Accepted

$\frac{135}{150}$ (3)

May. 2nd/47

An Analysis Of The California Test
Of Personality; Intermediate Series, Form A

by

DOUGLAS TIMOTHY KENNY

A Thesis submitted in Partial Fulfillment of

The Requirements for the Degree of

Master of Arts

in the Department

of

Psychology

The University of British Columbia

April, 1947.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

x x x

AN ANALYSIS

of the

CALIFORNIA TEST OF PERSONALITY; INTERMEDIATE SERIES,

FORM A.

by

DOUGLAS TIMOTHY KENNY

ABSTRACT OF

A THESIS SUBMITTED IN PARTIAL FULFILMENT
of
THE REQUIREMENTS FOR THE DEGREE
of
MASTER OF ARTS

IN THE DEPARTMENT
of
PSYCHOLOGY

THE UNIVERSITY OF BRITISH COLUMBIA

APRIL, 1947.

An Analysis Of The California Test
Of Personality; Intermediate Series, Form A

ABSTRACT

The purpose of this thesis was to make a
comprehensive statistical evaluation of the California
Test of Personality, Intermediate Series, Form A. This
test was given to 173 boys and 155 girls in ten classes in
Grade VIII, and 125 boys and 125 girls in eight classes in
Grade X.   All subjects were tested as a group in their
respective classes at the Kitsilano Junior-Senior High
School, Vancouver, British Columbia. Of the students
originally tested, 100 students in each of the two grades
were retested approximately six and one half months later.

In resume of the results, one may say that with-
in the limits of this study the following general
conclusions appear.

1. There were significant differences between
the mean scores at the 1% level between Grade VIII and X
students on self adjustment, sense of personal worth, social
adjustment, freedom from anti-social tendencies, school
relations and total adjustment.   Significant sex
differences exist on various measures, both within grades
and between grades. Where significant grade and sex
differences exist, a separate set of norms should be used
in scoring such groups.

2. The manual norms would appear to be of

little value in the school system where this study took place.

3. Because of the high average scores on the various measures and the extreme negative skewness on many of the subtests, these measures probably do not discriminate between those students who are exceptionally well adjusted from those who are well adjusted.

4. The Kuder-Richardson reliabilities of the subtests indicate that they are not high enough for individual diagnosis. The total adjustment score for Grade VIII pupils is the only measure sufficiently reliable for individual diagnosis. The test-retest reliabilities indicate that what is being measured is perhaps something transitory, rather than the fundamental pattern or organization of personality.

5. According to an item analysis, the test appears to be more valid or internally consistent for Grade VIII students than for Grade X students.

6. Because items are more valid when correlated with subtest score than when correlated with self or social or total adjustment score, it is suggested that the scores on the subtests may be more meaningful than those on self or social or total adjustment.

7. The correlation between the Detroit Adjustment Inventory and the California Test of Personality is .51, and when corrected for attenuation it becomes .65.

8. Correlations between five measures on the California Test of Personality and teacher ratings of adjustment vary from -.145 to+.223.

9. In the main there are significant relationships between the various subtests. The subtests are probably not measuring uncorrelated unique traits.

10. The findings of correlation cluster analysis, correlation profile analysis and factor analysis tend to corroborate one another. Three factors or clusters of traits will account for most of the relationships among the subtests. Factor one was named a general adjustment factor, factor two was described as a sense of personal security or self assurance, and factor three was related primarily to cordial relations with people and respect for social standards.

An Analysis Of The California Test
Of Personality: Intermediate Series, Form A

Chapter I

The Problem Under Investigation

The special demands of a school program
have led school counsellors to place emphasis on the
diagnostic functions of the counselling interview.
It is particularly important for school morale, student
adjustment, and administrative reasons, that those
students who are failing to make an adequate adjustment
to life be detected and remedial treatment applied. This
often means that a counselling evaluation of adjustment
must be made of students about whom relatively little is
known.

If well-staffed teams of school counsellors
were able to make a study of each individual student,
it is quite likely that most student adjustment problems
would be discovered. Unfortunately, the trained personnel
charged with the responsibilities of detecting student
adjustment problems are very few in number, and the
demands upon their judgment tremendous. The time avail-
able for each student interview is to be counted in
minutes. Hence, any instrument which enables the school
counsellor to give more time to those students who
have difficulties in adjusting to life by separating

them from .those who are adjusting adequately is worth

serious study in a school counselling program.

The California Test of Personality, Inter-

mediate Series, was developed with these considerations

in mind.   This test is being used extensively in the

Vancouver schools in the guidance of students.   At present,

however, very little published research concerning this

test has appeared.   The purpose of this thesis is to

produce empirical evidence as to the possible worth of

this test.

The first aim of this thesis is to make a short

analysis of the main problems involved in measuring

personality by means of the questionnaire technique. Only

by so doing can the inherent limitations of personality

questionnaires, such as the California Test of Personality,

be made really clear.   For analyzing these problems of

personality measurement one will be able to see clearly

the main difficulties of measuring quantitatively the

personality of an individual by the questionnaire

technique.

A review of previous work on personality

questionnaires, as it relates to the aims of this research,

will be presented. Such information, coupled with an

analysis of the general case for and against personality

questionnaires, will provide a sound basis to evaluate the California Test of Personality and the findings of this study.

The California Test of Personality used in this study was Form A of the Intermediate Series designed for grades seven to ten. The first problem is to determine if the set of test norms are suitable for such an age range. As only one set of norms is provided for an age range of approximately thirteen to sixteen, it would seem worthwhile to see if there are no significant differences between the ages for which the test is designed. A secondary but related problem is to determine if the test norms are suitable for both sexes. Previous findings on other tests have shown that sex differences do sometimes exist.

In the study of the value of any measuring instrument, records of the skewness of the distribution are important considerations. If there are marked deviations from normality in this test, this skewing may represent the effect of a defective measuring scale.

Another problem is to determine if the personality test is reliable. This problem involves the reliability of the whole test and the reliabilities of the separate sub-tests.

One of the primary considerations in the

determining the worth of a test is it's validity. This
validity problem is split into three sub-problems in this
thesis.

The first problem is to determine if a given item
is valid for the test. That is, each item to be valid
must discriminate between individuals having much of the
trait in question and individuals having only a small
amount of the trait. In testing the validity of the items
we are applying the test of internal consistency to the
questionnaire.

A second problem of validity concerns validation
of the test by correlating it with some outside criterion.
Objective validity coefficients are lacking for the
California Test of Personality, therefore, such ones
as are provided in this study should be useful in
determining the effectiveness of the test for individual
diagnosis.

A final consideration is the question of the
number of factors or clusters of traits involved in the
sub-tests of the California Test of Personality. Correlation
cluster analysis, correlation-profile analysis and multiple
factor analysis will be used because of their possible
contribution to the understanding of the measured traits of
this test, and not for any theoretical considerations aimed

to substantiate the various theories of personality based on cluster or factor analysis.

Chapter II

The Problem of Personality Measurement

Meaning of Measurement for Personality Questionnaires

The aim of this section is to make an analysis of the main problems which have been encountered in attempts to measure personality by means of the questionnaire technique.

To measure, in the sense of the physical scientists are accumstomed to use the word, requires that the property under study vary on a continuum, describing how much. On such a continuum, fractions of units as well as whole units can be verified as equal, and submitted to addition and subtraction. To measure in this sense would require personality questionnaires to have equal units throughout their scales. An analysis of existing personality questionnaires shows that no such scale is available for the measurement of personality.

Strictly speaking, then, the questionnaire does not measure personality, but only explores to see how people respond to various situations. Hence the scores of all questionnaires are only the enumerations of correct responses. The total score represents the sum of unequal and incomparable samples of behavior.

Problems Involved in Personality Measurement by Questionnaires

Definition of Personality.

The prime condition of all quantification is a definition of the property which is to be subject matter of the quantifying process. Granting that measurement of personality is the general purpose or object of a personality questionnaire, just what is the particular property to be quantified and where is it located? An adequate qualitative description of personality would seem to have to come before measurement.

In common parlance and in psychology the term personality is used in many diverse ways. Allport (1) has cited fifty-three definitions of personality that are to be found in the literature. For the purpose of this analysis, these meanings may be conveniently classified under two concepts.

One group of definitions may be classified from the peripheral viewpoint, the other the central viewpoint. According to the former, personality is an individual's "social stimulus value". The responses made by others to an individual as the stimuli are what define his personality. According to the central definition, personality is the organization within the individual of those psychophysical stystems that determine his unique adjustments

to life.

It appears that personality questionnaires have adapted the central viewpoint of personality because they attempt to obtain information about those inner experiences that determine unique adjustments to the environment.

Assumption of Traits

Generally speaking personality questionnaires have taken personality to be composed of traits. The personality questionnaire attempts to measure some postulated common trait which all people have. The assumption is that different individuals have more or less of the same trait. If the trait which a personality questionnaire attempts to measure, is not of the same kind for different individuals, then such a trait is not measureable on the same axis and in similar units. Even for personality questionnaires, directly added units must be of the same kind.

Estimates of Common Traits Through
Sampling of Responses

The personality questionnaire attempts to secure estimates of common traits through extensive sampling of a wide variety of particular responses. The sampling idea is based on the additive concept that the sum total of the sampling of responses constitutes an approximation to an

individual's personality. The basic limitation of such a sampling notion is that addition of static specifics of test items may not represent an individual's total personality. Traits may not be static aspects of the whole. Traits are modified by the effects of experience, and therefore samplings which were at one time representative of a given trait may lose their meaning when the trait has been modified by experience. This problem is directly related to the problem of reliability.

Concept of Reliability for Personality Questionnaires.

The concept of reliability is that there is a consistency in the performance of an individual on two or more occasions. As traits are never perfectly integrated at any given time, it is not to be expected that they will be perfectly constant from time to time. The very process of adjusting to life's problems will ensure a certain amount of change from week to week. Hence, we cannot expect personality questionnaires to have retest reliabilities as high as intelligence tests.

The Concept of Validity for Personality Questionnaires.

The basic question of validity is stated thus: does the personality questionnaire measure what it purports to measure? There are two general methods of validating

personality questionnaires. Cattell (17, p.545)states every test

> has to be validated first as a true
> psychological functional entity, and
> secondly it has to be validated and
> standardized as a predictor of perform-
> ance in various current real life
> situations.

Internal validation involves the development of a proof that a unitary trait exists to be measured and that the personality questionnaire partakes of this trait. This validation is done either by factor or cluster analysis, or by a less basic approach such as item validation.

The more traditional method of validating a questionnaire is by correlating it with some "outside" criterion. This means that personality questionnaires have to do the clinical jobs they are supposed to do, that is,the questionnaire must differentiate neurotics from non-neurotics and so on. The major problem is to obtain some reliable objective criterion against which to validate the question- naire. As there appears to be no entirely satisfactory objective criterion against which to validate a questionnaire, most investigators resort to the consensus of judgment of supposedly competent individuals.

Concluding Statement

Our discussion should serve to open up the state of uncertainty which obtains in the personality question-

naire field. The inherent limitations of the personality

questionnaire technique have been found to be a result of

the nonquantitative nature of personality, the difficulty

of devising reliable units of measurement, the difficulty

of securing adequate samples of a personality trait, and

the difficulties attendant upon the establishment of

reliability and validity. Any empirical evaluation of

a personality questionnaire, such as the one to be

reported in this study, should also be viewed in the light

of these inherent limitations of the questionnaire

technique.

Chapter III

Historical Review of the Problem

Historically the measurement approach to person-
ality is traceable to the work of Galton, who proposed
for the first time that the standards of experimentation
be applied directly to the study of personality. In 1884
he (25, p.179) reached the conclusion that

> the character which shapes our conduct is a
> definite and durable 'something' and there-
> fore that it is reasonable to attempt to
> measure it.

The spread of measurement techniques applied to personal-
ity after Galton's time are scarcely yet matters of
history.

The first personality questionnaire for the
measurement of psychoneurotic tendencies, devised by
Woodworth (78) in 1917, has been the basis of all other
personality questionnaires.

A number of investigators have developed person-
ality questionnaires of varying worth since 1917. To
the construction of new questionnaires there appears no
end. In 1945 Traxler (90, p.99) estimated that there
were at least 500 published personality questionnaires.
The number of unpublished questionnaires is probably as
great. One looks in vain through various new personality
questionnaires to find some improvement of technique or

even some mere innovation over the original and outstand-
ing personality questionnaires of Woodworth, Thurstone,
Bernreuter and Guilford.

In 1921 Mathews (78) adapted the original Wood-
worth questionnaire for use with children. Cady (78), in
1923, used a modified form of the Woodworth questionnaire
in order to estimate juvenile incorrigibility. In 1926,
Heidbreder (41) attempted to measure introversion-extro-
version by a questionnaire. In 1927, House (78) revised
the Woodworth questionnaire. His one innovation was the
inclusion of items dealing with childhood experiences.
Also in 1927, Kohlstedt (83) formulated an introversion-
extroversion questionnaire. Kohlstedt introduced a new
feature in the form of validation based on the responses
of 100 manic-depressives and 100 schizophrenics. In 1928,
the Allports (2) devised the Allport ascendance-submission
scale. The Thurstones (84) in 1930, devised their "Person-
ality Schedule". This questionnaire is based on the work
of Woodworth, Allport and others. An integration of
several questionnaires was effected by Bernreuter (6) in
1931.

The interest in and the construction of person-
ality questionnaires has continued since 1917 and a great
deal of statistical evidence has been produced as to their
worth. Before reporting the findings of this study, a

carefully selected review of the findings of other re-
search, relating to this study, will be examined.

The Reliabilities of Representative
Personality Questionnaires

The problem of reliability in personality
measurement comes down to the simple matter of noting
differences between test-retest scores. We have already
noted certain factors assuming particular importance in
determining the reliabilities of personality question-
naires. Typical reliabilities coefficients are sum-
marized in Table I.

From an examination of Table I, it is seen
that reliability coefficients of sub-tests of various
questionnaires range between .61 and .85. The question
is whether these reliabilities are high enough to locate
restricted areas of personality difficulties for individ-
uals. Such reliability coefficients are probably too
low for individual prediction. Reliabilities under .90
are too low to justify much faith in the meaning of a
score.

Item Validity Studies

The purpose of item analysis is merely to re-
tain diagnostic items and reject irrelevant or ambiguous
items. Item Analysis is the problem of internal consist-

TABLE I.

RELIABILITIES OF REPRESENTATIVE PERSONALITY QUESTIONNAIRES

Personality Questionnaire	Coefficient of Reliability	Investigator	Group Tested	Method of Determining Reliability
Bell Adjustment Inventory		Turney, Austin and Fee (91)	78 High School Students	Retest ($6\frac{1}{2}$ months later).
Home	.851			
Health..........	.741			
Social..........	.832			
Emotional.......	.788			
Total Score.....	.823			
Aspects of Personality		Pintner and Forlano (66)	100 Grade V pupils	Split-half
Ascendance-Submission.....	.61			
Introversion-Extroversion.	.54			
Emotionality..............	.84			
Personal Index	.885	Loofbourow and Keys (52)	637 Junior High School Boys	Split-half
Brown Personality for Children....	.84	Brown (11)	74 Boys aged 8 - 15 years	Split-half
Woodworth-Mathews	.667	Mathews (78)	280 Boys 12, 13, 14 years.	Split-half

- 142 -

ency of the questionnaire. Test items must adequately
differentiate those possessing much of a given trait from
those possessing little of it. The first personality
questionnaires, such as Woodworth's Personal Data Sheet,
contained items based on a priori assumptions of the
test maker. These questions were assumed to deal with
symptoms found generally to antedate emotional breakdowns.
The more modern approach is to validate empirically items
selected by rational methods. Among these empirical
attempts are studies by Garrett and Schneck (28), Heid-
breder (41), Thurstone (84), Stagner and Pessin (74),
Remmers, Whisler and Duvald (67), Sletto (71) and Lay-
man (50).

Two general methods of determining item valid-
ity are in common use. The first requires the computat-
ion of the correlation, frequently biserial r, of each
item with total score. Items with correlations less than
some arbitrary standard are discarded. The second pro-
cedure involves the selection of two criterion groups
from the students at the two extremes of test scores.
The significance of the difference between the percentages
of students "passing" each item in each criterion group is
calculated. Items which fail to meet the desired degree
of significance are eliminated.

Remmers, Whisler and Duwald (67, p.20) examined responses of 300 subjects to all items on the Thurstone Personality Schedule, finding the median biserial r to be plus .42. Layman (50), in preparing a typical adjustment inventory, required that each item to enter the revised questionnaire must have a biserial r greater than plus .39. Layman (50, p.1-6) concluded

> very few personality test items are such that they will present an adequately discriminative picture of an individual's behavior tendencies or personality traits.

Stagner and Pessin (74, p.323), using the second method for determining item validity, found that only 25 of 70 items on a questionnaire dealing with personal habits had critical ratios that were significant.

A major problem of the second method is to determine the proportion of cases to be used in selecting the criterion groups. The Thurstones (84) chose 50 subjects, approximately eight per cent. of the sample, for each criterion group. Luckert (53) and Hall (39) chose the highest and lowest nine per cent. for each criterion group. Stagner and Pessin (74) chose the highest and lowest twenty per cent. for each criterion group. Heidbreder (41), Rundquist and Sletto (76) and Vernon and Allport (93) employed quarters for each criterion group. Various proportions have been used by

other investigators.

Sletto (76) found, however, that the use of
smaller proportions than quarters inevitably increases
the average between item means for extreme segments
where there are five alternative responses provided for
each item, while the use of larger proportions decreases
the average difference between item means. Hence the
use of small proportions such as extreme deciles involves
the hazard that on a typical paper may seriously disturb
the results.

Sletto (76, p.82) has shown that if the person-
ality questionnaire scale actually measures several traits,
"purification" of the scale by item analysis will not
result in a questionnaire which is a measure of a single
trait. Whether items are measuring a single common trait
cannot be ascertained from item analysis. Statistically
significant biserial r's or statistically significant
critical ratios on every item will not assure measurement
of a common trait. Item analysis only permits the elimin-
ation of irrelevant or ambiguous items and the construct-
ion of an abridged questionnaire which has properties
very similar to the original-questionnaire.

Validation by Teacher Rating

Although there are several outside criterion
against which a personality questionnaire may be validated,

only the attempts to validate them against teacher ratings

will be considered in this study. Teacher ratings do

provide an estimate of the validity of questionnaires in

so far as they attempt to isolate personality maladjustments

peculiar to most educational situations.

As we indicated in the previous chapter, the

attempted validation of personality questionnaires by

ratings is fraught with many difficulties. A review of

the experiments which have attempted to validate person-

ality questionnaires by teacher ratings shows that there

is only a slight relation between the questionnaire and

the criterion of teacher's estimate of student adjust-

ment. Seven reported studies of teacher rating valid-

ation are reported in Table II. It can be seen from

examination of Table II. that of seven attempts to

validate questionnaires by teacher ratings only Jasper's

Depression-Elation questionnaire has obtained a fairly

high positive validity. All of the positive correlat-

ions are so low as to invalidate most questionnaires

for individual diagnostic purposes. Personality ques-

tionnaires would seem to offer little advantage in the

isolation of personality problems peculiar to most

educational situations. It would seem fair to conclude

TABLE II.

VALIDITY COEFFICIENTS OF REPRESENTATIVE PERSONALITY QUESTIONNAIRES
BASED ON TEACHER RATINGS

Personality Questionnaire	Correlation	Investigator	Number Rated
Bell Adjustment Inventory		Clark and Smith (18)	183 Freshmen
Social Adjustment.........	-.115		
Emotional Adjustment......	- .085		
Total Adjustment..........	- .003		
Bell Adjustment Inventory		Traxler (87)	33 High School Students
Emotional Adjustment	.318		
Total Adjustment	.463		
Bernreuter Personality Inventory			
(BI-N scale)	.21	Burks (13)	50 Girls
Jasper Depression-Elation.......	.71	Jasper (43)	34 College Seniors
Woodworth-Cady	.55	Cady (78)	150 Boys
Woodworth-Mathews	- . 148	Fleming and Fleming (24)	88 Girls
Washburne Social Adjustment			
Inventory	.051	Clark and Smith (18)	183 Freshmen

that either the personality questionnaires used do not
bear any essential relationship to the personality traits
rated by the teachers, or that the personality traits
have not afforded well-defined traits which are open for
experimental classifications, or the criteria for measur-
ing the validities of these questionnaires are not very
reliable and valid.

Validation According to Test Intercorrelations

It is often stated that intercorrelations be-
tween personality questionnaires may afford us an infer-
ential estimate of their validity. Such intercorrela-
tions may be suspect because some of the items may be
identical in both questionnaires. It is assumed that
if both questionnaires attempt to measure the same
trait and if they correlate highly, we have some proof
that they measure the same trait.

In Table III. we have brought together observed
intercorrelations for a number of typical questionnaires
on personality.

It is clear from a consideration of these co-
efficients that only a few questionnaires do correlate
highly, that is, only a few questionnaires appear to be
measuring the same trait.

Of particular interest is the finding that none
of the relationships between scores on the Multiple

TABLE III

Validity Coefficients of Representative
Questionnaires based on Test Correlations

Personality Questionnaires	Investigator	Intercorrelation
Bernreuter and Laird	Bernreuter (7)	.84 to 1.00
Bernreuter and Willoughby	Bernreuter (7)	.646
Maller and Rogers	Boyten and Walsworth (9)	.12
Bell and Washburne	Clark and Smith (18)	.288
Bell and Willoughby	Greene and Staton (18)	.55
Laird and Marston	Gilliland (30)	.30
Thurstone and Neyman	Stagner (73)	-.340
Root and Neyman-Kohlstedt	Root (70)	.831
Multiple Choice Rorshack and California Test of Personality	Blair and Clark (8)	
Self Adjustment		.22
Social Adjustment		.20
Total Adjustment		.19

Choice Rorshack Test and scores on the California Test
of Personality can be termed even reasonably high. The
two tests apparently measure only to a very slight
extent the same aspects of personality.

From such correlations between personality
questionnaires, it is impossible to say which of any
two tests gives a most valid measure of any given
personality trait. Many individuals who would be
rated maladjusted on one of the tests would obviously
not be so rated on the other test. In such studies
as these, where low intercorrelations are obtained,
one would be forced to conclude that perhaps one of
the tests possesses a high degree of validity and the
other does not, or perhaps neither does.

The Intercorrelation of Sub-tests

The intercorrelations between the various
questionnaires and subdivisions of questionnaires
tends to show the arbitrary character of the named
traits. We have already seen that some personality
questionnaires purporting to measure the same traits
do not correlate highly. The categories or subdiv-
isions of various personality questionnaires tend to
show low intercorrelations. Such low intercorrela-
tions would appear to indicate they are measuring
separate traits.

Clark and Smith (18,p.87) found the three separate sections of the Bell Adjustment Inventory have intercorrelations ranging from plus 0.026 to plus 0.332. One may question such low intercorrelations as each of the sections contains only thirty-five items. This fact, plus the fact that no item is scored for more than one category of adjustment, keeps the correlation among scores as low as possible. One would expect low reliabilities with these few items. So few items places a heavy burden of discrimination upon a relatively small number of items.

The intercorrelations of the four sections of the Bernreuter Personality Inventory (6) range from minus 0.73 to plus 0.93. Neurotic tendency and introversion were actually indistinguishable on this scale.

The intercorrelations of the four sections of the Brown Personality Inventory for Children range from plus 0.07 to plus 0.42. These intercorrelations may indicate the separate categories are measuring separate traits.

From the above typical intercorrelations of separate sub-sections of personality questionnaires, it can be seen that traits do have low intercorrelations.

Factor Analysis Studies on Personality
Questionnaires
_____

As Thomson (31) indicates, the research data based

on factorial analysis studies may not reveal unitary traits of personality. The use of personality questionnaires is not a perfect technique for analyzing personality into its underlying components. But assuming valid measurements of a variety of components of personality such as questionnaire items imply, the use of factorial analysis of such measurements for their components appears to offer a fruitful approach to a very intricate problem. In so far as the questionnaire items do yield valid measurements of different traits of personality, and in so far as present methods of factor analysis permit, the analysis of those aspects of personality represented in personality questionnaires has been accomplished.

There have been some sixteen published factorial analysis studies on personality questionnaires, and probably only three cluster analysis studies.

The first attempt to apply the new factor analysis methods to a questionnaire in order to find out what common variables of personality might be represented therein was reported by Guilford and Guilford (34) in 1934. A typical list of thirty-six questions yielded four common factors. They were identified as (a) social introversion-extroversion, (b) emotional sensitiveness, (c) impulsiveness, and (d) interest in self.

Since this preliminary study appeared, other factorial studies have been made by Flannagan (23), McCloy and Layman (60), Mosier (57), Guilford and Guilford (35), (36), (37), Reyburn and Taylor (68), Vernon (93), Whisler (94) Kling (47), Thorndike (82), Brogden (10), and Gibb (29). Cluster analysis studies have been performed by Jasper (49), Pallister (62) and Stagner and Krout (75).

The findings of questionnaire analysis are not definite and well confirmed. Flannagan (23), testing 305 grade eleven boys, analyzed the four Bernreuter subdivisions and found three factors. They were named self-confidence, sociability, and dominance. The last-named factor was unimportant, as it accounted for only four per cent. of the total test variance. Mosier (57), testing 500 male college students on 39 discriminative items in the Thurstone schedule, obtained eight factors. They were named as follows: cycloid tendency, depressive tendency, hypersensitivity, inferiority, social introversion, platform self-consciousness, cognitive defect and autistic tendency. Reyburn and Taylor (68), testing 115 students on the first ten items from the Freyd-Heidbreder questionnaire, obtained four factors. These factors were called will-character, surgency-desurgency, sociability, and perseveration. Vernon (93), testing

100 men and women teachers on the Boyd adjustment, obtained
four factors. He named them as follows: general factor,
carefreeness, scupulousness, and neuroticism. Whisler (94)
testing 126 male and female undergraduates with varied
questions, obtained six factors. He named them as accept-
ance of conventional ethical principles, enjoyment of
momentary pleasures, interest in conflicts and controversies,
energetic, participation in casual social relationships, and
criticalness and interest in "truth."

These studies on the application of the
factional studies to personality show that there have not
always been consistant and meaningful findings from
analysis of questionnaires purporting to measure about the
same trait, that is, neurotic tendencies. The two studies
by Guilford and Guilford (36) and Mosier (37) do tend to
agree in that they found almost the same factors.

Probably the most fruitful use of factor
analysis for personality is in test construction such as
those attempted by Guilford and Guilford (35.)

The General Case For and Against
Personality Questionnaires

The purpose of this section is to investigate
the literature of the questionnaire insofar as it is
relevant to the points which have been made in its fav-
our and against it.

Among the many points that have been raised
in favour of personality questionnaires have been the
following:

1. Very important information regarding an
individual's personal and private dispositions and beliefs
cannot be secured in any other way - especially if the
time is short (Traxler (90, p.108). Traxler maintains
that questionnaires may be successful in discovering
poorly adjusted individuals when they are so repressed
that they give little outward evidence of poor adjustment.
As a clinical instrument, the questionnaire may have
proven valuable in specific instances, although Landis,
Zubin and Katz (48) found that three different personal-
ity questionnaires could not differentiate groups of
normal college students from groups of hospitalized psy-
chotic and psychoneurotic patients. Their conclusion
concerning the validity of the three questionnaires,
which they studied, probably offers a good guide to the
use of such questionnaires.

2. Questionnaires may have value when a com-

petent individual is sufficiently motivated to give his
replies honestly and carefully (Thorpe 83, p.553). If a
person had full self-knowledge and complete integrity,
then his responses would probably be valid. But such an
individual would hardly need a personality questionnaire.

3. Questionnaires have the merit of sampling a
wide range of behaviour through the medium of the individ-
ual's reports on his customary conduct and feelings in a
wide variety of situations (Allport 1, p.448). This
would assume that each individual was a good judge of
his own conduct and feelings, that he was not self-deceiv-
ed by any desire of self defense or of wish fulfillment,
and further that if these two conditions were satisfied
he would tell the truth about himself.

4. Teachers and school administrators can draw
conclusions from questionnaires concerning the trend of
traits measured in their classes and school systems and
can plan group treatment accordingly (Clark, Tiegs, and
Thorpe 18, p.13). As a rough clinical technique, or as
a means of detecting some of the cases which are in need
of counselling advice, it may have value. As a means of
building up a scientific measuring instrument designed
for individuals, or as a means of describing the com-
plexities of individual behaviour, it would seem that
the method leaves much to be desired.

5. Personality questionnaires may·be helpful
if they are supplemented by intimate interviews and used
in conjunction with other examinations (Landis, 49):

Personality questionnaire results probably
can be used very successfully as the basis for discussion
in an interview.

6. Personality questionnaire data have consider-
able value for the appreciation of the introspected side
of human life generally. The data may show how a well-
known behaviour syndrome "feels" from the inside (Cattell
17, p.343). Special diagnostic value may be in the dis-
crepancies between the questionnaire responses and life-
outside responses. The fact that an individual states
that he acts in such a manner is an important one for the
understanding of his personality. The examination of
individual responses may prove valuable clinical material
in the appreciation of the introspective side of an indiv-
idual. This last mentioned procedure would require a
reliable test for, if the whole test is not very reliable,
a particular item may also not be reliable.

7. Standardized personality questionnaires
yield objective scores and they are easy to administer and
simple to score (Thorpe 83, p.554). Since the personality
questionnaires in current use have not been adequately
validated, the derived objective scores cannot be consid-

ered as particularly meaningful.

As can be seen from the above brief analysis, personality questionnaires have certain points in their favour. Most investigators would agree, however, that personality questionnaire scores are at best coarse approximations, and should not be given over-precise interpretation. When employed cautiously, the better personality questionnaires probably justify themselves both theoretically and practically in much the same way as psychometric scales for measuring mental ability have done.

As a serious approach to the measuring of personality, however, the questionnaire measurements can only be accepted as gross approximations, vitiated by both systematic and chance errors of unknown extent. Except in the highly artificial sense of the word measure can these be thought of as true measures. Some of the more specific reasons advanced against questionnaires have been these:

1. Each single question in a questionnaire may cut across several different tendencies within an individual (Murphy and Newcomb 59, p.871). The high internal consistency of a questionnaire shows nothing about the composition of the trait which the whole scale is supposed to measure. As already pointed out, traits of the

type studied by questionnaires exist only as more or less useful abstractions.

2. The method of administering the questionnaire does not provide any helpful cues as to the individual's veracity (Murray 58, p.440). Individuals may intentionally misrepresent themselves. It is for this reason that the practical use of questionnaires in personnel work is limited.

3. Lack of self-knowledge on the part of the subjects, that is, lack of correct appreciation of their own behaviour, may invalidate their scores (Cattell 17, p.342). Individuals differ markedly in insight. Symonds (78, p.185) has stated that children are not used to examining their own states and asjutments, and consequently flucuate and give unreliable answers on questionnaires. People differ in respect to depth of knowledge and in respect to their ability to recall and to appraise their personal and social adjustments.

4. Another limitation to questionnaires is the fact that in testing traits attention is diverted from the individual to his mere rank within a population (Allport 3, p.449). Every individual tested receives a score whether or not the variable applies to him.

5. Some individuals do not understand the questions (Thorpe 83, p.553). In cases where individu-

als do not understand these items, chance becomes the
supreme factor in determining the score.

6. The questionnaire is limited to few among
the many modes or situations in which a trait may ex-
hibit itself (Murray 58, p.439). There may be individu-
als who get a low score because, though they possess the
trait, they exhibit it in situations other than those
defined in the questionnaire. If such were the case,
then the questionnaire would not measure those traits in
the life of the individual which it purports to measure.

7. The same trait score does not necessarily
mean the same thing for two different individuals (Stagner
73, p.30). It would not be a good assumption to assume
that all individuals have the same psychological reasons
for their similar responses. At the level of personality
it cannot even be said that different responses necess-
arily indicate the same traits. In questionnaires the
dubious assumptions are made that the stimulus situation
is identical for each individual, and his responses have
constant significance. Hence questionnaires fail to
allow sufficiently for an individual interpretation of
cause and effect sequences.

There are many more possibilities of error in
the questionnaire technique of personality measurement.
The major limitations of questionnaires probably spring

from these systematic errors. In addition there are

certain mechanical weaknesses in questionnaires, but by

constructing them according to correct mental measurement

principles these weaknesses could be markedly reduced.

Chapter IV

The Testing and Rating Procedure

The Problem Under Investigation.

There is much need for a rather extended analysis of a new personality questionnaire before it is put to extensive use. The purpose of this study is to make some contriubtion to the statistical evalution of the California Test of Personality, Intermediate Series, Form A.

The Subjects

All of the subjects for this study were students in the Kitsilano Junior-Senior High School, Vancouver, British Columbia. All subjects were tested as groups in their respective classes. Form A of the Intermediate series was given between May 15th and 20th, 1946 to 173 boys and 155 girls in ten classes in grade VIII, and 125 boys and 125 girls in eight classes in grade X.

Of the students originally tested in grade VIII, 45 boys and 55 girls were retested between December 5th and 9th, 1946. The Baker Adjustment Inventory was administered to 91 of these students in November, 1946. Of the students originally tested in grade X, 47 boys and 53 girls were retested during the same period as the retests in grade VIII. For both tests the directions in administering the tests were carefully followed.

This sample of students is probably representative of the city school children as a whole because this school enrolls a composite cross-section of the total population. The students tested covered the complete range of academic achievement.

Nature of the California Test of Personality

According to the manual of directions (86, p.1) the main purpose of this test is to reveal the extent to which a student is adjusting to the problems and conditions that confront him. The test includes two main sections, self and social adjustment, each of these having six subtests, as shown in Table IV. A copy of this test is contained in Appendix A. Norms are provided for self, social and total adjustment, as well as for the subtests.

The questions follow the pattern of the Woodworth Personal Data Sheet. The student responds with a categorical yes or no to each question. While there is no time limit, it was found that students required approximately forty five minutes. The scoring key gives a list of 'desirable' or acceptable responses.

Detroit Adjustment Inventory, Alpha Form

This questionnaire is designed to interpret the adjustment problems of junior and senior high school students. It is self-administering. The questionnaire has one hundred twenty items divided into twenty-four

TABLE IV .

CONTENTS OF THE CALIFORNIA TEST OF PERSONALITY

	Number of Items
1. Self-Adjustment	90
(a) Self-Reliance	15
(b) Sense of Personal Worth	15
(c) Sense of Personal Freedom	15
(d) Feeling of Belonging	15
(e) Freedom from Withdrawing Tendencies	15
(f) Freedom from Nervous Symptoms	15
2. Social Adjustment	90
(a) Social Standards	15
(b) Social Skills	15
(c) Freedom from Anti-Social Tendencies	15
(d) Family Relations	15
(e) School Relations	15
(f) Community Relations	15
..Total Adjustment..	180

topics with five specific items under each of the twenty-
four subdivisions. The student selects the one response
from five which best describes his attitude or situation.
A copy of this test is found in Appendix A.

Teacher Ratings

In order to obtain a criterion by which to
validate the California Test of Personality, six members
of the Kitsilano teaching staff were asked to rate the
students on various personality aspects indicative of
adjustment.

The graphic rating scale was the method adopted
for rating. The rater was instructed to place a cross on
an unmarked line at the point which he believed best
described the student. The scale was scored by dividing
the line up into five equal divisions and assigning numer-
ical values from one to five to the different divisions on
the rating line. A student's score depended upon the
distance of the check from the "low" end of the scale
which represented poor adjustment on that trait. The
lowest division was given a value of one, the highest the
value of five, with intermediate values between. A
specimen of the rating scale and the instructions are
found in Appendix B.

The traits rated were those that a teacher
might be able to evaluate in a student, and included:
school relations, freedom from nervous symptoms, freedom

from withdrawing tendencies,freedom from anti-social
tendencies and total adjustment.

The teacher rated the students after the
questionnaire had been administered. In no case did
any of the teachers know the standings of the students
on the California Test of Personality. They rated only
the students in their own class. No teacher had to rate
more than twenty students, each of whom was rated by
only one teacher. Eighty-six of the Grade VIII students
were rated and correlations between the retest scores
and ratings were then computed.

Chapter V.

Differentiation of Students.

Differences between Grade VIII and Grade X
Students

The California Test of Personality, Intermediate
Series, is designed for grades VII to X. Hence, age should
not affect the personality scores to any degree for Grade
VIII and Grade X students. The differences between the mean
scores of Grade VIII and Grade X pupils on any of subtests,
the sections and total scores should not be statistically
significant if only one set of norms is to be used in
interpretating their scores. Table V presents means
and standard deviations of raw scores, by grades on the
various measures of the California Test of Personality.
Differences between means are given in column 5 of Table
V. The ratio of the difference between mean scores to the
standard error of the differences is shown in the last
column.

Grade VIII and Grade X students score approximately
alike on self reliance, feeling of belonging, social stand-
ards and community relations. On self adjustment, sense of
personal worth, social adjustment, anti-social tendencies,
school relations and total adjustment grade differences are
significant at the 1% level. On social skills mean differ-
ences are significant at the 5% level. On only two traits,
namely, feeling of belonging and social standards, do the

TABLE V.
COMPARISON OF SUBTESTS AND TOTAL SCORES OF GRADES VIII. AND IX.

MEASURE	GRADE VIII.		GRADE IX.		DIFFERENCE BETWEEN MEANS.	t. RATIOS
	Mean	SD	Mean	SD		
Self-Adjustment	65.68	10.82	68.76	9.96	3.08	3.62
Self-Reliance	10.02	2.68	10.18	2.28	.16	.80
Sense of Personal Worth	10.49	2.72	11.20	2.40	.71	3.38
Sense of Personal Freedom	12.15	2.50	12.50	3.06	.35	1.45
Feeling of Belonging	12.24	2.62	10.44	2.52	1.80	.81
Withdrawing Tendencies	10.20	2.86	11.52	2.46	.32	1.39
Nervous Symptoms	11.09	2.88	11.38	2.48	.20	1.45
Social Adjustment	67.27	10.60	69.86	9.83	2.59	3.05
Social Standards	12.85	1.82	12.84	1.92	.01	.063
Social Skills	10.48	2.39	10.99	2.42	.20	2.25
Anti-Social Tendencies	10.37	2.86	11.28	2.62	.91	3.96
Family Relations	11.55	3.04	11.87	3.12	.32	1.31
School Relations	10.23	2.72	10.89	2.50	.66	3.00
Community Relations	11.63	2.86	11.82	2.60	.19	.83
Total Adjustment	133.27	20.19	140.17	17.50	6.90	4.34

mean scores of students in Grade VIII. exceed those of the students in Grade X. These two differences, however, are not statistically significant. On the whole the data indicate if taken at face value, a greater degree of student "adjustment" in grade X than in Grade VIII.

There is only one set of norms for Grades VIII. through X. To score these grades on one set of norms implies that the personality adjustments of the students in these grades are much alike. It has been shown that in six traits there is a very significant difference between the mean scores of students in the grades being studied. All told, the data suggest that it is likely that the norms for these grades can be combined in some cases and that they cannot in others.

Comparative Data on Personality Scores of Canadian and American Students

The California Test of Personality was standardized upon students living in the United States. Can the norms be used effectively for students living in Canada? Median scores for each of the two grades and their corresponding percentile values for these medians obtained from the manual of direction norms are given in Table VI. together with the corresponding data from the California criterion group.

According to Table VI. Canadian students differ from the American sample to such an extent that the norms

TABLE VI.

COMPARATIVE DATA ON PERSONALITY SCORES OF CANADIAN AND AMERICAN
STUDENTS

MEASURE	GRADE VIII.		GRADE X.		U.S.GROUP	
	Median	Percentile	Median	Percentile	Median	Percentile
Self-Adjustment	67	35	70	40	72 - 73	50
Self-Reliance	10	50	10	50	10	50
Sense of Personal Worth	10	30	10	30	12	50
Sense of Personal Freedom	12	35	14	70	12	50
Feeling of Belonging	12	30	12	30	13	50
Withdrawing Tendencies	9	20	12	50	12	50
Nervous Symptoms	11	35	12	50	12	50
Social Adjustment	68	35	70	40	73	50
Social Standards	12	30	12	30	13	50
Social Skills	10	35	11-	50	11	50
Anti-Social Tendencies	10	30	12	50	12	50
Family Relations	12	40	12	40	13	50
School Relations	10	40	10	40	11	50
Community Relations	12	50	12	50	12	50
Total Adjustment	135	35	143	45	144 - 146	50

would appear to be of little value in the school system
where this study took place. On thirteen traits Grade Vlll
students fall below the fiftieth percentile, while Grade X
students fall below the fiftieth percentile on seven traits.

The greater differences in percentile values in
the case of Canadian students and American students can
best be attributable at this time to differences in sampling.
The authors, as indicated in their manual of directions
would conclude that such low percentile summaries show a
need for investigating the desirability of modifying the
objectives and procedures of the curriculum. They (86, p.13)
state:

> If the majority of self adjustment scores
> for a school system are low, it may indicate
> that the educational procedures in vogue are
> too formal or traditional and that more
> informal activities should be undertaken.

If the data were taken at face value, it may well
indicate that the Vancouver eductional system is more formal
than the American. Whether or not the personality traits of
Canadian students differ from those of American students is
unknown.

Sex Differences

To score both girls and boys on one set of
norms implies that the personality traits of the two sexes
are much alike. Mean scores and differences between the
means for both sexes in Grade VIII are given in Table VII.

Grade VIII girls and boys score approximately alike on sense of personal worth, sense of personal freedom, school relations and total adjustment. On self reliance, nervous symptoms, social skills, anti-social tendencies and community relations sex differences are significant at the 1% level. On withdrawing tendencies and social standard, sex differences are significant at the 5% level. The data in Table VII suggest that the scores of boys and girls in Grade VIII can be interpreted on the same norms in certain cases and that they cannot in other cases.

Mean scores and differences between the means of both sexes in Grade X are given in Table VIII.

Grade X boys and girls score approximately alike on sense of personal freedom, school relations and community relations. On self reliance, sense of personal worth, feeling of belonging, social standards and social skills, sex differences are significant at the 1% level. On social adjustment, anti-social tendencies and family relations, sex differences are significant at the 5% level. The data suggests that Grade X boys and girls can be scored in the same set of norms in some cases and that they cannot in the cases where there are very statistically significant differences between their mean scores.

TABLE VII.
MEAN SCORES AND THE EXTENT OF SEX DIFFERENCES FOR GRADE VIII.
STUDENTS

MEASURE	BOYS		GIRLS		DIFFERENCE	t RATIOS
	Mean	SD	Mean	SD		
Self-Adjustment	66.60	10.52	64.46	13.74	2.14	1.54
Self-Reliance	9.88	2.37	9.03	2.65	.85	2.83
Sense of Personal Worth	10.36	2.64	10.63	2.78	.27	.90
Sense of Personal Freedom	12.24	2.61	12.18	2.44	.06	.20
Feeling of Belonging	12.51	2.41	11.79	2.94	.72	1.07
Withdrawing Tendencies	9.31	3.17	10.09	2.90.	.78	2.44
Nervous Symptoms	13.02	1.97	10.59	2.12	2.43	10.56
Social Adjustment	69.92	15.80	68.83	10.12	1.09	1.04
Social Standards	12.70	.06	13.03	1.69	.33	2.36
Social Skills	9.19	3.08	11.07	2.22	1.88	6.48
Anti-Social Tendencies	9.88	3.01	10.91	2.56	1.03	3.43
Family Relations	11.98,	2.92	11.45	3.10	.53	1.61
School Relations	10.16	2.70	10.20	2.70	.04	.13
Community Relations	11.24	3.14	12.06..	2.44	.82	2.65
Total Adjustment	132.93	19.89	134.11	20.16	1.18	.47

MEASURE	BOYS		GIRLS		DIFFERENCE	t RATIO
	Mean	SD	Mean	SD		
Self-Adjustment	71.43	11.08	69.78	8.58	1.65	1.32
Self-Reliance	9.22	2.34	10.39	1.78	1.17	4.50
Sense of Personal Worth	10.45	2.46	11.72	1.96	1.27	4.54
Sense of Personal Freedom	13.08	2.24	12.89	2.98	.19	.58
Feeling of Belonging	11.00	2.82	12.60	2.86	1.60	4.40
Withdrawing Tendencies	11.81	2.42	11.24	2.48	.57	1.84
Nervous Symptoms	11.12	2.58	10.76	2.34	.36	1.19
Social Adjustment	68.58	9.80	71.44	9.95	2.56	2.05
Social Skills	10.52	2.50	11.46	2.24	.94	3.24
Social Standards	11.36	2.12	13.15	2.04	1.70	6.54
Anti-Social Tendencies	10.93	2.72	11.62	2.46	.69	2.03
Family Relations	12.15	2.94	11.59	3.24	.56	2.02
School Relations	10.92	2.52	11.09	2.72	.17	.52
Community Relations	11.68	2.72	11.97	2.46,	.24	.73
Total Adjustment	138.35	18.27	141.68	16.88	3.33	1.49

Differences in mean scores and the t ratios
for Grade VIII girls and Grade X girls are given in Table
IX. Mean scores are not shown as they have already been
given.

There are very statistically significant
differences at the 1% level in mean scores between Grade
VIII girls and Grade X girls on self adjustment, self
reliance, sense of personal worth, withdrawing. tendencies
and total adjustment, and at the 5% level there are
statistically significant differences on sense of personal
freedom, feeling of belonging, social adjustment and anti-
social tendendes. These students score approximately
alike on nervous symptoms, family relations, school rela-
tions and community relations.

Differences in mean scores and the t ratios
for Grade VIII boys and Grade X boys are given in Table X.

At the 1% level there are very statistically
significant differences between mean scores of Grade VIII
boys and Grade X boys on self reliance, sense of personal
worth, feeling of belonging, social standards, social skills
and anti-social tendencies. At the 5% level there are
significant differences in their mean scores on social
adjustment and family relations. These students score
approximately alike on sense of personal freedom, school
relations and community relations.

TABLE IX.

Mean Differences and t Ratios for Grade VIII. Girls and Grade X Girls

Measure	Mean Difference	t Ratio
Self-Adjustment	5.32	4.09
Self-Reliance	1.36	5.04
Sense of Personal Worth	1.09	3.88
Sense of Personal Freedom	.71	2.45
Feeling of Belonging	.81	2.31
Withdrawing Tendencies	1.15	3.59
Nervous Symptoms	.17	.63
Social Adjustment	2.31	1.98
Social Standards	.13	1.35
Social Skills	.39	1.44
Anti-Social Tendencies	.71	2.03
Family Relations	.14	.37
School Relations	.89	.33
Community Relations	.09	.30
Total Adjustment	7.57	3.47

TABLE X

Mean Differences and T Ratios for
Grade VIII. Boys and Grade X
Boys

Measure	Mean Difference	t Ratio
Self-Adjustment	1.65	1.32
Self-Reliance	1.17	4.50
Sense of Personal Worth	1.27	4.54
Sense of Personal Freedom	.19	.58
Feeling of Belonging	1.60	4.44
Withdrawing Tendencies	.57	1.84
Nervous Symptoms	.36	1.19
Social Adjustment	2.56	2.05
Social Standards	1.70	6.54
Social Skills	.94	3.24
Anti-Social Tendencies	.69	3.08
Family Relations	.56	2.02
School Relations	.17	.52
Community Relations	.24	.73
Total Adjustment	3.33	1.49

Table XI gives the differences in mean scores of the t ratios of the Grade VIII girls and Grade X boys.

At the 1% level there are very statistically significant differences between mean scores of Grade VIII girls and Grade X boys on self adjustment, sense of personal freedom, withdrawing tendencies and social standards. At the 5% level there are statistically significant differences between their mean scores on feeling of belonging, nervous symptoms and school relations. These students score approximately alike in self reliance, sense of personal worth, social adjustment, anti-social tendencies and family relations.

Table XII gives the differences in mean scores, and the t ratios of the Grade VIII boys and Grade X girls.

At the 1% level there are very statistically significant differences in the mean scores of Grade VIII boys and Grade X girls on self adjustment, sense of personal worth, withdrawing tendencies, nervous symptoms, social skills, anti-social tendencies, school relations and total adjustment. At the 5% level there are statistically significant differences in their mean scores on sense of personal freedom and social standards. These students score approximately alike on feeling of belonging and social adjustment.

TABLE XI.

Mean Differences and T Ratios for Grade VIII. Girls and Grade X. Boys

Measure	Mean Difference	t Ratio
Self-Adjustment	6.97	3.44
Self-Reliance	.19	.63
Sense of Personal Worth	.18	.58
Sense of Personal Freedom	.90	3.91
Feeling of Belonging	.79	2.26
Withdrawing Tendencies	1.72	5.38
Nervous Symptoms	.53	1.98
Social Adjustment	.25	.21
Social Standards	1.67	7.30
Social Skills	.55	1.96
Anti-Social Tendencies	.02	.20
Family Relations	.70	.19
School Relations	.72	2.26
Community Relations	.38	1.22
Total Adjustments	4.42	1.90

TABLE XII.

Mean Differences and T Ratios for Grade VIII. boys and Grade X. girls

Measure	Mean Difference	t Ratio
Self-Adjustment	3.18	2.82
Self-Reliance	.51	1.89
Sense of Personal Worth	1.36	5.04
Sense of Personal Freedom	.65	1.97
Feeling of Belonging	.09	.33
Withdrawing Tendencies	1.93	5.85
Nervous Symptoms	2.26	8.69
Social Adjustment	1.22	.81
Social Standards	.46	2.56
Social Skills	2.27	7.90
Anti-Social Tendencies	1.74	5.61
Family Relations	.39	1.06
School Relations	.93	9.30
Community Relations	.73	7.30
Total Adjustment	8.75	3.92

Rehabilities of Means and Skewness of Distributions

Table XIII gives the means, variabilities, standard errors of the means, and skewness of the distribution for the variables of Grade VIII pupils.

At the 1% level of confidence the following distributions are very significantly skewed in a negative direction: self adjustment, self reliance, sense of personal worth, sense of personal freedom, feeling of belonging, social standards, family relations and community relations.

At the 5% level of confidence the following distributions are significantly skewed in a negative direction: withdrawing tendencies, nervous symptoms and anti-social tendencies.

This negative skewness indicates that there is a considerable piling up of cases at the high score end of the scale. Because of the high average scores on these measures, and the extreme negative skewness of these distributions, these measures probably do not discriminate between those students who are exceptionally well adjusted. Those students who are poorly adjusted are probably discriminated at the lower end of the scale.

Table XIV gives the means, variabilities, standard errors of the means, and skewness of the distribution for the variables of Grade X pupils.

TABLE XIII.
MEANS, STANDARD DEVIATIONS, STANDARD ERRORS OF MEANS, AND SKEWNESS
FOR THE TEST VARIABLES OF GRADE VIII. STUDENTS

MEASURE	Mean	Sigma	Standard Error of Mean	Sk.	Standard of Error of Sk.	Sk. Standard of Error of Sk. (T Ratio/
Self-Adjustment	65.68	10.82	.60	-8.36	1.09	-7.66
Self-Reliance	10.02	2.68	.14	- .10	.03	-3.33
Sense of Personal Worth	10.49	2.72	.15	-1.60	.19	-8.42
Sense of Personal Freedom	12.15	2.50	.14	-1.48,	.08	-18.50
Feeling of Belonging	12.24	2.62	.15	-1.94	.12	-16.16
Withdrawing Tendencies	10.20	2.86	.16	- .44	.21	2.09
Nervous Symptoms	11.09	2.88	.16	-.52	.21	- 2.47
Social Adjust.	67.27	10.60	.58	-1.12	.78	- 1.46
Social Stand.	12.85	1.82	.10	-10.67	.13	-82.07
Social Skills	10.48	2.39	.13	.02	.17	.12
Anti-Social Ten.	10.37	2.86	.16	- .51	.23	- 2.22
Family Relat.	11.55	3.04	.16	- 1.42	.22	- 6.45
School Relat.	10.23	2.72	.15	- .15	.21	- .71
Community Relat.	11.63	2.86	.16	- .93	.20	4.65
Total Adjustment	133.27	20.09	1.14	- 2.23	1.62	1.38

TABLE XIV.

MEANS, STANDARD DEVIATIONS, STANDARD ERROR OF MEANS, AND SKEWNESS
FOR THE TEST VARIABLES OF GRADE X. STUDENTS

MEASURE	Mean	Standard σ (Sigma)	σ_M	SK.	σ_{SK}	$\dfrac{SK.}{\sigma_{SK}}$
Self-Adjustment	68.76	9.96	.63	-1.11	.76	- .01
Self-Reliance	10.18	2.28	.14	.20	.09	2.22
Sense of Personal Worth	11.20	2.40	.15	-1.13	.03	- 37.76
Sense of Personal Freedom	12.50	3.06	.19	-2.51	.04	- 62.74
Feeling of Belonging	10.44	2.52	.16	-1.78	.17	- 10.47
Withdrawing Tendencies	11.52	2.46	.16	1.50	.23	6.51
Nervous Symptoms	11.38	2.48	.16	-8.43	.22	-68-31
Social Adjustment	69.86	9.83	.62	-1.86	.88	- 2.11
Social Standards	12.84	1.92	.12	- .37	.17	- 2.17
Social Skills	10.99	2.42	.15	.18	.22	.82
Anti-Social Tend.	11.28	2.62	.17	.48	.23	- 2.08
Family Relations	11.87	3.12	.20	-1.13	.27	- 4.18
School Relations	10.89	2.50	.16	- .27	.22	- 1.22
Community Relations	11.82	2.60	.16	- .78	.23	- 3.39
Total Adjustment	140.17	17.50	1.11	-4.56	1.47	- 3.10

At the 1% level of confidence the following distributions are very significantly skewed in a negative direction: sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies, nervous symptoms, family relations, community relations and total adjustment.

At the 5% level the following distributions are negatively skewed: self-reliance, social adjustment, social standards and anti-social tendencies.

The distributions for self adjustment and social skills are approximately normal.

There are probably two main reasons why many of these distributions depart from normality. In the first place, the negative skewness may have resulted from a biased sample. The total population of students in Grade VIII. and Grade X may be normally distributed in regard to these traits, but because of the method employed in obtaining our subjects we may have obtained negatively skewed distributions. It is worth observing that the manual data indicate the standardization group was negatively skewed on all the measures except nervous symptoms, social standards and school relations. In the second place, the negative skewing may have resulted from a faulty measuring instrument. The manual data indicate

the average interquartile range for anyone subtest was
only about 4 for the standardization group. As there
are only fifteen items for measuring each of the separ-
ate components the ranges of scores are rather small.
Hence this personality test may not have enough highly
diagnostic items to differentiate those students who are
exceptionally well-adjusted from those students who are
only well-adjusted. Probably both of these factors are
responsible for this negative skewing.

CHAPTER VI.

Reliabilities of Measures

Table XV. gives reliabilities for the variables in the California Test of Personality. One hundred students in each of the two grades were retested after a period of six and a half months. For both grades the Richardson-Kuder reliabilities are based on the results of the original testings. The following Richardson-Kuder formula was used to estimate the reliability of the various measures for the first testing:

$$rtt = \frac{n}{n-1} \times \frac{\sigma^2 t - n \bar{p} \bar{q}}{\sigma_t^2}$$

Where $\bar{p} \bar{q}$ is the product of average proportions of passing and failing testees to each item, n is the number of items in the test and $.\sigma_t$ is the standard deviation of the total test scores.

The Richardson-Kuder reliabilities of the separate subsections range between plus 0.45 to .77 for Grade VIII. pupils. In the manual of directions, reliabilities of the subtests are said to be "sufficiently high that they provide an aid in locating more restricted areas of personality adjustment." The reliabilities of this test found in this study for the subsections are too low for individual prediction in the case of

TABLE XV.

Richardson-Kuder Reliability and Test-Retest Correlations for Grade VIII. and Grade X.

Measure	GRADE VIII.		GRADE X.	
	R.K.Reliability.	Test-Re-Test Reliability*	R.K. Reliability	Test-Re-Test Reliability*
Self-Adjustment	.84	.84	.84	.80
Self-Reliance	.54	.44	.49	.53
Sense of Personal Worth	.52	.64	.48	.62
Sense of Personal Freedom	.67	.85	.30	.42
Feeling of Belonging.	.70	.60	.53	.53
Withdrawing Tendencies.	.77	.39	.56	.54
Nervous Symptoms	.69	.68	.58	.53
Social Adjustment	.76	.59	.84	.74
Social Standards	.45	.45	.57	.55
Social Skills	.45	.51	.52	.50
Anti-Social Tendencies.	.63	.53	.63	.56
Family Relations	.77	.60	.75	.64
Social Relations	.68	.40	.68	.45
Community Relations	.71	.52	.74	.53
Total Adjustment	.91	.68	.88	.67
Number of Cases	328	100	250	100

* All correlations are significant at the 1% level.

Grade VIII. pupils.

The test-retest correlations range from plus 0.84 to plus 0.39 for Grade VIII. pupils. Test-retest coefficients show that the Richardson Kuder reliabilities are lower on sense of personal worth and social skills than the test-retest coefficients. Richardson-Kuder reliabilities and test-retest coefficients are identical for social standards and self-adjustment, and approximately identical for nervous symptoms.

The Richardson-Kuder reliability of the total adjustment score for Grade X students is almost high enough for individual diagnosis.

For Grade X pupils the Richardson-Kuder reliabilities of the subtests range between plus 0.30 and plus 0.75. No subtests are sufficiently reliable for individual prediction. The self-adjustment and social adjustment variables are probably sufficiently reliable for group prediction.

The test-retest coefficients range between plus 0.80 and plus 0.42 for Grade X. students. Test-retest coefficients are higher than the Richardson-Kuder reliabilities on self-reliance, sense of personal worth and sense of personal freedom. Test retest coefficients and Richardson-Kuder reliabilities are identical for

feeling of belonging and approximately identical for with-
drawing tendencies, social standards and social skills.

These reliabilities do not entirely correspond
to the reliabilities of this test as reported in the
manual of directions. Table XVI. gives the comparisons
between the reliabilities found in this study and the
only three reliabilities reported in the manual of dir-
ections.

Guilford (33, p.278) and others have pointed
out that the Kuder-Richardson formula tends to under-
estimate somewhat the reliability coefficient. This may
account for the lower reliabilities of the total and
self scores in this study as compared to those reported
in the manual of directions. The reliability coeffic-
ients for social adjustment score are larger in the present study
than that reported in the manual of directions.

The low reliability coefficients for the sub-
tests are to be expected since each subtest has only
fifteen items.

TABLE XVI.

COMPARISONS OF RELIABILITY COEFFICIENTS

Adjustment	Manual Split-half Corrected	Grade VIII. R-K Reli-ability	Test-Retest	Grade X. R-K Reli-ability	Test-Retest
Total	.932	.91	.68	.84	.67
Self	.898	.86	.84	.84	.80
Social	.873	.917	.59	.84	.74
Number of Cases	792	328	100	250	100

Item Analysis

The basic purpose of item analysis is to re-ject items which fail to yield responses that differentiate those who are well-adjusted from those who are poorly adjusted. The most direct and simplest method of determining item validity is to divide your subjects into two criterion groups, a poorly adjusted group and a well-adjusted group, and then compute the correlation between the criterion scores and individual test items.

Guilford (32,p.18) has provided a chart for a graphic solution of a phi (ϕ) coefficient as an index of item validity based on the proportions of passing individuals in the upper and lower criterion groups. Guilford's chart was used in this study for computing the phi coefficients.

One hundred and twenty-six tests in Grade VIII. and one hundred and twenty-six tests in Grade X. were used as the basis for the item analysis. One hundred of the tests in each of the two grades were the retest papers, while the other twenty-six tests in each of the grades were those of students who had taken the test for the first time at the period of retesting. Three criterion groups were used, by selecting upper and lower scores on each subtest, on self and social adjustment scores and on total adjustment scores. In each case

the upper and lower groups included 27 per cent[1] of the students who took the retest in December. Phi coefficients were computed for each item according to each criterion.

To arrive at a critical point or lowest acceptable phi coefficient, the null hypothesis was made, and the establishment of the lowest acceptable phi coefficient was accomplished through the use of the chi square. When the two criterion subgroups are equal in size

$$X^2 = N\phi^2$$

where X^2 is chi square, N is the number of cases and ϕ^2 is the phi coefficient squared. With one degree of freedom a chi square of 3.841 is significant at the 5% level and one of 6.635 is significant at the 1% level. In our case a significant phi at 5% level would be equal to

$$\sqrt{\frac{3.841}{N}}$$

and a significant phi at the 1% level would be equal to

$$\sqrt{\frac{6.635}{N}}$$

[1]. Kelley (44) has shown that if upper and lower groups are used, the certainty with which the means of the upper and lower groups are differentiated is at a maximum when two tails of the normal distribution each contain twenty-seven per cent. of the cases.

Evaluating our phi coefficients by this chi square method,
we find that an item that correlates with the criterion
score more than .24 is significant at the 5% level and
one correlating more than .32 is significant at the 1%
level.

Phi coefficients are found in Tables XXIV to
XXVI. in Appendix C. From an examination of these tables,
we find that the validity of an item depends consider-
ably upon the criterion that was used, not all items
being valid according to all three criteria.

The distributions of phi coefficients accord-
ing to each criteria are summarized in Table XVII. Study
of this table reveals that the values of the phi coeffic-
ients vary considerably from grade to grade.

The mean phi coefficients, according to the
three criteria, are presented in Table XVIII. The mean
phi coefficients, according to the three criteria, are
very similar for both grades. As is to be expected the
mean phi coefficients are greatest when the criterion is
scored on each subtest. Mean values of the phi coeffic-
ients are practically similar for self, social and total
adjustment criteria.

Table XIXII. and XXX show the number of valid
items in each subtest according to each of the three
criteria. The interesting fact arising from these two

TABLE XVII.

Distribution of Item Validities
According to Each of Three Criteria

φ	Sub-test		Self Adj.		Social Adj.		Total Adj	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII	Gr.X	VIII	X
.80 - .80	2	3						
.70 - .79	11	6					3	1
.60 - .69	27	18	2	1	7	5	4	1
.50 - .59	22	32	6	5	8	5	15	14
.40 - .49	43	38	24	16	18	21	24	23
.30 - .39	35	27	19	24	16	16	53	43
.20 - .29	25	37	27	21	21	20	40	42
.10 - .19	14	10	8	15	13	14	27	32
.00 - .09	3	9	4	8	7	8	10	23
-.10 - -.01						1	3	1
-.20 - -.11							1	

TABLE XVIII.

Mean Phi Coefficients by Grades and Criteria.

Grade	Subtest	Self Adj.	Social Adj.	Total Adj.
			Criterion	
VIII.	.44	.34	.34	.32
X.	.42	.30	.32	.41

tables is that the percentage of items valid at the 1%
level varies greatly with the criterion. At the 1% level,
77 per cent. of all items are valid for Grade VIII. pupils
according to subtest validity, whereas only 66 per cent.
are valid for Grade X. pupils. The items would appear
to be more valid for the Grade VIII. students than for
the Grade X. students according to each of the three
criteria.

The data from these two tables indicate that
the three best subtests, according to agreement with
subtest score, for Grade VIII. papers are withdrawing
tendencies, nervous symptoms and anti-social tendencies.
These, tests have items which are all significant at the
5% level. No single subtest on the Grade X. papers has
all of its items significant at the 5% level, although
the family relations subtest has fourteen items signi-
ficant at the 5% level. For both the grades, according
to each of the three criteria, the social standards
subtest is the test most lacking in item validity.

The data indicate, that, on the average, items
are more valid when correlated with subtest total score
than when correlated with self or social or total adjust-
ment score. Because of this fact it is suggested that
the scores on the subtests may be more meaningful than
those on self-adjustment, social adjustment or total
adjustment score.

TABLE XIX.1.

NUMBER OF ITEMS IN SELF-ADJUSTMENT SUB-
TESTS VALID AT 1% and 5% LEVELS. [1.]

Criterion

	Sub-test				Self-Adj.				Total Adj.			
	Gr.VIII.		X.		Gr.VIII.		X.		Gr.VIII.		X.	
	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%
Self-Reliance	12	2	9	1	11	2	5	1	7	4	5	2
Personal Worth	12	2	10	0	9	3	7	2	6	3	6	2
Personal Freedom	11	1	9	1	7	2	5	3	7	0	5	1
Feeling of Belonging	11	1	10	1	4	5	6	2	3	5	8	2
Withdrawing	13	2	11	1	10	2	10	1	8	4	7	2
Nervous	12	3	12	1	8	3	8	1	7	1	5	4
% of All Items	80	10	68	6	54	19	47	1	42	19	40	14

[1.] In each sub-test there are 15 items.

TABLE XXA.

NUMBER OF ITEMS IN SOCIAL ADJUSTMENT SUB-TESTS VALID AT 1% and 5% LEVELS.[1]

	Criterion											
	Sub-test				Social Adj.				Total Adj.			
	Gr.VIII.		X.		Gr.VIII.		X.		Gr.VIII.		X.	
	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%	1%	5%
Social Standards	8	1	7	2	1	1	3	1	2	2	3	1
Social Skills	10	1	10	3	6	3	6	1	7	1	7	2
Anti-Social	14	1	9	3	11	2	6	3	12	2	2	6
Family Relations	11	1	12	2	11	0	7	7	11	1	11	2
School Relations	10	1	10	0	8	1	7	3	8	3	3	1
Community Relations	13	0	10	2	10	2	11	1	9	1	8	0
% of All Items	73	7	63	13	52	1	44	16	53	11	28	13

[1] In each sub-test there are 15 items.

CHAPTER VIII.

Validation by Outside Criteria

Validation by Test Intercorrelation.

If two personality measures are valid indicators of total adjustment, then we should expect them to correlate rather highly. Personality questionnaires have been validated against other tests. While this method of validation is not ideal, it does afford some estimate of validity. In order to determine the relationship which exists between the total adjustment score on the California Test of Personality, and another measure of adjustment the total score on the Detroit Adjustment Inventory was correlated with that of the California. Ninety-one students in Grade IX. were used in this analysis of the tests. The correlation between the total adjustment score on the California Test of Personality and the total score on the Detroit Adjustment Inventory was plus 0.512 ± 053 .P.E. Judging from this correlation the California test bears a very statistically significant relationship to the Detroit Adjustment Inventory. The Kuder-Richardson reliability coefficient for the California test at the Grade VIII. level is plus 0.84 and the test-retest reliability of the Detroit Adjustment Inventory (test-retest was one

month apart) is plus 0.74. Applying the correction for attenuation, we find the correlation between true scores in these two to be plus 0.65 rather than the obtained one of plus 0.51.

These two tests apparently measure to a fair extent the same aspect of personality adjustment. This does not prove that they actually do measure student adjustment. They do appear, however, to measure something in a fairly consistent manner. This correlation has only provided an inferential estimate that the California Test of Personality has some validity.

Validation by Teacher Rating.

To serve as an outside criterion with which the personality scores of these students might be compared, the members of the teaching staff were asked to rate the students on school relations, nervous symptoms, withdrawing tendencies, anti-social tendencies and total adjustment. Eighty-six pupils in Grade IX. (those originally in Grade VIII.) were rated by their respective teachers. Each pupil received only one rating.

The correlations between teacher ratings and California scores, shown in Table XXI. are all low.

The correlations between these teachers' ratings and test scores range between minus .145 to +.225. None of these measures show any statistically significant

TABLE XXI

CORRELATIONS BETWEEN TEACHER RATINGS
AND FIVE MEASURES ON THE CALIFORNIA TEST OF
PERSONALITY

Measur e	r	P.E.$_r$
School Relat ions............	.089	.07
Nervous Symptoms	-.145	.06
Wi th drawing Tendencies.....	.225	.06
Anti Social Tendencies.......	-.137	.07
Tot al Adjustment............	.012	.07

relationship to teacher judgment of personality adjustment. It is apparent from these correlations that the scores received by students on these five measures give no indication of adjustment insofar as these are compared with teacher ratings of student adjustment as observed in classroom situations. If these ratings are highly reliable and valid then it follows that the California Test of Personality offers little help in the isolation of personality problems (relative to the five measures rated) to this educational situation, and hence, does not possess a high degree of validity.

However there are reasons that probably contribute to these low correlations. These reasons are as follows: 1. The teachers tended to be generous and over-rate the pupils. Only three students were placed down in the very poor end of the scale; 2. the teachers stated that they could not rate the specific personality traits independently of each other. Each rating is affected by the general attitude of the teacher toward the pupil; 3. if each student could have been rated by at least three teachers, and the pooled judgment taken the reliability of rating would have increased. One rating is probably highly unreliable; 4. scores on the test may have been fictitious for some students because of falsifica-

tion; 5. maladjustment shown on the inventory may not be visible in classroom situations.

For these reasons it is impossible to say if the test is or is not a valid measure of personality adjustment. It would seem, however, that it is safe to conclude that it is at least not a valid indicator of school relations such as prevail at this educational situation.

CHAPTER IX.

Intercorrelations and Interpretation
of the
Relationships Among the Test Variables

One of the most important considerations in any study of the analysis of personality traits is the inquiry into the intercorrelations among these traits. All degrees of relationship are of prime importance, from the chance correlations between traits indicating the uniqueness of these variables to the correlations which indicate some, or a high degree, of relationship among traits.

Table XXII. gives the coefficients of correlations among the test variables for 250 students in Grade VIII. The data in Table XXII. indicate that in the main there are significant relationships between the various subtests. Hence, subtests are probably not measuring uncorrelated unique traits. The correlation between the self adjustment score and the social adjustment score is .70. When corrected for attenuation, this becomes .83., indicating that the two scales do not measure two distinct aspects of personality adjustment.

Correlation cluster analysis, correlation-profile analysis and factor analysis were used in an attempt to discover the organization underlying the California Test of Personality.

TABLE XXII

INTERCORRELATIONS OF GRADE X. STUDENTS -250 Students.

	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Self Adjustment	.40	.41	.57	.73	.69	.58	.70	.32	.49	.38	.27	.46	.42	.91
2 Self-Reliance		.21	.15*	.37	.40	.47	.41	.12*	.44	.30	.35	.30	.26	.56
3 Sense of Personal Worth			.20	.68	.29	.36	.49	.19	.45	.19	.26	.39	.34	.63
4 Sense of Personal Freedom				.31	.24	.36	.33	.00*	.09*	.17	.57	.15	.17	.42
5 Feeling of Belonging					.39	.36	.55	.11*	.27	.25	.08*	.26	.23	.65
6 Withdrawing Tendencies						.45	.54	.23	.27	.44	.51	.36	.33	.67
7 Nervous Symptoms							.53	.12	.36	.46	.51	.40	.24	.86
8 Social Adjustment								.60	.67	.75	.68	.65	.62	.92
9 Social Standards									.22	.32	.21	.33	.18	.37
10 Social Skills										.27	.24	.43	.33	.51
11 Anti-Social Tendencies											.36	.45	.33	.61
12 Family Relations												.33	.25	.60
13 School Relations													.30	.59
14 Community Relations														.54
15 Total Adj.														

* Not significant at the 1% level; all others are significant at the 1% level.

Correlation Cluster Analysis.

A correlation cluster may be defined as a group of trait elements which correlate highly for all possible pairings of items in a cluster (Cattell 17, p.76). The number of clusters which can be obtained from our table of intercorrelations depends on the arbitrary level of inter-correlation accepted as defining a cluster, and on the grouping of the variables. In order to be admitted to a cluster in the present study each variable was required to correlate at least plus .4 with every other member of the cluster.

Four main clusters were determined by this method. Table XXIII presents these clusters with the residual subtests or traits whose correlations were not satisfactorily congruent with the main clusters. Each pair in a residual does, however, intercorrelate at least to the extent of plus .4. The lines in the table show the overlap or intercorrelations of one cluster with another and the overlap of residuals with the main clusters.

These clusters are themselves considerably inter-correlated. "Nervous symptoms" is found in each of the four main clusters, "withdrawing tendencies" is found in three and "anti-social tendencies" is found in two. Res-idual cluster (e) overlaps with the second main cluster. Such evidence suggests that not only are the subtests

TABLE XXIII

SUBTESTS FALLING IN SIMILAR CORRELATION CLUSTERS. [1]

CLUSTERS

1. Nervous ———————> 2. Nervous ———————> 3. Nervous ——————>4. Nervous
   Withdrawing ————> Withdrawing ————> Withdrawing ———> School
   Self-Reliance   Family   Anti-Social   Anti-
                                                           Social

RESIDUALS

(a) Skills ————————> (b) Skills ———>(c) Skills   (d) Belonging (e) Personal
                                                                    (Freedom
    School   Self-Reliance Personal Worth>Personal Worth > Family
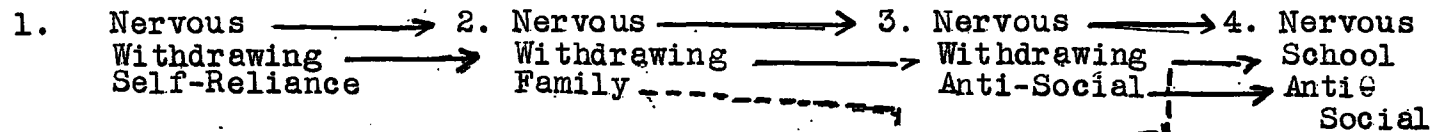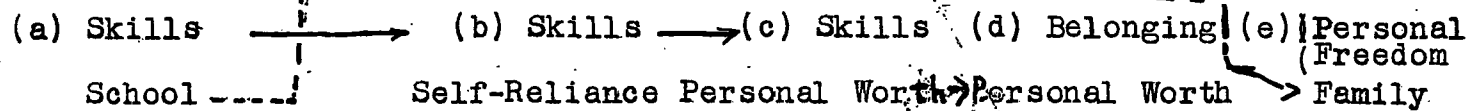
[1]
    Only an abbreviated title of each subtest has been given

called "nervous symptoms", "withdrawing tendencies" and
"anti-social tendencies" measuring somewhat the same
aspect of adjustment, but also that these subtests are
measuring things in common with some of the other subtests.

Correlation-Profile Analysis.

Tryon's (92) method of correlation-profile analy-
sis was also used to determine the organization of the
intercorrelations. This method attempts to discover clus-
ters by studying the columns of correlation coefficients
in a correlation matrix. The members of a cluster have
similar profiles as regards their correlations with all
the other variables. The members of such a cluster do not
necessarily have to correlate highly with one another as
they do in the method of correlation cluster.

Correlation-profile analysis yielded three clus-
ters of traits for the table of intercorrelations. Clus-
ter one included nervous symptoms, withdrawing tendencies,
community relations, school relations, and anti-social
tendencies. The traits in this cluster show positive
correlations with every other trait. Cluster two is com-
posed of social skills, social standards, self-reliance
and personal freedom. There is a fairly marked relation-
ship of this cluster with the first cluster. The items
describing these traits imply components of self-assurance
in different types of situations. Cluster three, composed

of sense of personal worth, feeling of belonging and family relations, is not very clearly defined. The traits in this cluster show positive correlations with every trait. This cluster has a great deal in common with cluster two. This cluster seems to depict a factor determining cordial relationship with people in general.

The first cluster of the correlation-profile analysis is somewhat similar to the four main cluster found by the correlation cluster method. Nervous symptoms, withdrawing tendencies, anti-social tendencies and school relations found in cluster one of the profile-analysis also appear in the four main correlation clusters. The third cluster of the profile analysis is similar to the residual correlation cluster of feeling of belonging and sense of personal worth.

Factor Analysis of Sub-tests

Multiple-factor analysis was used first of all to discover if there are underlying, basic factors in terms of which the twelve sub-tests may be expressed, and second, to identify these functional unities or factors. Table XXIVI. presents the results of the factor analysis of the correlation matrix for Grade VIII. students using the general factor method described by Burt (14, p.461 - 467. The results obtained are first approximations only.

TABLE XXIV.
FACTOR LOADINGS, COMMUNALITIES, RELIABILITIES, SPECIFICITIES AND
THE VARIANCES ATTRIBUTABLE TO UNIQUENESS AND TO SAMPLING ERRORS
FOR THE SUBTESTS - TWO HUNDRED AND FIFTY STUDENTS IN GRADE VIII.
..ORIGINAL TEST.

SUBTEST	FACTOR			h^2	rtt	Speci-ficity	Unique-ness	Error Variance
	I.	II.	III.					
Nervous Symptoms	.684	.250	-.127	.547	.58	.033	.453	.420
Withdrawing	.656	.123	.144	.466	.56	.094	.534	.440
Personal Worth	.640	-.466	.217	.756	.48	-.276	.244	.520
Family Relations	.625	.411	.250	.622	.75	.128	.378	.250
School Relations	.612	-.221	-.265	.494	.68	.186	.506	.320
Anti-Social	.591	.287	-.360	.561	.63	.069	.439	.370
Belonging	.589	-.446	.578	.880	.53	-.350	.120	.470
Self-Reliance	.567	.245	-.238	.338	.49	.152	.462	.310
Social Skills	.564	-.287	-.261	.469	.52	.051	.531	.480
Community Relations	.488	-.145	.210	.303	.74	.437	.697	.260
Personal Freedom	.434	.415	.309	.456	.30	-.156	.544	.700
Social Standards	.348	-.250	-.314	.284	.57	.286	.716	.430
EK^2/N	.312	.097	.094					

The loadings for each of the three factors with the sub-tests are in the columns headed I ., II ., III . The communalities are given in the column headed "h^2", which is the sum of the squares of the three factor loadings in a sub-test. It represents the total variance of a sub-test that can be attributed to these three factors. In order to make some further estimates concerning the variance of a sub-test, we need an estimate of the coefficient of reliability of the sub-test'. The Kuder-Richardson reliability coefficients are shown in the column headed "rtt".

In the column headed "specificity" are given the specificities of the sub-tests. These are found from the relation: specificity = rtt - h^2. The specificity of a sub-test is that part of its variance attributable to factors belonging to that sub-test alone. The column headed "Uniqueness" is found from the equation: uniqueness = 1 - h^2. It is the sum of the variances of each sub-test produced by factors other than the three found in this test, or it is all the variance that is a result of the specific and error factors combined. The last column contains the error variance of each sub-test. The determiners of this variance differ from sub-test to sub-test. It is found by the relation: error variance equals uniqueness minus specificity. The total.

variance, which is equal to one, is the sum of rtt plus error variance, or the sum of h^2 plus uniqueness, or the sum of h^2 plus specificity plus error variance.

Before we attempt to identify and name the three factors, let us observe some general facts about Table XXIII. The first row of Table XXIV, which has to do with the sub-test called "Freedom from Nervous Symptoms" is interpreted as follows: It has a positive loading of .684 with Factor I. This sub-test has small loadings with Factors II. and III. Approximately 55 per cent. (h^2 = .547) of the total variance of this sub-test is accounted for by the three factors, 3 per cent. (specificity = .033) by factors belonging to this test alone, and 42 per cent. (error variance = .420) by errors of measurement. In a similar fashion are all the other sub-tests interpreted from the data in Table XXIII.

"Social Standards" contribute very little to any of the three factors. This may be due to the fact, that according to the item analysis, it lacks a high degree of internal consistency. Over 75 per cent. of the variances for "sense of personal worth" and "feeling of belonging" are accounted for by these three factors; and "nervous symptoms", "family relations," and "anti-social tendencies" are faily well accounted for by the same factors.

"Nervous symptoms" is largely determined by Factor I. and it has an unknown variance or specificity of three per cent. "Withdrawing tendencies" is also a relatively pure measure of Factor I., and has an unknown variance of only nine per cent. "Community relations" is to a large extent determined by Factor I., but its determination is still forty-three per cent. unknown, the largest specificity factor found in any sub-test.

In general, the data in Table XXIII. indicate the greater part of the variance of each sub-test, apart from error variance, can be attributed to three factors. While the unknown variance varies from 3 to 43 per cent., most of the sub-tests have very small unknown variances.

Identification of Factors

Let us now attempt to identify and name the three factors indicated by the analysis. The factor analysis method does not supply names with which to describe psychologically the entities derived by the method. The identification of factors in the present study is based upon an examination of items in the tests, and upon an inspection of the sigma and numerical values of the factor loadings. Thurstone's measure of relative importance ($\Sigma K^2/N$) has been calculated for each factor and has been used as a guide in listing each factor in columnar order in Table XXIV. Thurstone's measure of relative

-82-

importance is the sum of the squares of the factor loadings divided by the number of sub-tests, and it indicates the contribution of each factor to the total variance of all the sub-tests.

The first factor accounts for 31 per cent.of the total variance. All of the sub-tests are positively loaded with the first factor. "Nervous symptoms" and "withdrawing tendencies" are most heavily weighted with this factor, with "sense of personal worth", "family relations" and "school relations" following in that order. These tests might comprise evidence for the more familiarly known neurotic tendencies characterized by nervousness and withdrawing. Students making low scores on these tests would be characterized by poor personality integration. Hence Factor I. seems to be measuring a general adjustment factor, one which emphasizes freedom from nervousness and withdrawing tendencies.

The second factor accounts for 10 per cent.of the total variance. Its factor loadings are partly positive and partly negative. It is thus a bipolar factor. The factor loadings are positive for "nervous symptoms", "withdrawing tendencies","family relations", "anti-social tendencies", "self-reliance" and "sense of personal freedom". negative for "sense of personal worth", "school relations", "feeling of belonging", "social standards", "family relations" and "sense of personal freedom" have the highest positive load-

ing factor. The two tests which have the highest negative weighting with the second factor are "sense of personal worth" and "feeling of belonging". We may infer that positive values of the factor indicate a sense of security, and the negative values, a sense of personal inadequacy. Hence the second factor may be best described as a sense of personal security or self-assurance.

The third factor is harder to interpret for this group of students, - it contributes 9 per cent. of the total variance. This third factor tends to be doubly bipolar; that is, its factor loadings for the six sub-tests which all had positive loadings with the second factor are now half positive and half negative; and the factor loadings which all had negative factor loadings with the second factor are now half positive and half negative. This third factor, therefore, probably indicates two distinct sub-classifications: 1. first of all, it divides the six sub-tests which had positive factor loadings with the second factor into (a) a sub-group of three, which appear to represent a sense of personal freedom, and (b) a sub-group of three, which appear to represent freedom from anti-social tendencies; 2. and secondly, it divides the remaining six sub-tests into (a) a sub-group of three, which represent a feeling of belonging, and (b) a sub-group of three, which appear

to represent a respect for social standards. The third factor shows a heavy and specific positive loading in the measure of feeling of belonging. Whatever entity is being measured seems to relate primarily to cordial relations with people and respect for social standards.

The findings of factor analysis tend to corroborate and elucidate the data found by correlation cluster analysis and correlation-profile analysis. Factor one found by factor analysis is remarkably similar to cluster one found by correlation profile analysis. The four main clusters found by correlation cluster analysis showed that nervous symptoms, withdrawing symptoms and anti-social tendencies were the main determining sub-tests for these clusters. All of these sub-tests are also heavily loaded with factor one. Factor two is somewhat similar to cluster two of the correlation profile analysis. The residual traits of the correlation cluster analysis appear to have much in common with factor two. Factor three is approximately the same as cluster three of the correlation profile analysis.

Chapter X

Summary and Conclusions

The purpose of this study was to make a comprehensive statistical evaluation of the California Test of Personality, Intermediate Series, Form A. This test was given to 173 boys and 155 girls in ten classes in Grade VIII, and 125 boys and 125 girls in eight classes in Grade X. All subjects were tested as a group in their respective classes at the Kitsilano Junior-Senior High School, Vancouver, British Columbia. Of the students originally tested, 100 students in each of the grades were retested approximately six and one half months later.

In resume, one may say that within the limits of this study the following results appear:-

1. Grade VIII and Grade X students differ significantly in their mean scores at the 1% level on self adjustment, sense of personal worth, social adjustment, freedom from anti-social tendencies, school relations and total adjustment.

2. Canadian students differ from the American sample, to such an extent that the manual norms would appear to be of little value in the school system where this study took place.

3. Grade VIII girls and boys differ significantly in their mean scores at the 1% level on self reliance, freedom from nervous symptoms, social skills,

freedom from anti-social tendencies and community relations.

4. At the 1% level there are significant differences between mean scores of Grade X boys and girls on self reliance, sense of personal worth, feeling of belonging, social standards and social skills.

5. Grade VIII girls and Grade X girls differ significantly in their mean scores at the 1% level on self adjustment, self reliance, sense of personal worth, freedom from withdrawing tendencies and total adjustment.

6. At the 1% level there are significant differences between mean scores of Grade VIII boys and Grade X boys on self reliance, sense of personal worth, feeling of belonging, social standards, social skills and freedom from anti-social tendencies.

7. At the 1% level Grade VIII girls and Grade X boys differ significantly in their mean scores on self adjustment, sense of personal freedom, freedom from withdrawing tendencies and social standards.

8. Grade VIII boys and Grade X girls differ significantly in their mean scores at the 1% level on self adjustment, sense of personal worth, freedom from withdrawing tendencies, freedom from nervous symptoms, social skills, freedom from anti-social tendencies, school relations and total adjustment.

9. At the 1% level the following distributions are significantly skewed in a negative direction for Grade

VIII students: self adjustment, self reliance, sense of personal worth, sense of personal freedom, feeling of belonging, social standards, family relations and community relations.

10. At the 1% level the following distributions are significantly skewed in a negative direction for Grade X students: sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies, freedom from nervous symptoms, family relations, community relations and total adjustment.

11. Kuder-Richardson reliabilities for the various measures for the Grade VIII group, on the original testing, were between .44 and .91, and for Grade X pupils the Kuder-Richardson reliabilities were between .30 and .88 for the various measures on the original testing.

12. Test-retest reliabilities ranged between .39 and .84 for the Grade VIII group, and test-retest reliabilities were between .42 and .80 for the Grade X group .

13. The validity of an item depends considerably upon the criterion that was used, not all items being valid according to all three criteria used in the present study.

14. The values of item validities, that is the item phi coefficients, vary considerably from grade to grade.

15. Mean item validities-phi coefficients - are greatest when the criterion is score on each subtest.

16. Mean values of the phi coefficients are practically similar for self, social and total adjustment criteria.

17. At the 1% level 77% of all items are valid for Grade VIII pupils according to subtest validity, whereas, only 66% of all items are valid for Grade X pupils.

18. The three best subtests, according to agreement with subtest score, for Grade VIII students are freedom from withdrawing tendencies, freedom from nervous symptoms and freedom from anti social tendencies.

19. For both grades, according to each of the three criteria, the social standards subtest is the test most lacking in item validity.

20. The correlation between the California Test of Personality and the Detroit Adjustment Inventory is .51, and this correlation becomes .65 when corrected for attenuation.

21. Correlations between five measures on the California Test of Personality and teacher ratings of adjustment vary from -.145 to +.225.

22. The correlation between the self adjustment and the social adjustment score is .70, and when corrected for attenuation, this becomes .83.

23. In the main there are significant relationships

between the various subtests.

24. A correlation cluster analysis revealed four main clusters of traits, among the subtests. There clusters were themselves considerably intercorrelated.

25. Correlation-profile analysis yielded three clusters of traits among the subtests.

26. A factor analysis of the subtests by the Burt general factor method indicates that three factors will account for most of the relationships among the various subtests of the California Test of Personality.

27. The findings of factor analysis tend to corroborate and elucidate the data found by correlation cluster analysis and correlation-profile analysis.

In resume of these results, one may say that within the limits of this the following general conclusions

Study

appear:

1. The data suggest that where there are significant differences in the mean scores at the 1% level between groups that such groups should be scored on a separate set of norms. This would mean Grade VIII students and Grade X students should be scored on different norms for self adjustment, sense of personal worth, social adjustment, freedom from anti social tendencies, school relations and total adjustment. Significant sex differences exist on various measures, both within grades and between grades. Where significant sex differences exist, a separate set of

norms should be used for each sex.

2. The manual norms would appear to be of little value in the school system where this study took place.

3. Because of the high average scores on the measures of this test and the extreme negative skewness on maᵑy of these measures, these measures probably do not discriminate between those students who are exceptionally well adjusted from those who are well adjusted.

4. The Kuder-Richardson reliabilities of the subtests indicate that they are not high enough for individual diagnosis. The total adjustment score for Grade VIII pupils is the only measure sufficently reliable for individual diagnosis.

5. The test-retest reliabilities indicate that what is being measured is perhaps something transitory, rather than the fundamental pattern or organization of personality.

6. According to the item analysis, the test appears to be more valid or internally consistent for Grade VIII students than for Grade X students.

7. Items are more valid when correlated with subtest total score than when correlated with self or social or total adjustment score. Because of this fact it is suggested that the scores on the subtests may be more meaningful than those on self adjustment, social adjustment or total adjustment.

8. The correlation between the California Test of Personality and the Detroit Adjustment Inventory indicates that they measure something in a consistent manner. The correlation between these two measures has given us an inferential estimate that they may have some validity.

9. If the teacher ratings of student adjustment are highly reliable and valid, then it follows that the California Test of Personality does not possess a high degree of validity. The results indicate that the California Test of Personality is not a valid indicator of student adjustment in school situations such as prevail at the educational situation where this study was made.

10. In the main there are significant relationships between the various subtests. Hence, subtests are probably not measuring uncorrelated, unique traits.

11. The high correlation between self adjustment and social adjustment indicate that the two scales do not measure two distinct aspects of personality adjustment.

12. Three factors or cluster of traits will account for most of the relationships among the subtests. One factor was identified as a general adjustment factor, one which emphasizes freedom from nervousness and withdrawing tendencies. The second factor may best be described as a sense of personal security or self assurance. Whatever entity the third factor is measuring, it seems to relate primarily to cordial relations with people and respect for social standards.

Appendix A

Copies of test s used

CALIFORNIA TEST OF PERSONALITY—INTERMEDIATE Form A

A PROFILE OF PERSONAL AND SOCIAL ADJUSTMENT

Devised by Willis W. Clark, Ernest W. Tiegs, and Louis P. Thorpe

Name..Date.................................Sex: Boy-Girl

School...Age...........Last Birthday.........................

Teacher...Grade...................

COMPONENTS	Pos-si-ble Score	Stu-dent's Score	Per-cent-ile Rank	PERCENTILE (Chart Student's Percentile Rank Here)
1. Self Adjustment	90			
A. Self-reliance	15			
B. Sense of Personal Worth	15			
C. Sense of Personal Freedom	15			
D. Feeling of Belonging	15			
E. Withdrawing Tendencies (Freedom from)	15			
F. Nervous Symptoms (Freedom from)	15			
2. Social Adjustment	90			
A. Social Standards	15			
B. Social Skills	15			
C. Anti-social Tendencies (Freedom from)	15			
D. Family Relations	15			
E. School Relations	15			
F. Community Relations	15			
TOTAL ADJUSTMENT	180			

PERCENTILE

INSTRUCTIONS TO STUDENTS

After each of the following questions, make a circle around the YES or NO. For example, if you have a dog at home make a circle around YES. Do the other two the same way.

A. Do you have a dog at home? YES NO
B. Can you drive a car? YES NO
C. Did you go to school last Friday? YES NO

On the next pages are questions. The questions are not right or wrong, but show what you think, how you feel, or what you do about things?

Go right on from one page to another until you have finished them all.

INTERESTS AND ACTIVITIES

First look at each thing in this test. Make a circle around the **L** for each thing that you like or would very much like to do. Then make a circle around the **D** for things you really do.

1. L D Play the radio
2. L D Read stories
3. L D Go to movies
4. L D Read comic strips
5. L D Work problems
6. L D Study history
7. L D Study science
8. L D Study literature
9. L D Do cross-word puzzles
10. L D Study trees
11. L D Study birds
12. L D Study animals
13. L D Study butterflies
14. L D Draw or paint
15. L D Work in laboratory
16. L D Model or design
17. L D Do housework
18. L D Sing
19. L D Play the piano
20. L D Make a scrapbook
21. L D Keep a diary
22. L D Write poems
23. L D Speak pieces
24. L D Play an instrument
25. L D Visit museums
26. L D Collect stamps

27. L D Collect coins
28. L D Collect autographs
29. L D Collect pictures
30. L D Use a camera
31. L D Sew or knit
32. L D Repair things
33. L D Make boats
34. L D Make airplanes
35. L D Make a radio
36. L D Work with tools
37. L D Have a garden
38. L D Drive an automobile
39. L D Play with pets
40. L D Raise animals
41. L D Go fishing
42. L D Climb or hike
43. L D Skate
44. L D Ride a bicycle
45. L D Ride a horse
46. L D Practice first aid

———————

47. L D Play cards
48. L D Play dominoes
49. L D Play checkers
50. L D Play chess

51. L D Go to church
52. L D Go to Sunday School
53. L D Belong to a club
54. L D Belong to YMCA , or YWCA
55. L D Go to parks
56. L D Engage in sports
57. L D Go to a circus
58. L D Sing in a chorus
59. L D Sing in a glee club
60. L D Belong to a gang
61. L D Play ping pong
62. L D Play croquet
63. L D Play ball
64. L D Play tennis
65. L D Go hunting
66. L D Go riding with others
67. L D Play in a band
68. L D Play in an orchestra
69. L D Go to church socials
70. L D Go to parties
71. L D Go to dances
72. L D Be an officer of a club
73. L D Be a class officer
74. L D Go camping

SECTION 1 A

1. Do you keep on working even if the job is hard? YES NO

2. Is it hard for you to be calm when things go wrong? YES NO

3. Does it usually bother you when people do not agree with you? YES NO

4. When you are around strange people do you usually feel uneasy? YES NO

5. Is it easy for you to admit it when you are in the wrong? YES NO

6. Do you have to be reminded often to finish your work? YES NO

7. Do you often think about the kind of work you want to do when you grow up? YES NO

8. Do you feel bad when your classmates make fun of you? YES NO

9. Is it easy for you to meet or introduce people? YES NO

10. Do you usually feel sorry for yourself when you get hurt? YES NO

11. Do you find it easier to do what your friends plan than to make your own plans? YES NO

12. Do you find that most people try to boss you? YES NO

13. Is it easy for you to talk to important people? YES NO

14. Do your friends often cheat you in games? YES NO

15. Do you usually finish the things that you start? YES NO

Score Section 1 A.................................

SECTION 1 B

16. Are you often invited to parties where both boys and girls are present? YES NO

17. Do you find that a good many people are mean? YES NO

18. Do most of your friends seem to think that you are brave or strong? YES NO

19. Are you often asked to help plan parties? YES NO

20. Do people seem to think that you have good ideas? YES NO

21. Are your friends usually interested in what you are doing? YES NO

22. Are people often unfair to you? YES NO

23. Do your classmates seem to think you are as bright as they are? YES NO

24. Are the other students glad that you are in their class? YES NO

25. Do both boys and girls seem to like you? YES NO

26. Do you have a hard time doing most of the things you try? YES NO

27. Do you feel that people do not treat you as well as they should? YES NO

28. Do many of the people you know seem to dislike you? YES NO

29. Do people seem to think you are going to do well when you grow up? YES NO

30. Do you find that people do not treat you very well? YES NO

Score Section 1 B.................................

SECTION 1 C

31. Are you allowed to say what you think about most things? YES NO

32. Are you allowed to choose your own friends? YES NO

33. Are you allowed to do many of the things you want to do? YES NO

34. Do you feel that you are punished for too many little things? YES NO

35. Do you have enough spending money? YES NO

36. Are you usually allowed to go to socials where both boys and girls are present? YES NO

37. Do your folks usually let you help them decide about things? YES NO

38. Are you scolded for things that do not matter much? YES NO

39. Are you allowed to go to as many shows and entertainments as your friends? YES NO

40. Do you feel that your friends can do what they want to more than you can? YES NO

41. Do you have enough time for play and fun? YES NO

42. Do you feel that you are not allowed enough freedom? YES NO

43. Do your folks let you go around with your friends? YES NO

44. Do you help pick out your own clothes? YES NO

45. Do other people decide what you shall do most of the time? YES NO

Score Section 1 C............................

SECTION 1 D

46. Do you find it hard to get acquainted with new students? YES NO

47. Are you considered as strong and healthy as your friends? YES NO

48. Do you feel that you are liked by both boys and girls? YES NO

49. Do most people seem to enjoy talking to you? YES NO

50. Do you feel that you fit well into the school where you go? YES NO

51. Do you have enough good friends? YES NO

52. Do your friends seem to think that your folks are as successful as theirs? YES NO

53. Do you often feel that teachers would rather not have you in their classes? YES NO

54. Are you usually invited to school and neighborhood parties? YES NO

55. Is it hard for you to make friends? YES NO

56. Do you feel that your classmates are glad to have you in school? YES NO

57. Do members of the opposite sex seem to like you as well as they do your friends? YES NO

58. Do your friends seem to want you with them? YES NO

59. Do people at school usually pay attention to your ideas? YES NO

60. Do the other boys and girls seem to have better times at home than you do? YES NO

Score Section 1 D............................

SECTION 1 E

61. Have you noticed that many people do and say mean things? YES NO

62. Does it seem as if most people cheat whenever they can? YES NO

63. Do you know people who are so unreasonable that you hate them? YES NO

64. Do you feel that most people can do things better than you can? YES NO

65. Have you found that many people do not mind hurting your feelings? YES NO

66. Would you rather stay away from parties and social affairs? YES NO

67. Have you often felt that older people had it in for you? YES NO

68. Do you have more problems to worry about than most boys or girls? YES NO

69. Do you often feel lonesome even with people around you? YES NO

70. Have you often noticed that people do not treat you as fairly as they should? YES NO

71. Do you worry a lot because you have so many problems? YES NO

72. Is it hard for you to talk to classmates of the opposite sex? YES NO

73. Have you often thought that younger boys and girls have a better time than you do? YES NO

74. Do you often feel like crying because of the way people neglect you? YES NO

75. Do too many people try to take advantage of you? YES NO

Score Section 1 E.....................................

SECTION 1 F

76. Do you frequently have sneezing spells? YES NO

77. Do you sometimes stutter when you get excited? YES NO

78. Are you often bothered by headaches? YES NO

79. Are you often not hungry even at meal time? YES NO

80. Do you usually find it hard to sit still? YES NO

81. Do your eyes hurt often? YES NO

82. Do you often have to ask people to repeat what they just said? YES NO

83. Do you often forget what you are reading? YES NO

84. Are you sometimes troubled because your muscles twitch? YES NO

85. Do you find that many people do not speak clearly enough for you to hear them well? YES NO

86. Are you troubled because of having many colds? YES NO

87. Do most people consider you restless? YES NO

88. Do you usually find it hard to go to sleep? YES NO

89. Are you tired much of the time? YES NO

90. Are you often troubled by nightmares or bad dreams? YES NO

Score Section 1 F.....................................

SECTION 2 A

91. Is it all right for one to avoid work that he does not have to do? YES NO

92. Is it always necessary to keep promises and appointments? YES NO

93. Is it necessary to be kind to people you do not like? YES NO

94. Is it all right to make fun of people who have peculiar notions? YES NO

95. Is it necessary to be courteous to disagreeable persons? YES NO

96. Does a student have the right to keep the things that he finds? YES NO

97. Should people have the right to put up "keep off the grass" signs? YES NO

98. Should a person always thank others for small favors even though they do not help any? YES NO

99. Is it all right to take things that you really need if you have no money? YES NO

100. Should rich boys and girls be treated better than poor ones? YES NO

101. Is it all right to laugh at people who are in trouble if they look funny enough? YES NO

102. Is it important that one be friendly to all new students? YES NO

103. When people have foolish beliefs is it all right to laugh at them? YES NO

104. If you know you will not be caught is it ever all right to cheat? YES NO

105. Is it all right to make a fuss when your folks refuse to let you go to a movie or party? YES NO

Score Section 2 A...

SECTION 2 B

106. When people annoy you do you usually keep it to yourself? YES NO

107. Is it easy for you to remember the names of the people you meet? YES NO

108. Have you found that most people talk so much you have to interrupt them to get a word in edgewise? YES NO

109. Do you prefer to have parties at your own home? YES NO

110. Do you usually enjoy talking to people you have just met? YES NO

111. Do you often find that it pays to help people? YES NO

112. Is it easy for you to pep up a party when it is getting dull? YES NO

113. Can you lose games without letting people see that it bothers you? YES NO

114. Do you often introduce people to each other? YES NO

115. Do you find it hard to help plan parties and other socials? YES NO

116. Do you find it easy to make new friends? YES NO

117. Are you usually willing to play games at socials even if you haven't played them before? YES NO

118. Is it hard for you to say nice things to people when they have done well? YES NO

119. Do you find it easy to help your classmates have a good time at parties? YES NO

120. Do you usually talk to new boys and girls when you meet them? YES NO

Score Section 2 B...

121. Do you have to get tough with some people in order to get a fair deal?   YES NO

122. Do you find that you are happier when you can treat unfair people as they really deserve?   YES NO

123. Do you sometimes need to show anger to get your rights?   YES NO

124. Do your classmates often force you to fight for things that are yours?   YES NO

125. Have you found that telling falsehoods is one of the easiest ways for people to get out of trouble?   YES NO

126. Do you often have to fight for your rights?   YES NO

127. Do your classmates often try to blame you for the quarrels they start?   YES NO

128. Do you often have to start a fuss to get what is coming to you?   YES NO

129. Do people at school sometimes treat you so badly that you feel it would serve them right if you broke some things?   YES NO

130. Do you find some people so unfair that it is all right to be mean to them?   YES NO

131. Do you often have to push younger children out of the way to get rid of them?   YES NO

132. Do some people treat you so mean that you call them names?   YES NO

133. Is it all right to take things away from people who are unfair?   YES NO

134. Do you disobey teachers or your parents when they are unfair to you?   YES NO

135. Is it right to take things when people are unreasonable in denying them?   YES NO

136. Are your folks fair about it when they make you do things?   YES NO

137. Do you often have good times at home with your family?   YES NO

138. Do you have good reasons for liking one of your folks better than the other?   YES NO

139. Do your folks seem to think that you will be a success?   YES NO

140. Do your folks seem to think you do your share at home?   YES NO

141. Do your folks seem to feel that you are interested in the wrong things?   YES NO

142. Do you and your folks agree about things you like?   YES NO

143. Do members of your family start quarrels with you often?   YES NO

144. Do you prefer to keep your friends away from your home because it is not attractive?   YES NO

145. Are you often accused of not being as nice to your folks as you should be?   YES NO

146. Do you have some of your fun when you are at home?   YES NO

147. Do you find it difficult to please your folks?   YES NO

148. Have you often felt as though you would rather not live at home?   YES NO

149. Do you sometimes feel that no one at home cares about you?   YES NO

150. Are the people in your home too quarrelsome?   YES NO

Score Section 2 C.......................   Score Section 2 D.......................

151. Have you found that your teachers understand you? YES NO

152. Do you like to go to school affairs with members of the opposite sex? YES NO

153. Is some of your school work so hard that you are in danger of failing? YES NO

154. Have you often thought that some teachers care little about their students? YES NO

155. Do some of the boys and girls seem to think that you do not play as fair as they do? YES NO

156. Are some of the teachers so strict that it makes school work too hard? YES NO

157. Do you enjoy talking with students of the opposite sex? YES NO

158. Have you often thought that some of the teachers are unfair? YES NO

159. Are you asked to join in school games as much as you should be? YES NO

160. Would you be happier in school if the teachers were kinder? YES NO

161. Do you have better times alone than when you are with other boys and girls? YES NO

162. Do your classmates seem to like the way you treat them? YES NO

163. Do you think the teachers want boys and girls to enjoy each other's company? YES NO

164. Do you have to keep away from some of your classmates because of the way they treat you? YES NO

165. Would you stay away from school oftener if you dared? YES NO

166. Do you often visit at the homes of your boy and girl friends in your neighborhood? YES NO

167. Do you have a habit of speaking to most of the boys and girls in your neighborhoods? YES NO

168. Do most of the boys and girls near your home disobey the law? YES NO

169. Do you play games with friends in your neighborhood? YES NO

170. Do any nice students of the opposite sex live near you? YES NO

171. Are most of the people near your home the kind you can like? YES NO

172. Are there boys or girls of other races near your home whom you try to avoid? YES NO

173. Do you sometimes go to neighborhood parties where both boys and girls are present? YES NO

174. Are there people in your neighborhood that you find it hard to like? YES NO

175. Do you have good times with the boys and girls near your home? YES NO

176. Are there several people living near you whom you would not care to visit? YES NO

177. Is it necessary to be nice to persons of every race? YES NO

178. Are there any people in your neighborhood so annoying that you would like to do something mean to them? YES NO

179. Do you like most of the boys and girls in your neighborhood? YES NO

180. Do you feel that the place where you live is not very interesting? YES NO

Score Section 2 E.................................

Score Section 2 F.................................

Det. Ad. Inv.

TELLING WHAT I DO

By Harry J. Baker

Alpha Form for Junior and Senior High Schools

Name..Boy..................Girl..................Grade..................
First   Last

Age..School..
Years   Months

City..State..Date..

The following exercises have five different answers. Next to the answers are the letters A, B, C, D, and E. You are to put a circle around the letter next to the answer which most nearly fits you.

Some of these things we may know about you already, but we want you to tell us yourself. It is the purpose to help you with any problems you may have.

There is no time limit, but please keep working and do not waste time. Hand in your booklet as soon as you are finished. Please be sure to answer all the exercises.

1. About my health
A. I am not sick very often.
B. Being sick does not worry me.
C. I am never sick.
D. I don't believe I will ever be well.
E. My health is only fair.

2. About being thin or fat
A. I am neither thin nor fat.
B. I don't mind being a little fat.
C. They tease me for being very thin.
D. I don't mind being a little thin.
E. They tease me for being very fat.

3. About being tall or short
A. They tease me for being very short.
B. They tease me for being very tall.
C. I don't mind being a little short.
D. I like being a little tall.
E. I am neither tall nor short.

4. About my skin
A. My pimples (acne) bother me a lot.
B. It is nice and clear.
C. My skin is too oily and shiny.
D. My few pimples do not bother me.
E. My skin is too dry and scaly.

(Go to the next column.)

5. About my heart
A. I believe it is about average.
B. I must avoid hard play.
C. I never think about it.
D. The doctor says it is all right.
E. I can't play at all.

6. About my bed
A. It is only a couch or cot.
B. It is a little better than average.
C. It is just average.
D. I have a very good bed.
E. It is very hard, so I don't sleep well.

7. About how I sleep
A. I always get plenty of sleep.
B. Noise often keeps me awake late.
C. I usually get about enough sleep.
D. I am often short of sleep.
E. I have many dreams and nightmares.

8. About sleeping alone
A. I hate having to sleep two in a bed.
B. I have a bed and room to myself.
C. We sleep crowded; three or more in a bed.
D. Two of us sleep together fairly well.
E. We have separate beds in the same room.

9. About eating together
A. Eating together goes fairly well.
B. We don't like eating together very well.
C. It is pleasant most of the time.
D. We always have a good time eating together.
E. Eating is a time to scold and quarrel.

10. About liking foods
A. I like most kinds of foods.
B. I eat mostly cake and candy.
C. I enjoy all kinds of foods.
D. I have to be careful about what I eat.
E. I always get angry if food is not just right.

11. About my face and hands
A. I am sometimes praised for having them clean.
B. It is quite hard to be always cleaning them.
C. They are usually quite dirty.
D. I am rather proud to have them usually clean.
E. They are just about average.

12. About my hair.
A. I think others admire it.
B. I am rather proud of it.
C. I keep it as good as others do.
D. I worry because it never looks nice.
E. They often make fun of it.

13. About my clothes
A. They never seem to look well.
B. I dress as well as my playmates.
C. I set a good example about my clothes.
D. I am often praised about my clothes.
E. They don't fit very well.

14. About my teeth
A. I worry because they look bad.
B. They are just about average.
C. I take pride in giving them good care.
D. They bother a little once in a while.
E. They ache and need fixing.

15. About keeping clean
A. I do as well as most people.
B. I keep a very good standard.
C. I do fairly well some of the time.
D. I am pretty careless about it.
E. Others tease me for being too clean.

16. About my fingernails
A. They just grow and break off.
B. I worry because I bite them off.
C. I just can't help biting them.
D. I usually keep them in fair shape.
E. I always take good care of them.

17. About blushing
A. I boast that I never blush.
B. I seldom blush.
C. I often blush a little.
D. Others sometimes tease me about it.
E. I worry because I am always blushing.

18. About getting dizzy
A. I worry because I am often dizzy.
B. I seldom get dizzy.
C. I never get dizzy.
D. It does not bother to be dizzy once in a while.
E. I grew out of being dizzy.

19. About sitting still
A. I am always able to sit still.
B. I can't sit still very often.
C. I can sit as still as most others do.
D. I usually can sit still.
E. I never seem able to sit still.

20. About fainting
A. I have never fainted.
B. I faint once in a while.
C. I faint quite often.
D. I am no worse than most people.
E. I sometimes feel like fainting.

21. When my parents are sick
A. I try to hide my worry.
B. I worry much of the time.
C. I help and usually don't worry.
D. I worry myself sick too.
E. I am sure they will get well.

22. About the world coming to an end
A. I never think about it.
B. I worry once in a great while.
C. It bothers me sometimes.
D. I don't worry; can't do anything about it.
E. I worry about it much of the time.

23. About daydreaming
A. I worry because I daydream most of the time.
B. I never daydream at all.
C. My daydreaming does not mean much to me.
D. I have a few spells of daydreaming.
E. I seldom do it at all.

24. When I must make up my mind
A. I worry because I can't do it quick enough.
B. I worry because I can't seem to do it.
C. I always do it right away.
D. I am as quick as others about it.
E. I can do it after a while.

25. When they laugh at me
A. It worries me very much.
B. I worry a little more than I should.
C. I can laugh too, with them.
D. I am like others are about it.
E. I usually don't worry about it.

26. About thunderstorms
A. I enjoy them.
B. I sometimes get scared.
C. I try not to be afraid.
D. I don't pay much attention.
E. I am always very scared.

27. About being alone in the dark
A. I try not to be scared.
B. I try not to think about it.
C. It never scares me at all.
D. I am sometimes scared a little.
E. I am probably scared quite badly.

28. When I am up in a high place
A. I am all right if I try hard.
B. I get scared and want to jump.
C. I am probably more scared than I would admit.
D. I know I am a little scared.
E. It does not bother me at all.

29. When I meet a stranger alone
A. I am often quite scared.
B. I never let it bother me.
C. Most of them are probably all right.
D. It is hard not to be a little scared.
E. Probably a little scared; won't admit it.

30. When I must recite
A. I have a little stage fright.
B. I usually don't mind it.
C. I get along about as well as the others.
D. I usually get scared.
E. I always enjoy it.

31. About temper tantrums
A. I have tantrums once in a while.
B. I often get angry but no tantrums.
C. I have tantrums quite often.
D. I never have tantrums or get angry.
E. I get a little angry sometimes.

32. When I break some of my things
A. I know it is my own fault.
B. I get very angry at myself.
C. I am more careful next time.
D. I believe it is just my poor luck.
E. It is hard not to get angry.

33. If someone hurts me
A. I hurt them right back.
B. I ask them nicely not to do it again.
C. I think they did not mean to do it.
D. I try to avoid them next time.
E. I just don't seem to notice it.

34. When someone breaks my things
A. I try not to be upset.
B. I ask them to be more careful.
C. I think it was just an accident.
D. I break something for them.
E. I try to stay away from them.

35. When others are getting hurt
A. I don't like to have it happen.
B. I sometimes try to stop it.
C. It is hard not to get angry.
D. It is probably none of my business.
E. I get angry and fight for them.

36. About blind people
A. I am glad if others help them.
B. I just go on because they can't see me.
C. I pretend I did not see them.
D. I think they will be all right by themselves.
E. I am glad to help them myself.

37. When I get hurt
A. I am seldom sorry for myself.
B. I just reason it out.
C. I am glad when others pity me.
D. I feel very sorry for myself.
E. I am sometimes a little sorry for myself.

38. When I see crippled people
A. I just don't seem to notice them.
B. I hope others will help them.
C. I always try to help them.
D. I sometimes want to help them.
E. I try to avoid them.

39. When I see helpless old people
A. I sometimes pity them a little.
B. I probably pay no attention to them.
C. I hope they are cared for.
D. I always want to help them.
E. I often pity them.

40. When I see poor people
A. I hope things will get better.
B. I help them all I can.
C. I am not sorry; it's their fault.
D. I don't think much about it.
E. I hope others will help them.

41. About being in a crowd
A. I always enjoy it.
B. Like it some, once in a while.
C. Usually don't like it.
D. I find excuse to get away.
E. Neither like nor dislike it.

42. About talking to friends
A. I sometimes like to talk a little.
B. I always like to do my share of talking.
C. I don't care whether I talk or not.
D. I never talk much.
E. I hope they do the talking.

43. About going to parties
A. I like them very much.
B. I never go to any.
C. I don't care much for them.
D. I don't mind once in a while.
E. I go only when urged.

44. About helping people get acquainted
A. I always try to avoid it.
B. I do very little about it.
C. I always help them get acquainted.
D. I like to do it sometimes.
E. I believe they have met before.

45. About being shy when in a crowd
A. I am never shy in a crowd.
B. I don't think much about it.
C. I am always very shy.
D. I am usually quite shy.
E. I am probably a little shy.

46. About the way I dress
A. I usually am fairly happy about it.
B. I don't think much about it.
C. Sometimes I am a little ashamed.
D. I feel ashamed most of the time.
E. I am always proud of my clothes.

47. About being homely or good-looking
A. I am usually happy about my looks.
B. I am quite happy about my good looks.
C. I believe I am average in looks.
D. It worries me because I am homely.
E. Little homely but try not to worry.

48. About my school marks
A. It's not my fault that they are poor.
B. I am quite ashamed of my poor marks.
C. I am very proud of my school marks.
D. They are just average.
E. I am usually happy about my school marks.

49. About getting on school teams
A. I am proud to be on them.
B. I enjoy being on them.
C. I am not among the few who get on.
D. It worries me very much that I don't make them.
E. I worry a little not to make them.

50. About being popular
A. I worry because I am not popular.
B. I am happy and proud to be popular.
C. I am just about like most others.
D. It is nice to be a little popular.
E. I am not popular, but it does not worry me.

51. About ever becoming a leader
A. I am going to do what I can.
B. My chances are rather poor.
C. I have high hopes for it.
D. I know I never will.
E. I probably have a chance.

52. About ever getting rich
A. I am quite hopeful that I will be rich.
B. I expect to be neither rich nor poor.
C. I hope I will not be very poor.
D. I would like to be a little rich sometime.
E. I will probably be quite poor.

53. About being happy or sad
A. I am a little sad sometimes.
B. I am quite unhappy most of the time.
C. I am about average.
D. I am always very happy.
E. I am quite happy sometimes.

54. About getting a job
A. I worry that I will never get one.
B. I am very sure I will get one.
C. It's no use worrying if I don't.
D. I think my chances are pretty good.
E. I think my chances are only fair.

55. About the future of the world
A. It will probably stay about as it is.
B. I hope it will not get too bad.
C. I hope it will get some better.
D. I am sure it will get much better.
E. I think it is very dark.

56. About studying at home
A. It is always easy to let it slide.
B. I have to try hard to do it.
C. I do it just fair.
D. It is easy to do; I like it.
E. I find excuses not to do it.

57. About eating too much
A. I never eat too much.
B. I always eat too much.
C. I try hard not to eat too much.
D. I eat as everybody else does.
E. I find many excuses to eat all I want.

58. About controlling my fears
A. I try, but without much success.
B. I have few or none; easy to control.
C. I just can't control them.
D. I don't have very many fears.
E. I can usually do it fairly well.

59. About doing right
A. I go along as most people do.
B. I often find excuses for not doing right.
C. I must try to make myself do right.
D. It is always easy to do right.
E. I often don't do right.

60. About making up my mind
A. It is easy to do some of the time.
B. I want to do it myself but seldom do.
C. It is always easy to do.
D. It is neither easy nor hard.
E. I just let others do it for me.

61. About speaking English at home
A. My parents speak English fairly well.
B. My parents don't speak much English.
C. No one speaks much English in our home.
D. We all speak English all the time.
E. We speak English only part of the time at home.

62. About owning our home
A. Our home is partly paid for.
B. It is paid for, or nearly all.
C. We pay rent but seldom move.
D. We all have to live with other relatives.
E. We rent and move often.

63. About the health of my parents (or step-parents)
A. Both are sick most of the time.
B. One is sometimes sick.
C. They are well most of the time.
D. Both are always very well.
E. Father often sick; can't work much.

64. About father (or stepfather) working
A. He would like to work but is not able.
B. He works most of the time.
C. He always has a steady job.
D. He works about half the time.
E. He has been out of work a long time.

(Go to the next column.)

65. About the houses on our street
A. I think they are fairly good.
B. I like them very much.
C. Most of them are rather poor.
D. I think the houses are all very poor.
E. Houses are not as nice as where we used to live.

66. About holiday parties and birthday parties
A. We have very few parties.
B. We never have any parties.
C. Our parties always get too wild.
D. We often have nice parties.
E. We have many very nice parties.

67. About books and magazines at home
A. They are too high-brow for me.
B. They are good; I enjoy them.
C. I don't care much about any of them.
D. The ones we have are not very good.
E. We don't have hardly any at all.

68. About my parents spending time with me
A. They never do anything with me.
B. We go out together once in a while.
C. We go out together quite often.
D. It's a very long time since they did.
E. They don't do much with me but let me go.

69. About my parents' friends
A. They are all very nice.
B. My parents have almost no friends.
C. I neither like nor dislike them.
D. I think they are just about average.
E. I usually don't like them.

70. At home we are
A. Always cheerful and happy.
B. Often sad and rather unhappy.
C. Always gloomy and unhappy.
D. Usually cheerful and happy.
E. Neither sad nor happy.

71. About getting along with my brothers and sisters
A. I have no brothers or sisters.
B. We argue sometimes.
C. It goes fairly well most of the time.
D. We argue and fight all the time.
E. We always get along very well.

72. About my parents punishing me
A. They are fair but firm.
B. I get treated like everyone else.
C. It varies from easy to strict.
D. They are always too strict.
E. They are always too easy on me.

(Turn to the next page.)

73. About having me help at home
A. My parents are too easy about it.
B. They are fair, but expect me to do it.
C. It goes along about average.
D. They vary from easy to strict.
E. Both are a little too strict.

74. About being the favorite child
A. The others think I am the favorite.
B. One of the others is the favorite.
C. We are all treated alike.
D. I have no brothers or sisters.
E. There is only a little jealousy.

75. About my parents watching me
A. They are always watching me.
B. They don't pay as much attention as they should.
C. They know they can trust me.
D. I am as well off as others.
E. They check up once in a while.

76. About being allowed to do things
A. I probably have too much liberty.
B. Most of my friends have more liberty.
C. I have about as much liberty as my friends.
D. I have a reasonable amount of liberty.
E. I am not allowed to do anything at all.

77. About feeling awkward
A. I am a little awkward sometimes.
B. I am getting over being all arms and legs.
C. I have never been awkward.
D. I am about like my friends in awkwardness.
E. Lately I seem to be all arms and legs.

78. About my thinking I am grown up
A. I am getting quite a good start.
B. I just don't seem to be grown up at all.
C. I am not grown up except about a few things.
D. I am sort of in-between.
E. I am quite well grown up now.

79. About arguing with my parents
A. We argue about everything all the time.
B. We seldom have arguments.
C. We never have any arguments.
D. We argue about quite a few things.
E. It is just fair.

80. About deciding for myself when younger
A. No one did much about it.
B. I was allowed to decide some things.
C. Once in a while I decided something.
D. They always decided everything for me.
E. They usually let me decide many things.

81. About marking up school desks and walls
A. I have done it a few times.
B. I did it once or twice.
C. I mark them quite a lot.
D. I have never done it.
E. I sometimes want to, but don't do it.

82. About liking my school duties
A. I like them all very much.
B. I don't like any of them.
C. I try to make myself like them.
D. I like some and dislike others.
E. I dislike most of them.

83. About talking and whispering in class
A. I do it quite a lot.
B. I don't do it but often want to.
C. I never talk except to recite.
D. I do it in one or two classes.
E. I sometimes do, to answer others.

84. About liking my teachers
A. It's about even on likes and dislikes.
B. I like most of them.
C. I like all of them.
D. I don't like any of them very much.
E. I dislike most of them.

85. About being truant from school; that is, being absent without permission
A. I have never wanted to be truant.
B. I have been truant several times alone.
C. I go when others ask me to.
D. I sometimes feel like it, but never do.
E. I go and get others to go.

86. When we lose a game
A. We must expect to lose sometimes.
B. I sometimes get real angry about it.
C. It's hard not to get angry.
D. I think it's just our bad luck.
E. We try harder next time.

87. About taking my turn at play
A. I don't mind being among the last.
B. I am glad to take my turn any place.
C. I am willing to do what the others do.
D. I see to it that I am among the first.
E. It bothers me some to be among the last.

88. About playing according to (by) the rules
A. I just play them to suit myself.
B. I do as well as the others do about them.
C. I am glad to play by the rules.
D. I think most of them are all right.
E. I get away with as much as I can.

(Go to the next column.)

(Go to the next page.)

89. About starting games
A. I can do it but don't like to.
B. I never start them.
C. I sometimes do it when I am asked.
D. I start them most of the time.
E. I sometimes do it myself.

90. About sharing my things with others
A. I guess it works both ways.
B. I always share gladly.
C. I usually don't like to share with others.
D. I refuse even when asked.
E. I share with others quite often.

91. About giving to charity
A. I always give all I can.
B. I often give a little.
C. I give only when I am made to.
D. I never give; don't have enough myself.
E. I give once in a while.

92. About taking more than my share
A. I try not to take more than my share.
B. I never take more than my share.
C. I do like most people do.
D. I do it whenever I can.
E. I don't; I might get caught.

93. When I borrow something
A. I pay it back right away.
B. I hope they will forget about it.
C. It soon slips my mind.
D. I pay it back after a while.
E. I pay back if asked to.

94. If there is a question of right or wrong
A. If wrong is easier, I do it.
B. I don't try very hard to do right.
C. I always try to do right.
D. I intend to do right, but sometimes don't.
E. I do what the others do.

95. About telling the truth
A. I always tell the truth.
B. I intend to tell the truth.
C. I have a poor reputation.
D. I am sometimes careless about it.
E. I do fairly well.

96. About traffic tickets
A. No tickets, but some warnings.
B. I don't drive a car.
C. I have had one or two tickets.
D. I have had quite a few.
E. I drive but never had a ticket.

(Go to the next column.)

97. About teasing little children
A. I try hard not to tease them.
B. I never hurt or tease them.
C. I don't, if they keep out of my way.
D. I guess I like to tease them.
E. I tease them but don't mean to.

98. About running away from home
A. I ran away once.
B. I ran away several times.
C. I never wanted to.
D. I went once, but came right back.
E. I thought about it, but never did.

99. About taking other people's things
A. I never take anything.
B. I sometimes take them.
C. They suspect me sometimes.
D. It is easy just to help myself.
E. I always expect to give it back.

100. About probation or detention home
A. Have had both quite a few times.
B. Never had either.
C. On probation once; never in detention home.
D. Was taken once to be questioned.
E. Have had both once or twice.

101. About my parents and my friends
A. They get along fairly well.
B. Most of my friends don't like my parents.
C. My parents trust me out with my friends.
D. They always try to choose my friends.
E. They let me choose some of my friends.

102. About my friends and pals
A. They are all very good.
B. They are just about average.
C. I hope they are not bad.
D. I believe that most of them are good.
E. I am afraid most of them are rather bad.

103. About the number of friends I have
A. I have only one or two.
B. I don't seem to have hardly any.
C. I have a few only.
D. I have many friends.
E. I am fairly well fixed for friends.

104. About making new friends
A. It is very hard for me to do.
B. I like to make new friends.
C. I can do it but don't like to.
D. A little hard, but I like to do it.
E. It is neither easy nor hard.

(Turn to the next page.)

105. About having dates
A. Neither my parents nor I do much about it.
B. I have dates quite often.
C. I believe my parents would not let me.
D. I am too young for dates.
E. My parents leave it up to me.

106. About boxing
A. I would dislike it very much.
B. I might do it but would not like it.
C. I don't care much about it.
D. I like to box very much.
E. I am quite interested in it.

107. About reading the sporting page
A. I always read it.
B. I never look at it.
C. I read it nearly every day.
D. I don't pay much attention to it.
E. I read it once in a while.

108. About liking to go hunting
A. I might do it but would not like to.
B. I would like it very much.
C. I would not like it at all.
D. I never thought much about it.
E. I would probably like it a little.

109. About reading the fashion page
A. Usually I would not read it.
B. I read it almost every day.
C. I would not unless something very unusual.
D. I would not even look at it.
E. I always read it.

110. About what I like to read
A. I like mystery and adventure best.
B. Mostly about family and home.
C. I like Wild West stories best.
D. I like all kinds of stories.
E. I like love stories best.

111. About my hobbies
A. I have several; mostly alone with them.
B. I spend a little time on hobbies.
C. I don't have any at all.
D. We share many hobbies together at home.
E. I have as many as my friends do.

112. About the movies
A. I learn a few useful things from them.
B. I get ideas from them for my hobbies.
C. Sometimes I learn a little from them.
D. I go just for something to do.
E. I go just for a good time.

(Go to the next column.)

113. About reading books and magazines
A. I don't read hardly any at all.
B. I read the movie magazines.
C. I read mostly Collier's, Saturday Evening Post, or Reader's Digest.
D. I read only good fiction or novels.
E. I read mostly Wild West or love stories.

114. About listening to the radio
A. I listen to all the exciting adventures.
B. We listen to lots of the best music.
C. I pick out a few good programs.
D. I listen a little to different things.
E. I don't pay much attention to it.

115. About going to dances
A. I think I will like it later on.
B. I am too young except for school dances.
C. My parents don't pay much attention.
D. I often go to public dances.
E. I will never want to dance.

116. About deciding what work (job) I will do
A. I keep changing my mind.
B. I still don't have any idea.
C. I do some thinking about it.
D. I feel fairly sure about it.
E. I have already made up my mind.

117. About helping me decide my vocation
A. I sometimes listen to a little advice.
B. I am going to decide for myself.
C. No one is doing much about it.
D. My friends think they know what is best for me.
E. My parents are deciding for me.

118. About seeing people work at jobs I like
A. I have never seen anything that appeals.
B. They were poor workers; I could do better.
C. I have seen both good and poor workers.
D. I have seen only good workers.
E. I don't know whether they are good or poor.

119. In helping to decide my vocation (job)
A. I have read and talked about it.
B. No one gives me much help with it.
C. I have read a little about it.
D. I have talked to some workers about it.
E. I have never found out anything about it.

120. About my chances of success
A. I am sure I will succeed.
B. I don't have much idea about it.
C. I am just trusting to luck.
D. I think I have a good chance.
E. My chances are probably fair.

(Go back over each page to make sure you have indicated your response to each exercise. Then hand in your booklet.)

Appendix B ·

Speciman ofrat ing scale
and instructions

PERSONALITY TRAIT RATING SCALE

Graphic Rating by _____ Date _____

Directions for using rating scale.
Read the following directions very carefully.

1. Let these ratings represent your own judgment. Please do not confer with anyone in making them. Attempt to eliminate the opinion of other teachers.

2. In giving your rating on a particular personality trait, disregard for the moment every other trait but that one as specifically defined. Do not rate a student high on all traits simply because he (or she) is exceptional in some. A student may differ greatly in the following traits and rate high in terms of one and low in terms of another. Attempt to make real distinctions.

3. Before attempting to make out your report, it is necessary to have in mind the exact traits to be reported on. Read each definition carefully and rate in terms of it.

4. In each personality trait, compare the individual student with the average person of his age. When you have satisfied yourself on the standing of the student in the trait on which you are rating him, indicate your rating by making a check (X) on the line just where you think it ought to be. It is not necessary to locate the chock directly above a descriptive phrase. If you think the rating falls between two phrases, you may put the check at the appropriate point on the line. Before making your check, read very carefully the characterizations below the line.

5. To reach a more valid set of ratings you are provided with an estimation of the percentage of pupils that might be expected to fall within a certain portion of the line

5%	20%	50% of students	20%	5%

6. Note that in each case one end of the line represents one extreme for the trait in question, and the other end of the line the other extreme. The middle of the line represents an average amount of the trait. The average student should be placed in the middle of the line where 50% of all students would be placed.

7. Rate all the students on one trait before turning on to the next trait. Give a rating on each trait for every student. The ratings will be held absolutely confidential.

Trait 1.

School Relations. Consider ability to get along with his teachers and other students, whether he belongs to clubs, and enjoys other school activities.

Name

	Unable to get along in school relations	Often lacks interest and enjoyment in school relations	ʇWell balanced in school relations	Well balanced in most school relations	Shows genuine interest and enjoyment in school relations
	Unable to get along in school relations.	Often lacks interest and enjoyment in school relations	Well balanced in school relations	Well balanced in most school relations	Shows genuine interest and enjoyment in school relations
	Unable to get along in school relations	Often lacks interest and enjoyment in school relations	Well balanced in school relations	Well balanced in most school relations	Shows genuine interest and enjoyment in school relations
	Unable to get along in school relations	Often lacks interest and enjoyment in school relations	Well balanced in school relations	Well balanced in most school relations	Shows genuine interest and enjoyment in school relations

Trait 2.

Freedom from Nervous Symptoms. Consider whether he bites his fingernails, finds it hard to sit still, drums restlessly with his fingers on tables and chairs, has headaches and appears chronocally tired, whether he stutters when excited, or has muscle twitches.

Name

	Decidedly nervous	Shows one or more nervous symptoms	Normally free from nervous symptoms	Healthy and free from nervous symptoms	Excellent health
	Decidedly nervous	Shows one or more nervous symptoms	Normally free from nervous symptoms	Healthy and free from nervous symptoms	Excellent health
	Decidedly nervous	Shows one or more nervous symptoms	Normally free from nervous symptoms	Healthy and free from nervous symptoms	Excellent health
	Decidedly nervous	Shows one or more nervous symptoms	Normally free from nervous symptoms	Healthy and free from nervous symptoms	Excellent health
	Decidedly nervous	Shows one or more nervous symptoms	Normally free from nervous symptoms	Healthy and free from nervous symptoms	Excellent health

Trait 3.

Freedom from Withdrawing Tendencies. Consider whether he is characteristically sensitive, lonely and remains to himself; whether he substitutes fantasy for actual successes in real life, and given to self concern.

Name

Easily moved to loneliness, self consciousness	Tends to be lonely, and with-drawing	Usually outgoing, not given to self concern	Active, enjoys people	Keenly interested in things, and people
Easily moved to loneliness, self consciousness	Tends to be lonely, and with-drawing	Usually outgoing, not given to self concern	Active, enjoys people	Keenly interested in things, and people
Easily moved to loneliness, self consciousness	Tends to be lonely, and with-drawing	Usually outgoing, not given to self concern	Active, enjoys people	Keenly interested in things, and people
Easily moved to loneliness, self consciousness	Tends to be lonely, and with-drawing	Usually outgoing, not given to self concern	Active, enjoys people	Keenly interested in things, and people
Easily moved to loneliness, self consciousness	Tends to be lonely, and with-drawing	Usually outgoing, not given to self concern	Active, enjoys people	Keenly interested in things, and people

Trait 4

Freedom from Anti-Social Tendencies. Consider whether he is given to bullying, frequent disobedience and destructiveness of property; consider whether he endeavours to get his satisfactions in ways that are damaging and unfair to others.

Name

	Easily moved to quarrelling, bullying, and disobedience	Tends to be damaging and unfair to others	Normally free from anti-social tendencies	Well balanced in actions with others	Exceptional balance of responsiveness and control
	Easily moved to quarrelling, bullying, and disobedience	Tends to be damaging and unfair to others	Normally free from anti-social tendencies	Well balanced in actions with others	Exceptional balance of responsiveness and control
	Easily moved to quarrelling, bullying, and disobedience	Tends to be damaging and unfair to others	Normally free from anti-social tendencies	Well balanced in actions with others	Exceptional balance of responsiveness and control
	Easily moved to quarrelling, bullying, and disobedience	Tends to be damaging and unfair to others	Normally free from anti-social tendencies	Well balanced in actions with others	Exceptional balance of responsiveness and control
	Easily moved to quarrelling, bullying, and disobedience	Tends to be damaging and unfair to others.	Normally free from anti-social tendencies	Well balanced in actions with others	Exceptional balance of responsiveness and control

TOTAL ADJUSTMENT

Total Adjustment. Consider whether his total behavior adjustment is satis-
factory, or whether it is causing difficulty of any degree, that is, has he
made a relatively harmonious adjustment to the personal and social requirements
of life.

Name

	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent
	Very Poor	Poor	Average	Very good	Excellent

-94-

Appendix C

Phi Coëfficients for
each item according to
each of three crit eria

TABLE XXIV.

Validities of Items on Self-Reliance
According to Three Criteria

No.of Item	Sub-test Validity		Self-Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII	Gr.X
	φ	φ	φ	φ	φ	φ
1.	.30	.20	.20	.25	.12	.25
2.	.83	.44	.56	.07	.47	.47
3.	.25	.51	.41	.37	.21	.22
4.	.41	.68	.30	.54	.32	.72
5.	.37	.41	.34	.08	.31	.03
6.	.66	.37	.38	.22	.26	.30
7.	.21	.26	.08	.15	.08	.11
8.	.55	.52	.42	.42	.48	.33
9.	.48	.44	.34	.12	.35	.10
10.	.53	.19	.59	.18	.42	.20
11.	.43	.52	.32	.34	.24	.40
12.	.40	.22	.32	.23	.35	.12
13.	.38	.43	.21	.42	.27	.53
14.	.35	.21	.42	.13	.41	.21
15.	.44	.22	.67	.23	.28	.10

TABLE XXV

Validities of Items on Sense of
Personal Worth According to Three Criteria

	Sub-test Validity		Self-Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X.	Gr.VIII.	Gr.X.	Gr.VIII.	Gr.X
No. of Item	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
16	.44	.73	.38	.61	.21	.59
17	.35	.39	.47	.38	.50	.32
18	.29	.52	.21	.10	.11	.05
19	.53	.65	.21	.19	.22	.50
20	.60	.38	.42	.30	.30	.27
21	.52	.50	.42	.35	.39	.38
22	.38	.22	.45	.29	.47	.20
23	.58	.41	.49	.33	.47	.30
24	.43	.38	.30	.32	.30	.27
25	.35	.42	.20	.41	.18	.39
26	.37	.23	.45	.12	.32	.20
27	.41	.18	.33	.29	.71	.20
28	.21	.22	.10	.18	.00	.10
29	.41	.41	.26	.32	.31	.33
30	.24	.21	.28	.20	.25	.19

TABLE XXVI

Validities of Items on Sense of Personal
Freedom According to Three Criteria

No. of Item	Sub-test Validity		Self-Adjustment Validity		Total Adjustment Validity	
	Gr.VIII. ϕ	Gr.X. ϕ	Gr.VIII. ϕ	Gr.X. ϕ	Gr.VIII. ϕ	Gr. X. ϕ
31	.42	.23	.14	.24	.18	.21
32	.17	.00	.00	.00	.00	.00
33	.61	.42	.42	.39	.39	.22
34	.50	.42	.38	.43	.49	.39
35	.35	.41	.18	.19	.39	.12
36	.35	.00	.27	.09	.20	.10
37	.66	.57	.52	.29	.20	.38
38	.74	.63	.42	.23	.72	.24
39	.66	.57	.33	.41	.39	.18
40	.70	.68	.48	.48	.50	.37
41	.32	.41	.33	.41	.35	.41
42	.35	.62	.24	.30	.22	.45
43	.17	.21	.12	.09	.15	.10
44	.00	.19	.10	.09	.10	.10
45	.24	.29	.10	.21	.10	.21

TABLE XXVII

VALIDITIES OF ITEMS ON FEELING OF BELONGING
ACCORDING TO THREE CRITERIA

No. of Item.	Sub-test Validity		Self Adjustment Validity		Total Adjustment Validity	
	Gr. VIII.	Gr.X.	Gr.VIII.	Gr.X.	Gr.VIII.	Gr.X
	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
46	.41	.50	.32	.45	.31	.38
47	.38	.28	.28	.23	.20	.21
48	.23	.45	.20	.42	.10	.41
49	.46	.41	.22	.35	.29	.32
50	.42	.38	.28	.30	.25	.32
51	.20	.22	.20	.20	.20	.13
52	.41	.22	.27	.18	.23	.25
53	.47	.39	.26	.08	.10	.29
54	.41	.50	.28	.52	.30	.52
55	.38	.50	.39	.38	.35	.40
56	.38	.22	.21	.21	.32	.20
57	.42	.49	.32	.41	.30	.41
58	.01	.10	.00	.09	.00	.10
59	.62	.42	.46	.30	.42	.22
60	.31	.45	.20	.50	.18	.54

TABLE XXVIII

VALIDITIES OF ITEMS ON WITHDRAWING
TENDENCIES ACCORDING TO THREE CRITERIA

	Sub-test Validity		Self-Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII.	Gr.X.	Gr.VIII.	Gr.X.
No.of Item	φ	φ	φ	φ	φ	φ
61	.62	.73	.46	.47	.05	.42
62	.61	.39	.48	.22	.52	.22
63	.52	.53	.40	.35	.50	.37
64	.38	.45	.57	.39	.31	.39
65	.75	.63	.61	.41	.55	.30
66	.28	.21	.18	.32	.15	.28
67	.45	.22	.30	.21	.35	.21
68	.32	.50	.00	.45	-.11	.45
69	.48	.53	.32	.50	.24	.46
70	.47	.30	.40	.28	.73	.23
71	.38	.53	.32	.55	.29	.51
72	.32	.45	.28	.48	.64	.46
73	.42	.41	.42	.39	.42	.28
74	.22	.22	.23	.22	.25	.18
75	.41	.19	.39	.19	.33	.10

TABLE XXIX

Validities of Items on Nervous Symptoms
According to Three Criteria

No.of Item	Sub-test Validity		Self-Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X.	Gr.VIII	Gr.X.	Gr.VIII.	Gr.X
	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
76	.28	.00	.20	.11	.10	.10
77	.54	.41	.43	.19	.21	.19
78	.38	.48	.29	.21	.35	.10
79	.39	.50	.20	.18	.09	.30
80	.59	.64	.40	.38	.20	.32
81	.39	.58	.29	.39	.35	.31
82	.60	.58	.59	.45	.39	.38
83	.73	.67	.52	.38	.49	.45
84	.42	.30	.24	.22	.20	.27
85	.50	.50	.49	.37	.42	.22
86	.29	.42	.19	.33	.10	.38
87	.63	.38	.48	.32	.32	.22
88	.50	.41	.40	.26	.29	.26
89	.46	.52	.46	.46	.40	.60
90	.28	.20	.20	.19	.13	.18

TABLE XXX

Validities of Items on Social Standards
According to Three Criteria

No.of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII ϕ	Gr.X ϕ	Gr.VIII ϕ	Gr.X ϕ	Gr.VIII ϕ	Gr.X ϕ
91	.50	.53	.21	.21	.32	.28
92	.25	.21	.09	.19	.11	.00
93	.46	.59	.20	.42	.14	.32
94	.19	.28	.18	.19	.20	.09
95	.62	.63	.21	.51	.31	.43
96	.10	.21	.10	.10	-.01	.19
97	.41	.27	.21	.12	.30	.15
98	.12	.10	.00	.19	.00	.00
99	.42	.33	.24	.10	.12	.05
100	.10	.00	.00	-.10	.00	.09
101	.32	.41	.19	.32	.24	.32
102	.19	.10	.10	.00	.10	.09
103	.38	.43	.10	.20	-.09	.05
104	.20	.21	.15	.21	.10	.19
105	.62	.57	.41	.25	.32	.22

TABLE XXXI

Validities of Items on Social Skills
According to Three Criteria

No.of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII.	Gr.X
	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
106	.22	.27	.40	.15	.62	-.09
107	.38	.33	.09	.02	.53	.10
108	.20	.30	.49	.03	.50	.28
109	.62	.69	.22	.62	.13	.52
110	.70	.49	.34	.41	.23	.41
111	.00	.28	.10	.23	.00	.09
112	.52	.82	.26	.50	.32	.52
113	.21	.21	.30	.21	.13	.05
114	.68	.75	.38	.63	.32	.55
115	.71	.71	.19	.60	.13	.53
116	.38	.43	.20	.22	.21	.27
117	.27	.09	.20	.00	.21	.19
118	.41	.41	.33	.17	.33	.09
119	.56	.56	.28	.42	.29	.39
120	.46	.38	.35	.29	.44	.32

TABLE XXXII

Validities of Items on Anti-social Tendencies According to Three Criteria

No.of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII	Gr.X
	ϕ	ϕ	ϕ	ϕ	ϕ	ϕ
121	.76	.75	.61	.40	.55	.31
122	.77	.62	.63	.43	.52	.31
123	.83	.88	.52	.58	.51	.48
124	.41	.22	.39	.21	.44	.19
125	.39	.33	.41	.41	.37	.30
126	.69	.33	.52	.02	.52	.00
127	.42	.09	.26	.00	.40	.00
128	.42	.32	.45	.28	.39	.28
129	.32	.09	.32	.00	.32	.00
130	.69	.42	.54	.28	.49	.28
131	.40	.28	.26	.38	.29	.32
132	.62	.28	.62	.21	.52	.00
133	.42	.42	.22	.22	.28	.07
134	.62	.32	.52	.42	.49	.25
135	.31	.27	.11	.29	.15	.00

TABLE XXXIII

Validities of Items on Family Relations
According to Three Criteria

No. of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII	Gr.X
	φ	φ	φ	φ	φ	φ
136	.22	.22	.20	.10	.10	.13
137	.28	.49	.23	.42	.20	.45
138	.46	.62	.38	.31	.40	.32
139	.50	.30	.40	.30	.34	.33
140	.68	.45	.58	.45	.49	.42
141	.55	.31	.45	.28	.44	.28
142	.50	.48	.45	.46	.47	.32
143	.77	.58	.44	.32	.43	.32
144	.12	.32	.00	.33	-.07	.33
145	.62	.52	.40	.38	.36	.55
146	.20	.32	.11	.30	.20	.30
147	.56	.48	.34	.30	.30	.42
148	.69	.63	.62	.46	.60	.55
149	.62	.37	.57	.30	.65	.28
150	.45	.42	.40	.28	.31	.41

TABLE XXXIV

Validities of Items on School Relations According to Three Criteria

No.of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII ϕ	Gr.X ϕ	Gr.VIII ϕ	Gr.X ϕ	Gr.VIII ϕ	Gr.X ϕ
151	.49	.55	.20	.42	.32	.19
152	.30	.38	.31	.40	.21	.41
153	.33	.70	.18	.30	.33	.31
154	.63	.80	.46	.40	.38	.30
155	.22	.13	.32	.11	.35	.00
156	.62	.47	.45	.40	.31	.21
157	.23	.13	.21	.32	.23	.32
158	.68	.68	.47	.11	.38	.02
159	.38	.32	.35	.11	.22	.30
160	.62	.52	.50	.29	.38	.13
161	.27	.67	.41	.41	.31	.35
162	.20	.10	.19	.20	.19	.21
163	.39	.23	.22	.28	.25	.23
164	.42	.00	.21	.00	.35	.10
165	.52	.32	.32	.39	.35	.25

TABLE XXXV

Validities of Items on Community Relations
According to Three Criteria

No.of Item	Sub-test Validity		Social Adjustment Validity		Total Adjustment Validity	
	Gr.VIII	Gr.X	Gr.VIII	Gr.X	Gr.VIII	Gr.X
	φ	φ	φ	φ	φ	φ
166	.40	.52	.29	.44	.21	.54
167	.46	.50	.28	.39	.28	.32
168	.46	.21	.52	.11	.33	.00
169	.50	.47	.42	.31	.40	.06
170	.38	.68	.00	.55	.10	.33
171	.42	.41	.38	.37	.40	.34
172	.20	.00	.08	.19	.10	.17
173	.52	.62	.36	.42	.36	.46
174	.70	.59	.61	.62	.54	.41
175	.47	.53	.40	.48	.35	.12
176	.70	.62	.69	.68	.50	.42
177	.10	.30	.11	.43	.02	.23
178	.62	.21	.62	.22	.53	.10
179	.39	.28	.39	.42	.20	.23
180	.52	.59	.42	.57	.34	.59

BIBLIOGRAPHY

1. Allport, G. W.   Concepts of trait and Personality.
                         Psychol., Bull., 1927, 24, 284-293.

2.   ,   Test of ascendance-submission, J.
                         of Abnormal and Social Psychol.,
                         1928, 23, 118-136.

3.   ,   Personality: a Psychological
                         interpretation, New York, Henry
                         Holt and Co., 1937.

4. Baker, H. J.   Teacher's handbook for the Detroit
                         Adjustment Inventory, Bloomington,
                         Illinois: Public School Publishing
                         Co., 1942.

5. Bell, H. M.   Theory and practice of student
                         counselling, with special reference
                         to the adjustment inventory,
                         Stanford University: Stanford
                         University Press, 1935.

6. Bernreuter, R. G.   Theory and construction of the
                         personality inventory. J. of Social
                         Psychol., 1933, 4, 387-405.

7.   ,   Imbrication of tests of introversion-
                         extroversion. J. Social Psychol.,
                         1934, 5, 184-201.

8. Blair, G. M. and
    Clark, R.   Personality adjustments of ninth
                         grade pupils as measured by the
                         Multiple Choice Rorshack Test and
                         the California Test of Personality.
                         J. of Educ. Psychol., 1946, 37,13-20.

9. Boynton, P. L. and
    Walsworth, B.M..   Emotionality test scores of
                         delinquent and non-delinquent girls.
                         J. of Abnormal and Social Psychol.,
                         1933, 38, 87-92.

10. Brogden, H. E.   Factor analysis of forty character
                         tests. Psychol. Monographs, 1940,
                         52, 39-55.

11. Brogden, H. E. and   Primary traits in personality
    Thomas, W. F.   items purporting to measure
                          sociability. J. of Psychol.,
                          1943, 16, 85-97.

12. Brown, F.   Experimental study of the
                          validity and reliability of
                          the Brown Personality
                          Inventory for children. J.
                          of Psychol., 1944, 17, 75-89.

13. Burke, B.   Personality scores in relation
                          to measurement. J. of Social
                          Psychol., 1936, 7, 140-149.

14. Burt, C.   Factors of the Mind, London:
                          University of London Press, 1940.

15. Cattell, R.B.   Description of personality. I
                          Foundations of trait measure-
                          ment. Psychol. Review, 1943,
                          50, 559-94.

16.   ,   Description of personality. II
                          Basic traits resolved into
                          clusters. J. of Abnormal and
                          Social Psychol., 1943, 38,
                          476-507.

17.   ,   Description and Measurement of
                          Personality. New York: World
                          Book Co., 1946.

18. Clark, W. A. and   Further evidence on the
    Smith, L. F.   validity of personality invent-
                          ories. J. of Educ. Psychol.,
                          1942, 33, 81-91.

19. Crook, M. N.   Retest with the Thurstone
                          Personality Schedule after six
                          and one-half years. J. General
                          Psychol., 1943, 28, 111-120.

20. Darley, J. G. and   Factor analysis in the establish-
    McNamara, W. J.   ment of new personality tests.
                          J. of Educ. Psychol., 1940, 31,
                          321-

21. Edwards, A. L.   Statistical Analysis, New York:
                          Rinehart and Co. Inc., 1946.

22. Ellis, A.   Validity of personality questionn-
                          aires, Psychol. Bull, 1946, 43,
                          385-440.

23. Flannagan, J. C.   Factor Analysis in the Study of
                          Personality. Stanford University:
                          Stanford University Press, 1935.

24. Flemming, E. G   Validity of the Mathews Revision
    and Flemming, C. W. of the Woodworth Personal Data
                          Questionnaire. J. of Abnormal and
                          Social Psychol., 1929, 23, 500-06.

25. Galton, F.   Measurement of character. Fort-
                          nightly Review, 1884, 42, 179-185.

26. Garrett, H. E.   Statistics in Psychology and
                          Education: (2nd Ed.) New York:
                          Longmans, Green, 1940.

27. Garrett, H. E.,   Psychological Tests, Methods and
    and Schneck, M. R.   Results, New York, Harper and
                          Brothers, 1933.

28.   ,   Study of the discriminative value
                          of the Woodworth Personal Data
                          Sheet. J. of General Psychol, 1928,
                          1, 459-471.

29. Gibb, C. A.   Personality traits by factorial
                          analysis. Australusion J. Psychol
                          and Philos. 1942, 20, 1-27.
                          Referred to by Cattell, 1944(17).

30. Gilliland, A. R.   What do introversion-extroversion
                          tests measure? J of Abnormal and
                          Social Psychol, 1934, 28, 407-412.

31. Guilford, J. P.   Psychometric Methods. New York:
                          McGraw Hill Book Co; Inc., 1936.

32.   ,   Phi-coefficient and chi square
                          as indices of item validity.
                          Psychometrica, 1941, 6, 11-19.

33. Guilford, J. P.   Fundamental Statistics in
                             Psychology and Education, New York
                             McGraw Hill Book Co., Inc.,1942.

34. Guilford, J.P. and   Analysis of the factors in a
    Guilford, R. B.   typical test of introversion-
                             extroversion. J. of Abnormal and
                             Social Psychol.,1934. 28,377-99.

35.   Personality factors S, E and M.,
                             and their measurement: J.of
                             Psychol, 1936, 2, 109-27.

36.   Personality factors D, R, T, and
                             A. J.of Abnormal and Social
                             Psychol., 1939, 34, 21-36.

37.   Personality factors N and G D
                             J.of Abnormal and Social Psychol.,
                             1939, 34, 239-48.

38. Guilford, J.P. and   Age differences and sex differences
    Martin,H.   and emotional traits, J.of
                             General Psychol., 1944, 31,
                             219-229.

39. Hall, O.   Attitudes and Unemployment. New
                             York: Columbia University Press,
                             1934.

40. Harris, D.B., and   Study of the Maller and Boynton
    Dobelstein, D.A.   Personality Inventories. J. of
                             Educ. Psychol., 1938, 29,279-86.

41. Heidbreder, E.   Measuring introversion and extro-
                             version. J. of Abnormal and Social
                             Psychol, 1926, 21,120-134

42. Jackson, J.   Relative effectiveness of paper-
                             pencil test, interview and ratings
                             as techniques, for personality
                             evaluation. J. of Social Psychol,
                             1946, 23, 35-54.

43. Jasper, H. H.   Measurement of depression-elation
                             and its relation to a measure of
                             extroversion-introversion. J. of
                             Abnormal and Social Psychol.,1930,
                             25, 307-318.

44. Kelley, T.L.   Statistical Method. New York:
                            Macmillan, 1924.

45. Kelley, E.L.,   Ability to influence one's score
    Miles, C., and   on a typical pencil and paper test
    Terman, L.M.   of personality. Character and
                            Personality, 1935, 4, 206-215.

46. Keys, N. and
    Guilford, M.S.   Validity of certain adjustment
                            inventories in predicting problem
                            behavior. J. of Educ. Psychol,
                            1937, 28, 641-655.

47. Kling, C.   Statistical study of the relative
                            of neurosthenic, dyspeptic and
                            allergic symptoms. J. of General
                            Psychol., 1934, 10, 328-343.

48. Landis., C.   An attempt to measure emotional
                            traits in juvenile delinquency. In
                            Studies in the Dynamics of
                            Behavior, edited by Karl S. Lashley.
                            Chicago: University of Chicago
                            Press, 1932.

49. Landis, C., Zubin   Emperical evaluation of three
    J. and Kutz, S.E.   personality adjustment inventories.
                            J. of Educ. Psychol, 1935,26,
                            321-330.

50. Layman, E. M.   Item analysis of the adjustment
                            questionnaire. J. of Psychol, 1940,
                            10, 87-106.

51. Long, J.A. and   Validation of Test Items, Toronto:
    Sandiford, P.   University of Toronto Press, 1935.

52. Loofbourow, G.C. and
    Keys, V.   Group test of problem behavior
                            tendencies in junior high shcool
                            boys. J. of Educ. Psychol., 1933,
                            24, 641-653.

53. Lickert, R.   Technique for the Measurement of
                            Attitudes. New York: Columbia
                            University Press, 1932.

54. Martin, H. G.
Construction of the Guilford-Martin Inventory of Factors G-A-M-I-N. J. of Applied Psychol., 1945, 29, 298-300.

55. Mathews, E.
Study of emotional stability of children. J. of Delinquency,1923, 8, 1-40.

56. May, M. A.
Problems of measuring character and personality. J. of Social Psychol., 1932, 3, 131-145.

57. Mosier, C.
On the validity of neurotic questionnaires. J. of Social Psychol., 1938, 9, 3-16.

58. Murray, H. A.
Explorations in Personality, Toronto: Oxford University Press, 1938.

59. Murphy, G. and Murphy L.B., and Newcomb, T.M.
Experimental Social Psychology. Rev. Ed., New York: Harper Bros. 1937.

60. McLoy, C. H.
Factor analysis of personality traits to underlie character education. J. of Educ. Psychol., 1936, 27, 375.

61. McNamera, Ward Darley, J. G.
Factor analysis of test-retest performance on attitude and adjustment tests. J. of Educ. Psychol., 1938, 29, 652-64.

62. Pallister, H.
Negative or withdrawal attitude: a study in personality organization. Arch. Psychol., N.Y.. No. 15, 1938.

63. Perry, R. C.
Analysis of group factors in certain adjustment questionnaires. Psychol. Bull., 1933, 30, 598.

64. Pinter, R., and Forlano, G.
Four retests of a personality inventory. J. of Educ. Psychol., 1938, 29, 93-100.

65. Pinter, R., and
Validation of personality characteristics by outstanding characteristics of pupils. J. of Educ. Psychol., 1939, 30, 25-32.

66. Pinter, R., Loftus, J.J., Forlano, G., and Alster, B.
Aspects of personality, New York: Yonkers-on-Hudson; World Book Co., 1937.

67. Remmers, H.W., Whisler, L. and Duwald, V. H.
Neurotic indicators at the adolescent level. J. of Social Psychol., 1938, 9, 17-24.

68. Reyburn, H. A. and Taylor, J.G.
Factors in introversion and extroversion. Brit. J. Psychol., 1940, 31, 335-340.

69. Riggs, W. C. and Joyal, A.E.
Validation of the Loofbourow-Keys Personal Index of Problem Behavior in Junior High Schools. J. of Educ. Psychol, 1938, 29, 194-201.

70. Root, A.R and Root, E. B.
Study of the Neyman-Kohlstedt Diagnostic Test for Introversion-Extroversion. J. of Abnormal and Social Psychol., 1932, 26, 415-21.

71. Sletto, R.F.
Construction of Personality scales by the Criterion of Internal Consistency. Minneapolis: The Sociological Press, 1937.

72. Stagner, R.
Differential factors in the testing of personality I Sex differences II Differences in maturity. J. of Social Psychol., 1932, 3,477-487.

73. ,
Psychology of personality. New York: McGraw-Hill Book Co.,1937.

74. Stagner,
Diagnostic nature of introversion-extroversion items. Amer. J. Psychol. 1924, 46, 321-324.

75. Stephenson, W.
Inverted factor technique. Brit. J. Psychol, 1936, 26, 344-361.

114

76. Stockard, C. K.   Physical Basis of Personality.
                         New York. W. W. Norton Co.,
                         Inc., 1931.

77. Stogdill, E. and
    Thomas, M.E.   The Bernreuter Personality
                         Inventory as a measure of student
                         adjustment. J. of Social Psychol.
                         1939, 9, 299-315.

78. Symonds, P. M.   Diagnosing personality and
                         conduct. New York: The Century
                         Co., 1931.

79. Terman, L. M.   Measurement of personality.
                         Science, 1934, 80, 605-608.

80. Thomson, G.H.   Factorial analysis of human
                         ability. London: University of
                         London Press, 1939.

81. Thomson, W. A.   Evaluation of the P. Q. (Person-
                         ality Quotient) Test. Character
                         and Personality, 1938, 6, 274-292.

82. Thorndike, E. L.   Interest of adults. 2. The
                         intercorrelations of adult
                         interests. J. of Educ. Psychol.
                         1935, 26, 417-507.

83. Thorpe, L. P.   Psychological Foundations of
                         Personality. New York: McGraw-
                         Hill Book Co., 1938.

84. Thurstone, L. L. and Neurotic inventory. J. of
    Thurstone, T. G.   Social Psychol., 1930, 1, 1-29.

85. Tiegs, E., Clark, W. The California Test of
    and Thorpe, L. P.   Personality. J. of Educ. Research,
                         1941, 35, 102-108.

86.   , Manual of Directions, California
                         Test of Personality - Inter-
                         mediate Series, Los Angles;
                         California Test Bureau, 1942.

87. Traxler, A. E.   Reliability of the Bell
                        Inventories and their correlation
                        with teacher judgment. J. of
                        Applied Psychol., 1941, 25,672-678.

88.   ,   Use of tests and rating devices
                        in the appraisal of personality.
                        New York: Educational Records
                        Bureau, 1942.

89.   ,   Current construction and evaluation
                        of personality tests, Rev. Educ.
                        Research, 1944, 14, 55-66.

90.   ,   Techniques of Guidance. New York;
                        Harper, 1945.

91. Turney, A. and   Attempt to use the Bell Adjustment
    Fee, M.   Inventory for High School guidance.
                        School Review, 1936, XLIV, 193-198.

92. Tryon, R.C.   Cluster Analysis. Chicago: University
                        of Chicago Press, 1939.

93. Vernon, P.E. and   Test of Personal Values. J. of
    Allport, G. W.   Abnormal and Social Psychol, 1931,
                        26, 231-248.

94. Whisler, L. D   Multiple factor analysis of general-
                        ized attitudes. J. of Social
                        Psychol, 1934, 5, 283-297.

95. Willoughby, R. R.   Some proporties of the Thurstone
                        Personality Schedule and a suggest-
                        ed revision. J. of Social Psychol.
                        1932, 3, 401, 423.

96. Wolfle, D.   Factor analysis in the study of
                        personality. J. of Abnormal and
                        Social Psychol., 1942, 37, 393-397.

97. Zubin, J.   Method of internal consistency
                        for selecting test items. J. of
                        Educ. Psychol., 1934, 25, 345-356.