-grade boys in the high schools of the suburban Boston area.

<table>
<thead>
<tr>
<th></th>
<th>Correlation between Scores Obtained on the Four Original Scales and Scores Estimated from the Two Revised Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1-N</td>
<td>Neurotic Tendency</td>
</tr>
<tr>
<td>B2-S</td>
<td>Self-Sufficiency</td>
</tr>
<tr>
<td>B3-I</td>
<td>Introversion</td>
</tr>
<tr>
<td>B4-D</td>
<td>Dominance-Submission</td>
</tr>
</tbody>
</table>

COMMUNICATIONS

The author will be glad to supply further information regarding the use of the Inventory or the interpretation of results. Communications should be addressed in care of the Department of Psychology, Pennsylvania State College, State College, Pennsylvania. Business communications should be addressed to the publisher.

PRICE SCALES

Package lots, complete with manual, six scales, and percentile norms: 25 copies, $1.75; 100 copies, $5.50; 500 copies, $25.00; 1000 copies, $40.00. Address Stanford University Press, Stanford University, California.
THE PERSONALITY INVENTORY
By ROBERT G. BERNEUTER

PUBLISHED BY
STANFORD UNIVERSITY PRESS
STANFORD UNIVERSITY, CALIFORNIA

Date
Name
Age
Sex
Address
Name of school
School grade
or business firm
or occupation

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H.S—COLL.—ADULT
Based on norms
MALE—FEMALE

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The questions on this blank are intended to indicate your interests and attitudes. It is not an intelligence test, nor are there any right or wrong answers.

In front of each question you will find: "Yes No ?"

If your answer is "Yes," draw a circle around the "Yes." If your answer is "No," draw a circle around the "No." If you are entirely unable to answer either "Yes" or "No" to the question, then draw a circle around the question mark.

1. Yes No ? Does it make you uncomfortable to be "different" or unconventional?
2. Yes No ? Do you day-dream frequently?
3. Yes No ? Do you usually work things out for yourself rather than get someone to show you?
4. Yes No ? Have you ever crossed the street to avoid meeting some person?
5. Yes No ? Can you stand criticism without feeling hurt?
6. Yes No ? Do you ever give money to beggars?
7. Yes No ? Do you prefer to associate with people who are younger than yourself?
8. Yes No ? Do you often feel just miserable?
9. Yes No ? Do you dislike finding your way about in strange places?
10. Yes No ? Are you easily discouraged when the opinions of others differ from your own?
11. Yes No ? Do you try to get your own way even if you have to fight for it?
12. Yes No ? Do you blush very often?
13. Yes No ? Do athletics interest you more than intellectual affairs?
14. Yes No ? Do you consider yourself a rather nervous person?
15. Yes No ? Do you usually object when a person steps in front of you in a line of people?
16. Yes No ? Have you ever tried to argue or bluff your way past a guard or doorman?
17. Yes No ? Are you much affected by the praise or blame of many people?
18. Yes No ? Are you touchy on various subjects?
19. Yes No ? Do you frequently argue over prices with tradesmen or junkmen?
20. Yes No ? Do you feel self-conscious in the presence of superiors in the academic or business world?
21. Yes No ? Do ideas often run through your head so that you cannot sleep?
22. Yes No ? Are you slow in making decisions?
23. Yes No ? Do you think you could become so absorbed in creative work that you would not notice a lack of intimate friends?
24. Yes No ? Are you troubled with shyness?
25. Yes No ? Are you inclined to study the motives of other people carefully?
26. Yes No ? Do you frequently feel grouchy?
27. Yes No ? Do your interests change rapidly?
28. Yes No ? Are you very talkative at social gatherings?
29. Yes No ? Do you ever heckle or question a public speaker?
30. Yes No ? Do you very much mind taking back articles you have purchased at stores?
31. Yes No ? Do you see more fun or humor in things when you are in a group than when alone?
32. Yes No ? Do you prefer travelling with someone who will make all the necessary arrangements to the adventure of travelling alone?
33. Yes No ? Would you rather work for yourself than carry out the program of a superior whom you respect?
34. Yes No ? Can you usually express yourself better in speech than in writing?
35. Yes No ? Would you dislike any work which might take you into isolation for a few years, such as forest ranging, etc.?
36. Yes No ? Have you ever solicited funds for a cause in which you were interested?
37. Yes No ? Do you usually try to avoid dictatorial or "bossy" people?
38. Yes No ? Do you find conversation more helpful in formulating your ideas than reading?
39. Yes No ? Do you worry too long over humiliating experiences?
40. Yes No ? Have you ever organized any clubs, teams, or other groups on your own initiative?
41. Yes No ? If you see an accident do you quickly take an active part in giving aid?
42. Yes No ? Do you get stage fright?
43. Yes No ? Do you like to bear responsibilities alone?
44. Yes No ? Have books been more entertaining to you than companions?
45. Yes No ? Have you ever had spells of dizziness?
46. Yes No ? Do jeers humiliate you even when you know you are right?
47. Yes No ? Do you want someone to be with you when you receive bad news?
48. Yes No ? Does it bother you to have people watch you at work even when you do it well?
49. Yes No ? Do you often experience periods of loneliness?
50. Yes No ? Do you usually try to avoid arguments?
51. Yes No ? Are your feelings easily hurt?
52. Yes No ? Do you usually prefer to do your own planning alone rather than with others?
53. Yes No ? Do you find that telling others of your own personal good news is the greatest part of the enjoyment of it?
54. Yes No ? Do you often feel lonesome when you are with other people?
55. Yes No ? Are you thrifty and careful about making loans?
56. Yes No ? Are you careful not to say things to hurt other people's feelings?
57. Yes No ? Are you easily moved to tears?
58. Yes No ? Do you ever complain to the waiter when you are served inferior or poorly prepared food?
59. Yes No ? Do you find it difficult to speak in public?
60. Yes No ? Do you ever rewrite your letters before mailing them?
61. Yes No ? Do you usually enjoy spending an evening alone?
62. Yes No ? Do you make new friends easily?
63. Yes No ? If you are dining out do you prefer to have someone else order dinner for you?
64. Yes No ? Do you usually feel a great deal of hesitancy over borrowing an article from an acquaintance?
65. Yes No ? Are you greatly embarrassed if you have greeted a stranger whom you have mistaken for an acquaintance?
66. Yes No ? Do you find it difficult to get rid of a salesman?
67. Yes No ? Do people ever come to you for advice?
68. Yes No ? Do you usually ignore the feelings of others when accomplishing some end which is important to you?
69. Yes No ? Do you often find that you cannot make up your mind until the time for action has passed?
70. Yes No ? Do you especially like to have attention from acquaintances when you are ill?
71. Yes No ? Do you experience many pleasant or unpleasant moods?
72. Yes No ? Are you troubled with feelings of inferiority?
73. Yes No ? Does some particularly useless thought keep coming into your mind to bother you?
74. Yes No ? Do you ever upbraid a workman who fails to have your work done on time?
75. Yes No ? Are you able to play your best in a game or contest against an opponent who is greatly superior to you?
76. Yes No ? Have you frequently appeared as a lecturer or entertainer before groups of people?
77. Yes No ? Are people sometimes successful in taking advantage of you?
78. Yes No ? When you are in low spirits do you try to find someone to cheer you up?
79. Yes No ? Can you usually understand a problem better by studying it out alone than by discussing it with others?
80. Yes No ? Do you lack self-confidence?
81. Yes No ? Does admiration gratify you more than achievement?
82. Yes No ? Are you willing to take a chance alone in a situation of doubtful outcome?
83. Yes No ? Does your ambition need occasional stimulation through contact with successful people?
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<th>Yes</th>
<th>No</th>
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<td>84.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually avoid asking advice?</td>
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<td>85.</td>
<td>Yes</td>
<td>No</td>
<td>Do you consider the observance of social customs and manners an essential aspect of life?</td>
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<td>86.</td>
<td>Yes</td>
<td>No</td>
<td>If you are spending an evening in the company of other people do you usually let someone else decide upon the entertainment?</td>
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<td>87.</td>
<td>Yes</td>
<td>No</td>
<td>Do you take the responsibility for introducing people at a party?</td>
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<td>88.</td>
<td>Yes</td>
<td>No</td>
<td>If you came late to a meeting would you rather stand than take a front seat?</td>
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<td>89.</td>
<td>Yes</td>
<td>No</td>
<td>Do you like to get many views from others before making an important decision?</td>
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<td>90.</td>
<td>Yes</td>
<td>No</td>
<td>Do you try to treat a domineering person the same as he treats you?</td>
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<td>91.</td>
<td>Yes</td>
<td>No</td>
<td>Does your mind often wander so badly that you lose track of what you are doing?</td>
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<td>92.</td>
<td>Yes</td>
<td>No</td>
<td>Do you ever argue a point with an older person whom you respect?</td>
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<td>93.</td>
<td>Yes</td>
<td>No</td>
<td>Do you have difficulty in making up your mind for yourself?</td>
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<td>94.</td>
<td>Yes</td>
<td>No</td>
<td>Do you ever take the lead to enliven a dull party?</td>
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<td>95.</td>
<td>Yes</td>
<td>No</td>
<td>Would you “have it out” with a person who spread untrue rumors about you?</td>
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<td>96.</td>
<td>Yes</td>
<td>No</td>
<td>At a reception or tea do you feel reluctant to meet the most important person present?</td>
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<td>97.</td>
<td>Yes</td>
<td>No</td>
<td>Do you find that people are more stimulating to you than anything else?</td>
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<td>98.</td>
<td>Yes</td>
<td>No</td>
<td>Do you prefer a play to a dance?</td>
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<td>99.</td>
<td>Yes</td>
<td>No</td>
<td>Do you tend to be radical in your political, religious, or social beliefs?</td>
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<td>100.</td>
<td>Yes</td>
<td>No</td>
<td>Do you prefer to be alone at times of emotional stress?</td>
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<td>101.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually prefer to work with others?</td>
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<td>102.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually work better when you are praised?</td>
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<td>103.</td>
<td>Yes</td>
<td>No</td>
<td>Do you have difficulty in starting a conversation with a stranger?</td>
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<td>104.</td>
<td>Yes</td>
<td>No</td>
<td>Do your feelings alternate between happiness and sadness without apparent reason?</td>
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<td>105.</td>
<td>Yes</td>
<td>No</td>
<td>Are you systematic in caring for your personal property?</td>
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<td>106.</td>
<td>Yes</td>
<td>No</td>
<td>Do you worry over possible misfortunes?</td>
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<td>107.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually prefer to keep your feelings to yourself?</td>
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<td>108.</td>
<td>Yes</td>
<td>No</td>
<td>Can you stick to a tiresome task for a long time without someone prodding or encouraging you?</td>
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<tr>
<td>109.</td>
<td>Yes</td>
<td>No</td>
<td>Do you get as many ideas at the time of reading a book as you do from a discussion of it afterward?</td>
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<td>110.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually face your troubles alone without seeking help?</td>
</tr>
<tr>
<td>111.</td>
<td>Yes</td>
<td>No</td>
<td>Have you been the recognized leader (president, captain, chairman) of a group within the last five years?</td>
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<tr>
<td>112.</td>
<td>Yes</td>
<td>No</td>
<td>Do you prefer making hurried decisions alone?</td>
</tr>
<tr>
<td>113.</td>
<td>Yes</td>
<td>No</td>
<td>If you were hiking with a group of people, where none of you knew the way, would you probably let someone else take the full responsibility for guiding the party?</td>
</tr>
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<td>114.</td>
<td>Yes</td>
<td>No</td>
<td>Are you troubled with the idea that people on the street are watching you?</td>
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<td>115.</td>
<td>Yes</td>
<td>No</td>
<td>Are you often in a state of excitement?</td>
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<td>116.</td>
<td>Yes</td>
<td>No</td>
<td>Are you considered to be critical of other people?</td>
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<td>117.</td>
<td>Yes</td>
<td>No</td>
<td>Do you usually try to take added responsibilities on yourself?</td>
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<td>118.</td>
<td>Yes</td>
<td>No</td>
<td>Do you keep in the background at social functions?</td>
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<td>119.</td>
<td>Yes</td>
<td>No</td>
<td>Do you greatly dislike being told how you should do things?</td>
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<td>120.</td>
<td>Yes</td>
<td>No</td>
<td>Do you feel that marriage is essential to your present or future happiness?</td>
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<td>121.</td>
<td>Yes</td>
<td>No</td>
<td>Do you like to be with people a great deal?</td>
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<td>122.</td>
<td>Yes</td>
<td>No</td>
<td>Can you be optimistic when others about you are greatly depressed?</td>
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<td>123.</td>
<td>Yes</td>
<td>No</td>
<td>Does discipline make you discontented?</td>
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<td>124.</td>
<td>Yes</td>
<td>No</td>
<td>Are you usually considered to be indifferent to the opposite sex?</td>
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<td>125.</td>
<td>Yes</td>
<td>No</td>
<td>Would you feel very self-conscious if you had to volunteer an idea to start a discussion among a group of people?</td>
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### The Personality Inventory

By Robert G. Bernreuter

Published by Stanford University Press, Stanford University, California

**Tentative Percentile Norms**

**October, 1938**

This revision of the norms replaces all previous issues, and will be sent free on request to users of the *The Personality Inventory*.

To find the percentile score, first find the raw score in the set of norms that corresponds to the subject's sex and school status. Then follow across, horizontally, to the scale on which the raw score was earned (B1-M, B2-R, etc.). The score in this column corresponds to the raw score in the percentile column. It will be necessary to interpolate whenever the raw score does not end in either five or zero.

The symbols used have the following meanings:

- **N** = Number of cases used in computing the norms.
- **S.D.** = Standard deviation of the distribution of scores.
- **M.** = Arithmetical average (mean) of the distribution of scores.
- **S.D.** = Standard deviation of the distribution of scores.

The author will appreciate receiving any additional data which users of the test may send him for the further revision of these norms. Material addressed to him at Stanford University Press will be forwarded.

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### Men

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### High School Boys

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### High School Girls

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**M.** = Mean

**S.D.** = Standard Deviation

**N.** = Number of cases

**B1** = Raw Score

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**Notes:**

- The norms are based on a sample of 631 boys and 391 girls.
- The norms are used for the high school boys and girls.
- The norms are used for the college men and women.
- The norms are used for the college women.
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

**High School Girls**

**Adult Men**

**Adult Women**

**Notes:**

- M: Mean
- S.D.: Standard Deviation
- N: Number of Observations
- High School Girls: N=367
- Adult Men: N=121
- Adult Women: N=1010

**Table:**

|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

**Adaptation:**

- The table above contains data on various measurements across different groups (High School Girls, Adult Men, Adult Women).
- The columns represent different values, and the rows indicate the number of observations.
- The data includes mean (M) and standard deviation (S.D.).
- The table is structured to allow easy comparison between different groups and measurements.
The total score is the algebraic sum of the values which correspond to the encircled responses.

In accordance with the instructions on the blank, a question that is unanswered should be scored as though the question mark had been encircled.

To facilitate scoring, the key should be cut into three strips as shown. The key may then be placed directly over the columns of responses, the “Yes” column being seen to the left of the strips, the “No” and the “?” columns being seen through the slots.
The total score is the algebraic sum of the values which correspond to the encircled responses.

In accordance with the instructions on the blank, a question that is unanswered should be scored as though the question mark had been encircled.

To facilitate scoring, the key should be cut into three strips as shown. The key may then be placed directly over the columns of responses, the “Yes” column being seen to the left of the strips, the “No” and the “?” columns being seen through the slots.