

AN EXPERIMENTAL INVESTIGATION OF THE DIFFERENCES BETWEEN
EUROPEAN AND NON-EUROPEAN SCHOOL CHILDREN ON A MEASURE OF PERSONALITY.

54

BY

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PART I.

THE TEST OF ASSERTION-SUBMISSION.

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INTRODUCTION.

The purpose of this study is to compare the scores obtained by European and Coloured school children on a measure of personality. The particular personality-trait chosen in this instance is that of Ascendance-Submission.

The writer first became interested in the questionnaire as a means of diagnosing and analysing personality; but the scope of this investigation was not limited to a mere application of the selected questionnaire to a single group of subjects. On further consideration it was decided to use the test in order to investigate so-called racial differences in personality. This plan could be carried out only by applying the same test to two different, yet comparable groups of subjects. The results of the investigation will be disclosed in the ensuing pages.

The trait of assertion-submission was chosen because in recent times it has achieved a certain degree of importance, particularly amongst American investigators of personality, and it was felt that it would be interesting to carry out work of a similar nature on South African subjects. It also appealed to the writer as a suitable medium whereby racial differences of a personality kind could be measured.

Furthermore, the writer wishes to stress the fact that the generally-accepted point of view as regards racial differences is that such differences, apart from indicating fundamental trends in racial constitution, are really an expression of varying mores, customs, and habits of thought and action. Therefore, the results of any questionnaire of adjustment, interests, or attitudes, must be interpreted in the light of an individual's background. An attempt has been made to consider the background of the subjects employed, in Part II. of this study, where, for this purpose, a specially-selected test of socio-economic level has been devised and applied.

In some respects a study of this kind may be regarded as a

further contribution to the age-old controversy of heredity versus environment, or nature versus nurture. But in reality the main object that the writer had in mind when setting out on this task was to investigate the applicability of such a test of personality; and this object was inspired by a suggestion taken from Cattell, the author of the test used in this work, when he states that he has published his tests in the hope that "other research workers will be stimulated to inquiry into the usefulness of this type of test in many different types of situation."

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PART 1.CHAPTER 1.(1) THE TEST OF ASSERTION - SUBMISSION.

As stated in the Introduction, the purpose or aim underlying this study is to compare the scores obtained by European and Coloured schoolchildren, on a certain measure of personality. The particular trait of personality chosen for this purpose is that one which is commonly called "Ascendance-Submission."

In the past a number of tests have been designed to measure this trait, foremost among them being Allport's Study of Ascendance-Submission. As no copies of this test were available to the present experimenter, another suitable measure of the trait had to be chosen. Various possibilities were considered but had to be abandoned due to difficulties in applying the tests, unsuitability of material, and other such factors. However, on Professor Reyburn's advice, the one finally selected was Cattell's "Tests of Temperament and Disposition", which is included in a work by the same author entitled, "A Guide to Mental Testing." The relevant section of the test, for our purpose, is that which falls under the heading of Set 1. According to Cattell, the items that constitute Set 1 of this test are supposed to measure three distinct traits. They are

- (i) Assertive, Submissive Disposition.
- (ii) Acquisitive Disposition, and
- (iii) Gregarious Disposition.

Set 1 is composed of thirty-six items, that is twelve items purporting to measure each of the three above mentioned traits. The twelve items concerned in measuring the "Assertive-Submissive" DISPOSITION ARE Items No. 1,4,7,10,13,16,19,22,25,28,31, and 34.

It is thus evident that the items measuring the three distinct

dispositions are interspersed with one another in a definite order of rotation. In this way Item 1 will measure Assertion-submission, Item 2 acquisitiveness, Item 3 gregariousness, and so on. The reasons for this alternation of items are as follows. If the twelve relevant items only were presented, the more intelligent subjects might perceive the plan and intention of the test, and therefore, to avoid this, the twenty-four items measuring the Acquisitive and the Gregarious dispositions were also included in the test forms, their function being to act as sort of "buffer" items of no value. In addition, the test was not labelled when it was administered to the subjects. These precautions are necessary in that a conscious realization of the purpose of the test would impair, or at least alter, the scores obtained.

The response to each item may receive one of three degrees of weight, that is, the score is 0, 1, or 2 points, for each individual on each item of the test. To elaborate further, Score 2 implies the strong projection of a certain motive, in this case, assertiveness. Score 0 implies submissiveness. Also, every question has a middle value alternative, as expressed by Score 1. The decision regarding the particular alternatives which shall score highly is not given arbitrarily by the designer of the tests, but is worked out on a correlation method described by Cattell in this book, "A Guide to Mental Testing".

Cattell refers to the tests as "Projection" tests of disposition. They constitute an attempt to assess disposition by methods less direct and requiring less co-operation from the subject than in the Ascendance-submission test of Allport. He uses the term "Projection tests" because, in reading a story, there is a tendency for most persons to project themselves into it, so that if they are required to complete it they will do so in the manner necessitated by their own emotional make-up. However, the story-form is unsuitable, since its parts are logically interdependent, so that a person who responds at a certain point in one way is constrained, (according to his degree of intelligence), to respond in the same way elsewhere.

For this reason, instead of the story-form, a series of independent statements of situations is preferable. Where the motive, attitude, or disposition is such that a person might be expected to be aware that he possessed it, and where it is socially approved, he will tend to project that disposition on to his admired characters. Similarly he will approve of any statement or generalization which commends that specific quality. On the other hand, where the motive, attitude, or disposition is unconscious, because disreputable, or for some similar reason, the person possessing it will tend to perceive it in the motives of other people. But apart from these special considerations, some projection of one's own mentality will of necessity occur whenever the nature of an obscure motive has to be inferred, or an impulse directed. Ideally, the motive should be twice or thrice removed (by steps of inference) from the given statement.

In a test of this kind it is essential to avoid:-

- (a) items in which the motive could be perceived very readily by the use of intelligence,
- (b) items in which habitual conventional responses would occur, and
- (c) items in which psychological experience and observation would infallibly point to a certain choice.

In preparing these tests for application, another factor that had to be taken into consideration was that we are dealing with American tests, and consequently it was found desirable at times to change some of the items in order to make them more comprehensible to South African subjects. For example, item No. 7 in the Cattell test read as follows:-
(The scoring of each alternative is given in brackets).

"At sea the admiral was the most important person present, and John

- | | |
|-----------------|-----|
| 1. tried | (1) |
| 2. soon managed | (2) |
| 3. was scared | (0) |

to go up and speak to him".

This item was changed by substituting the word "general" for the word "admiral", as it was felt that the word "general" would be more familiar, on the whole, to South African schoolchildren.

Item No. 28 was altered altogether, as it was thought that the

meaning was somewhat obscure. The original item read as follows:-

"After the Head Master corrected him for keeping the ball to himself, he ceased to speak to anyone, feeling very

1. Ashamed (0)
2. insulted (1)
3. 'fed up' (2)

The item substituted for it is:-

"When the salesman in the shop tried to force John to buy the article he didn't want, John said

1. "I'll come back tomorrow" (1)
2. "I don't want it, thank you." (2)
3. "Alright, I'll have it." (0)

(11) CATTELL'S RESULTS. - A SUMMARY.

The choice of subjects for this test was made in accordance with the results obtained by Cattell, and for this reason, it is advisable at this point to glance very briefly at his results.

He found that the tests were most successful when applied to 13- and 14- year-old children and to adults.

He also found that the norms for males and females are distinct.

The self-consistency, or reliability, of the tests proved to be satisfactory in his experiments, but the validity remained uncertain.

He concludes by stating that further experiment will in the course of time reveal ways of increasing the diagnostic dependability of the tests.

Whether the results obtained by Cattell will be confirmed by the present investigation, will be revealed in discussing the results of this study.

7.

CHAPTER 11.

(1) THE SUBJECTS.

The test was applied to 393 schoolchildren, representing two distinct racial groups, that is, European and non-European.

But, as stated above in the summary of the results obtained by Cattell, the norms for males and females have been found to be distinctly differentiated from one another. On the basis of this finding we have subdivided each of the two main groups according to the sex of the subjects. This division of the subjects into 4 groups has been maintained to a large extent throughout the present work.

The groups fall under the following headings:-

- (i) European boys
- (ii) Non-European boys
- (iii) European girls
- (iv) Non-European girls.

It was decided to employ approximately 100 subjects to represent each of the above four groups. But in the case of the European boys, circumstances did not permit the testing of more than 93 subjects.

The subjects were drawn from various schools in the suburbs of Cape Town, as outlined below:-

- (i) 93 European boys from the Rondebosch Boy's High School.
- (ii) 100 Non-European boys from the Wesley Training College and the Battwood Training College.
- (iii) 100 European girls from the Rustenburg Girls' High School.
- (iv) 100 Non-European girls from the Wesley Training College and the Battwood Training College.

All these subjects were equated for educational standard by limiting the scope of the enquiry to Standard VII. children only. It has been pointed out by Cattell that these tests, when applied to children, are most successful with 13- and 14- year-old children

The average age of Standard VII children falls within this range, and for this reason, the enquiry was confined to Standard VII schoolchildren only.

In addition it was considered essential to equate the subjects as to language. This was effected by using subjects from schools in which the medium of instruction is English; and in this way, a possible objection as regards the comprehension of the test-material by the Non-European subjects, is overruled.

In order to make a comparison between two groups it is necessary to work with comparable groups. These experiments were carried out in the Cape Province, and therefore the non-European group consisted entirely in Cape Coloured people drawn from the urban population. Now, these Cape Coloured people have in the course of time become Europeanized to a very large extent, due to the pressure of the demands made upon them, and the social conformity expected of them, by the environment in which they live. Consequently, we may look on them as a sort of lower substratum of the European population; and on these grounds they may be compared with the European subjects.

(11) THE METHOD OF APPLICATION OF THE TEST OF ASSERTION-SUBMISSION.

The test employed in the present investigation is a group test. The subjects were asked to provide either a pen or a pencil, but the test forms were supplied by the experimenter.

In order to create the correct atmosphere the subjects were informed that it was not a test in the sense of there being right and wrong answers. It was impressed on them that each response is equally correct, and that their choice of a response depended entirely on their own opinions. They were asked to co-operate by working with the experimenter and following her instructions, and by refraining from communicating with one another whilst filling in the forms provided to them.

Each test-form consisted of four pages. On page 1 could be found instructions and examples, and the thirty-six test items were arranged on the proceeding three pages. The subjects were then required to read the instructions given on page 1. These are the

instructions:-

In each of the following statements you have to underline one of the alternatives given. There is often little to choose between the alternatives, but always choose the one you like best. If a person, e.g. John, is described, assume that he is of the same age as yourself, unless otherwise stated.

You will be given a very limited time for each item, so that you must underline one alternative immediately you have read them through. If you have not already done this when the next item is called, you must do so instantly.

The attention of the subjects was then drawn to the two examples given at the foot of page 1. They read as follows:-

EXAMPLES.

Here are two examples, with the most common-sense alternative underlined in each case.

A. When the driver of the car saw that the road was blocked by a tree

1. he put on speed.
2. he blew his horn.
3. he slowed down.

B. When John was going to the party he put on his

1. working clothes.
2. nice new suit.
3. football boots.

When it was ascertained that the subjects understood quite clearly what was expected of them, they were told to begin. The experimenter called out, "Number 1", and allowed them approximately 25 - 30 seconds in which to respond to this item, after which she called "Number 2", and so on, for the thirty-six items of the test.

CHAPTER III.

WHAT IS ASSERTION - SUBMISSION?

Before going on to discuss the results obtained by this investigation, it would be as well to consider briefly what is meant by the trait "assertion-submission". Perhaps it has been best defined by Allport. He says :

"In most social situations comprising only two people there is psychologically a dominant personality and a submissive personality. It does not matter whether the relationship be friendly or inimical. Occasionally the roles of the persons may be reversed, when for instance, the conversation turns to a subject in which the experience of the submissive person is superior. Taking the aggregate of the responses over a period of time, however, it is often possible to detect an enduring disposition on the part of one of the pair to assume a role of supremacy, the other a role of subordination."

Therefore he concludes that any single act of dominance or submission may not be a chance reaction but rather an index to an abiding trait.

Anderson, (in an article in the Psychological Review of 1940, Volume XLVII) tackles the same problem of defining this trait by first emphasising the fact that the terms domination, dominance, and ascendancy, can be used interchangeably. He defines domination as "an attempt at atomistic living; the desires, purposes, standards, values, judgment, welfare of others do not count; it is rugged individualism of a highly ingrowing order..... It is the technique of a dictatorship". According to Anderson, submission implies duress or coercion and may be said to characterize behaviour in degrees which vary proportionally with the adverse momentary balance of power in a conflict situation.

Maslow, (Psychological Review: 1937: Volume XLIV), is yet another who has attempted to define the trait in question. His definition reads thus "Dominance includes forcefulness of character, 'strong' personality, a feeling of being 'on top', a feeling of mastery over others, a feeling of general capability. Low

dominance-feeling is the reverse or absence of these feeling. It includes feelings of general inferiority, lack of self-confidence, uncertainty, feeling dominated by others, timidity, and shyness, and self-consciousness."

It is evident that Maslow regards submission as an absence of ascendance, which means that assertion-submission is a unitary trait. But on the other hand, Allport has expressly laid down the view that submission is not merely the absence of ascendance, but rather that both ascendance and submission are active conditions. Psychologically then, it is more correct to speak of two traits, each representing a different type of adjustment. Statistically considered, however, these two traits may be measured in reference to a single linear scale. As explained by Allport:-

"Even though ascendance and submission may coexist in a personality, one is usually sufficiently prominent to justify a differential rating. By counting the number of each type of adjustment it is possible to determine which trait is the more prominent. In some individuals the two traits virtually cancel in frequency of expression, so that we speak of an "average" subject."

Therefore, this argument, as represented in the points of view offered by Maslow and Allport, leads us to deduce that for most practical purposes the statistical conception is the more useful, but at the same time it should be remembered that in reality we are dealing with two traits.

In passing, a few words should be said about the definitions offered by Dashiell and By Jack, as quoted by Murphy, Murphy, and Newcomb in "Experimental Social Psychology."

Dashiell holds that the ascendant person is one who elevates himself "by stepping on the neck of someone else." He is ascendant because someone else is submissive.

The gist of Jack's definition is a differentiation between dominative and integrative behaviour. His description of dominative behaviour is that of the child who snatches a toy out of a companion's hand and plays with it himself. But a child

who displays integrative ascendant behaviour will first ask his companion if he may play with a toy if he will give it back in just a minute.

Having discussed a number of varying approaches in defining the trait in question, we may now proceed to consider the results obtained in the present study.

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CHAPTER IV.R E S U L T S .(1) MEAN SCORES .

The average was obtained by adding up the total scores of all the individuals falling into a group, and then dividing the total by N (i.e., the total number of subjects in a group).

$$\text{P.E. (Probable Error)} = \frac{\cdot 6745\sigma}{\sqrt{N}}$$

<u>GROUP.</u>	<u>MEAN SCORE.</u>	<u>P.E.</u>
European boys	11.96	±.197
Non-European boys	12.68	±.190
European girls	12.02	±.162
Non-European girls	11.64	±.183

In the light of these results it would seem that the difference between European and non-European schoolchildren in each case is negligible.

In the case of the boys there is a difference of .72 between the averages, the non-Europeans obtaining the higher score of the two.

In the case of the girls the difference between the averages, is .38, the Europeans obtaining the higher score in this instance.

These results are in accordance with those found by Cooper in an investigation carried out in America. The Allport A-S test was given to a small group of Negro College students, and it was found that their scores did not differ significantly from the White norms supplied by the Allports.

In the present results it will be observed that the difference between the boys is approximately twice as great as that between the girls.

For further purposes of comparison the subjects have been

re-arranged in four groups as follows:-

- (i) European and Non-European boys.
- (ii) European and Non-European girls.
- (iii) European boys and girls.
- (iv) Non-European boys and girls.

We come now to the reliability of the differences between the means.

$$\text{The formula employed} = \frac{\text{Mean 1} - \text{Mean 2}}{\sqrt{\frac{\sigma_{M1}^2}{N} + \frac{\sigma_{M2}^2}{N}}}$$

This was checked by the use of the Standard Error.

$$\frac{\text{Mean 1} - \text{Mean 2}}{\sqrt{\sigma_A^2 + \sigma_B^2}}$$

where σ_A , or σ_B , = $\sqrt{\frac{N}{N}}$

Let us first consider the observed differences:-

<u>Group</u>	<u>Observed Differences.</u>
European and Non-European boys	.72
European and Non-European girls.	.38
European boys and girls.	.06
Non-European boys and girls.	1.04

The highest difference is to be found between the Non-European boys and girls, and the smallest difference between the European boys and girls.

THE RELIABILITY OF THE DIFFERENCES.

European and Non-European boys	1.76
European and Non-European girls	1.05
European boys and girls.	.16
Non-European boys and girls.	6.89

The most significant difference occurs between the Non-European boys and girls. It is significant that the largest difference should occur only between Non-European boys and girls, and not between European boys and girls. It indicates therefore not so much a sex difference, as a difference between the Non-European sexes. The difference is in favour of the boys.

The Coloured man occupies a socially stereotyped position, in which he suffers certain disadvantages. His situation is therefore one of frustration. The response to this frustration as exhibited in this particular case is the development of an attitude of aggression, or in its milder form, assertion. It is more evident in the case of the boys than the girls, because the boys are constantly in a state of conflict with the European society. They are called upon to compete against standards which are strictly European. The girl might have to earn her own living too, but ultimately she will become housewife, and will not meet with so much suppression and opposition. She is not required to compete with European values in various trades and professions, whereas the Coloured male who wishes to make the slightest progress will find himself immediately opposed to much stronger forces.

Considering that the European and Non-European groups are dissimilar in many ways, we would have expected to find a marked difference in their scores, showing that either the European or the Non-European groups were more assertive. But the results do not fulfil these expectations, nor do they fall in line with the generally-accepted view that personality traits differ from one racial group to another. This might be put down to either one of two causes:-

- (1) that there exist no real differences of a personality kind between Europeans and Non-Europeans. This test might purport to measure an innate personality trait, and, according to other work of this nature, in that case this explanation is quite feasible. But ascendance-submission is largely an acquired trait, as it is something which reflects the individual's standing and position in a social environment, or in isolated social situations, and therefore the results could be repudiated by the tremendous environmental differences that exist between ^{the} two racial groups, and which must necessarily call for the building up of a vastly dissimilar habits and patterns of behaviour.
- (11) the second cause is that perhaps the test is not valid, and is measuring a trait or traits other than the one in question. This hypothesis will be dealt with later when the method of obtaining the validity of the test is described.

(12) RANGE OF SCORES AND STANDARD DEVIATION.

The following are the ranges of the scores obtained by each group in this investigation.

<u>GROUP.</u>	<u>SCORES.</u>	<u>RANGE.</u>
European boys	5-21	16
Non-European boys	7-19	12
European girls	8-17	10
Non-European girls.	5-18	13

The most 'spread-out' range is to be found in the European boy's group, which indicates that more European boys tend to differ from the average, and thus there are more extreme cases of assertion and of submission to be found amongst the European boys than amongst the Non-European boys. In comparing the girls, the Non-Europeans have a slightly wider range than the Europeans. From a study of the range of the scores we may conclude that conformity to the average level of conduct is more marked in Non-European boys than in Non-European girls; and Europeans boys conform least of all to the average laid down by the group.

Notwithstanding the implications of these latter assumptions

let us tackle the problem now from a different approach, that of the Standard Deviation. The formula is

$$\sqrt{\frac{\sum X^2}{N}}$$

where $X = y - \text{Average}$.

The standard Deviation of each group was calculated.

<u>GROUP.</u>	<u>S.D.</u>
European boys	2.84
Non-European boys	2.82
European girls.	2.41
Non-European girls.	2.72

The reliability of the differences between the Standard Deviations of (a) the European and Non-European boys and (b) the European and Non-European girls was obtained by the use of this formula:

$$\delta\sigma = \frac{\sigma_1 - \sigma_2}{\sqrt{\sigma^2\sigma_1 + \sigma^2\sigma_2}}$$

The reliability of the difference between the Standard Deviations of (a) the European and Non-European boys = .11, and of (b) the European and Non-European girls = 3.88.

(iii) FREQUENCY DISTRIBUTIONS.

In measuring the distribution of the scores, the experimenter finds it preferable to think of the trait as a single continuous variable with the scores arranged according to a normal curve of distribution, corresponding to the probability (Gaussian) curve, so that scores for this trait may be treated according to convenient statistical principles. In the curve of distribution the extreme scores at either terminus of the linear scale signify opposite modes of adjustment. The negative side indicates sub-

mission, and the positive side, assertion.

Normal frequency distributions were found in each one of the four groups used in this investigation.

The accompanying graphs provide the necessary verification of this fact.

In trying to account for the occurrence of normal frequency distributions in all four groups, there are two points that are to be stressed.

Firstly, the so-called "normal" curve does in part reflect a tendency for average or non-distinctive levels, but in addition it reflects social pressure towards conformity with some accepted "average" level of conduct. Secondly most persons strike a balance between reactions typical of ascendancy and submission, and this is probably another cause of the similarity in the scores of both groups.

(1V) AVERAGE AGES.

Now let us glance briefly at the average ages of the subjects. They are as follows:-

<u>GROUP.</u>	<u>AVERAGES AGES IN YEARS AND MONTHS.</u>	
European boys.	13	9
Non-European boys.	14	9
European girls.	14	3
Non-European girls.	15	0

In terms of conformity to the social standards, the ages of the subjects are perhaps significant.

The youngest group, that is, the European boys, we have shown, conform least of all to the average of the group. This means that they possess the most extreme cases of assertion and submission. It is quite possible that this deviation from the mean or average is a function of age, as at an earlier age the individual is not so highly conscious of social demands, and is not so susceptible to the pressure of the environment that leads eventually to social conform-

ity.

This explanation seems acceptable when comparing European and Non-European boys, but in comparing the girls it was found that their results refute this explanation, as in this case the older group has a slightly wider range of scores.

It is possible to examine this question from the point of view of the curve of distribution. The oldest group is that of the Non-European girls, and the curve of distribution of this selfsame group is slightly skewed, with a tendency towards the negative or submissive side of the scale.

This would seem to indicate greater conformity to the average in the oldest group.

We must also take into account the fact that personality traits are believed to become more consistent as the age of the subject increases.

CHAPTER V.

RELIABILITY AND VALIDITY
OF THE
TEST OF ASSERTION - SUBMISSION.

(1) RELIABILITY.

As this test has no duplicate and cannot well be repeated, it was decided to employ the split-half method in order to ascertain the reliability of the test. By the split half method we mean that the items that go towards making up the test are divided into two equal halves and correlated with one another.

The first difficulty that was encountered was to discover a suitable means of dividing the test into two comparable halves. At first all the odd items were taken to comprise the one half, and the even items the other half. This method was not at all satisfactory and was abandoned. Instead a method was devised of first arranging the items in diagnostic order, and then dividing them into two groups by taking the alternate items.

A further difficulty now came to light as in order to arrange the items in diagnostic order they would have to be intercorrelated. To avoid this somewhat lengthy process, and acting on a suggestion given by Professor Rayburn, a method was conceived whereby the diagnostic order could be calculated by using only the ten subjects obtaining the highest total scores, and the ten subjects obtaining the lowest total scores. The next step was to determine the agreement between their total scores and their scores on each item. The item the results of which agreed most closely with the total scores was taken to be the one having the greatest diagnostic value. Formula for obtaining reliability by split-half method =

$$\frac{8r_{xy}}{\sqrt{8x^2 + 8y^2}}$$

In such a way the reliability of half the test was found, and by using Spearman's formula, that is,

$$r_x = \frac{2 r_h}{1 + r_h}$$

the reliability of the whole test was found. This method was repeated in the case of each of the four groups, and the results were exactly alike in all four groups. Each group obtained a reliability coefficient of .5.

But this cannot be accepted as the final figure. The test comprises only twelve items, and for this reason, it was necessary to increase the reliability for length.

$$r_{nn} = \frac{nr_n}{1 + (n-1)r_{11}}$$

Using the above formula the reliability was increased for length 4 times.

The formula for the Probable Error of the reliability is

$$P.E. r_{nn} = \frac{.6745 [n(1 - r_{11}^2)]}{\sqrt{N [1 + (n-1)r_{11}]}}$$

The final results obtained are as follows:-

<u>GROUP</u>	<u>RELIABILITY</u>	<u>P.E. r_{nn}</u>
European boys	. 5	± . 101
Non-European boys	. 5	± . 101
European girls	. 5	± . 101
Non-European girls.	. 5	± . 101

(11) VALIDITY.

As there is no second test available whereby the validity of the Assertion-Submission test could be measured, it was decided to employ instead a Graphic Rating Scale.

In such a scale, a graphic basis is used. The different degrees to which a trait may be possessed are indicated by a straight line.

A five-point rating scale was constructed by the experimenter for the purpose of establishing the validity of the test. The general principle underlying the construction of such a scale is that a rating of 1 means that the trait is possessed in marked degree, and a rating of 5, that ^{it} is almost if not entirely absent; while ratings of 2, 3, and 4, denote intermediate degrees.

Using this as a basis from which to start, we present below the Graphic Rating Scale employed in the present investigation.

GRAPHIC RATING SCALE.

- I - Very assertive and dominant in relations with other people; and showing a tendency to be supreme always.
- II.- Fairly assertive and dominant in most situations.
- III.- Average; falling halfway between assertiveness and submissiveness.
- IV.- Fairly submissive and subordinate in most situations.
- V. - Very submissive and subordinate in relation with other people; and showing a tendency to be dominated by others.

The subjects are arranged in only 2 groups this time, (a. European, and (b) Non-European), which means that they are not subdivided according to sex, as was done previously.

The Non-European group consists of the same 200 boys and girls employed in the measure of Assertion-Submission.

The European group consists of the same 190 boys and girls employed in the measure of Assertion-Submission. The raters selected in each group were two teachers who were fairly well acquainted with all the subjects whom they were called upon to rate. The reason for choosing teachers, rather than friends or parents, to be the raters, is that it is assumed that where friends or parents would be inclined to give a biased account, teachers are on the whole more likely to give a reasonable and unprejudiced judgment. A more practical reason is that teachers were more accessible to the writer.

It was considered advisable to employ more than one rater so that an average assessment could be obtained for each subject, and in this way the reliability of the ratings is increased. **All** the raters were European, including those ^{who} rated the Non-European subjects.

THE METHOD OF APPLICATION: Each teacher was asked to rate each subject according to the Graphic Rating Scale, described above. The experimenter spoke to each rater personally, and impressed on each one the importance of giving a fair judgment, and of rating the subjects quite independently and without discussing their assessments with the other raters concerned. In judging an individual they were asked to consider that individual's personality over a period of time, and in as many situations as possible, so that a general rather than a specific impression could be given. Finally they were given a definition of the trait in question. No definite time-limit was imposed on the rates. They were merely requested to complete the given forms as soon as possible, and to return them to the experimenter.

RESULTS:

The ratings of Teachers A and B were compared, according to the percentage of ratings given by each teacher for each point on the scale.

THE SCALING OF RATINGS.(a) EUROPEAN SUBJECTS.

<u>5- POINT SCALE.</u>	<u>% for TEACHER A.</u>	<u>% for TEACHER B.</u>
1.	4.8	3.6
2.	17.4	14.2
3.	43.1	51.9
4.	22.8	25.6
5.	5.9	4.7

(b) NON-EUROPEAN SUBJECTS.

<u>5 - POINT SCALE.</u>	<u>% for TEACHER A.</u>	<u>% for TEACHER B.</u>
1.	3.6	2.4
2.	19.1	17.9
3.	51.1	47.9
4.	22.6	25.4
5.	3.6	6.4.

This shows that A rates slightly more leniently than B, but the differences are not very great. Following this, the ratings of Teachers A and B were correlated.

FORMULA.

$$r = \frac{\sum xy - \bar{y} \sum x \bar{y}}{\sqrt{(\sum x^2 - \frac{(\sum x)^2}{n})(\sum y^2 - \frac{(\sum y)^2}{n})}}$$

$$P.E.r = \frac{.6745(1-r^2)}{\sqrt{N}}$$

<u>GROUP.</u>	<u>CORRELATION COEFFICIENT BETWEEN RATINGS OF A & B.</u>	<u>P.E.R.</u>
European boys and girls.	.64	±.02
Non-European boys and girls.	.68	±.03

The next procedure consists in determining the averages of the two sets of ratings for each individual. These averages, once they had been obtained, were used in constructing a scale of the frequency distribution of the ratings. It was found that the greater number of subjects get a rating of 3, that is, they may be classed as being average. The frequency distributions, therefore, closely approximate the normal probability curve. (See graphs).

Similarity of results between the European and Non-European groups is marked.

FREQUENCY DISTRIBUTION OF THE AVERAGE RATINGS.

5-POINT SCALE.

FREQUENCY PERCENTAGES.

	<u>EUROPEAN SUBJECTS</u>	<u>NON-EUROPEAN SUBJECTS</u>
1	4.2	3.
2	15.8	18.5
3	50.5	49.5
4	24.2	24
5	5.3	5

Having discussed these preliminary details of the Graphic Rating Scale, we may now proceed to consider the actual validity of the test of Assertion-Submission as measured by the use of the Graphic Rating Scale. The validity is established by correlating the score obtained by each individual on the Assertion-Submission test with the average rating assigned to each individual.

<u>GROUP.</u>	<u>CORRELATION COEFFICIENT</u>	<u>I.E.R.</u>
European boys and girls.	.43	† .04
Non-European boys and girls.	.45	† .04

The validity of the test is slightly higher in the case of the non-European subjects, but the difference is negligible. Correlation coefficients such as these, whereas they are far from denoting that the test is perfectly valid, nevertheless show that the test has a fair amount of diagnostic dependability. Taking these results in conjunction with the reliability of the test, we may conclude that in this test of assertion-submission we have a fairly reliable measure of that trait which the test claims to measure.

FACTORIAL ANALYSIS:

Before leaving the subject of the reliability and validity of the test, we must consider for a moment the possibility of applying a factorial analysis to the test. Preliminary advice obtained on this matter, stressed the advisability of applying such an analysis to the work, but subsequent discussions disclosed the impossibility of the scheme under the conditions of this investigation.

CHAPTER VI.

ITEM ANALYSIS OF THE TEST OF ASSERTION-SUBMISSION.

The twelve items that constitute a measure of the trait of assertion-submission were subjected to analysis at this juncture. It must be emphasized here that the results were worked out separately for each one of the four groups.

The total scores obtained by all the subjects on each item were tabulated first of all (See Table 1.)

TABLE 1.

TOTAL SCORES OBTAINED ON EACH ITEM.

<u>ITEMS.</u>	<u>BOYS</u>		<u>GIRLS.</u>	
	<u>EUROPEANS</u>	<u>NON-EUROPEANS</u>	<u>EUROPEANS</u>	<u>NON-EUROPEANS.</u>
1	106	142	89	127
4	108	102	128	88
7	62	70	93	62
10	90	91	104	89
13	99	139	93	131
16	46	68	38	60
19	109	90	126	94
22	64	58	73	56
25	72	69	81	46
28	163	157	182	154
31	86	171	65	158
34	107	117	130	99

From this initial tabulation the items were re-arranged so that the item getting the highest total score comes first on the list, and the item obtaining the lowest total score is placed at the foot of the list. (See Table 11).

TABLE 11.

	<u>BOYS.</u>		<u>GIRLS.</u>	
	<u>EUROPEANS.</u>	<u>NON-EUROPEANS.</u>	<u>EUROPEANS.</u>	<u>NON-EUROPEANS.</u>
1.	Item 28	Item 31	Item 31	Item 31
2.	" 19	" 28	" 34	" 28
3.	" 4	" 1	" 4	" 13
4.	" 34	" 13	" 19	" 1
5.	" 1	" 34	" 10	" 34
6.	" 13	" 4	" 7	" 19
7.	" 10	" 10	" 13	" 10
8.	" 31	" 19	" 1	" 4
9.	" 25	" 7	" 25	" 7
10.	" 22	" 25	" 22	" 16
11.	" 7	" 16	" 31	" 22
12.	" 16	" 22	" 16	" 25

A Bracket indicates two items having the same score. To be more precise, let us consider an example taken from the first group, that of the European boys. Table 1. shows us that the highest total score is 163, and that that score was obtained on item 28. Consequently, in Table 11, Item 28 is given the first position at the head of the list.

From this basis, the rank difference correlations were calculated. A rank difference correlation, when applied in this way, enables us to see which items in a test have a fixed position among certain groups.

The rank difference correlation between:

- (i) European and Non-European boys = .60
- (ii) European and Non-European girls = .33
- (iii) European boys and girls. = .82
- (iv) Non-European boys and girls. = .94

These results show a higher degree of correlation between groups of a similar racial origin than between groups that differ racially.

The next step in this item analysis is the tabulation of

- (a) the number of "2" or Assertive Scores obtained on each item, and
- (b) the number of "0" or Submissive scores obtained on each item.

Tables III. and IV were calculated in exactly the same way as Table I was derived from Table I.

In both Table III and Table IV, the item having the greatest number of "2" Scores, or "0" Scores, as the case might be, heads the list.

TABLE III.

NUMBER OF "2" (ASSERTIVE) SCORES ON EACH
ITEM, ARRANGED IN ORDER OF SIZE.

		<u>BOYS</u>		<u>GIRLS.</u>	
		<u>EUROPEANS.</u>	<u>NON-EUROPEANS</u>	<u>EUROPEANS</u>	<u>NON-EUROPEANS.</u>
1.	Item 28	Item 31	Item 28	Item 31	
2.	" 1	" 28	" 19	" 28	
3.	" 13	" 1	" 34	" 1	
4.	" 19	" 13	" 4	" 13	
5.	" 31	" 34	" 25	" 19	
6.	" 4	" 19	" 1	" 34	
7.	" 34	" 16	" 13	" 10	
8.	" 25	" 25	" 31	" 7	
9.	" 7	" 7	" 7	" 16	
10.	" 10	" 10	" 10	" 25	
11.	" 16	" 4	" 16	" 22	
12.	" 22	" 22	" 22	" 4	

The rank difference correlation results of Table III are as follows:-

(I) European and Non-European boys	=	.77
(II) European and Non-European girls	=	.33
(III) European boys and girls	=	.74
(IV) Non-European boys and girls	=	.93.

TABLE IV

NUMBER OF "O" (SUBMISSIVE) SCORES ON EACH
ITEM, ARRANGED IN ORDER OF SIZE.

	BOYS.		GIRLS.	
	EUROPEANS	NON-EUROPEANS	EUROPEANS	NON-EUROPEANS.
1.	Item 16	Item 16	Item 16	Item 25.
2	" 7	" 22	" 31	" 16
3	" 25	" 25	" 25	" 22
4	" 31	" 7	" 1	" 7
5	" 13	" 19	" 13	" 19
6	" 22	" 10	" 7	" 10
7	" 1	" 1	" 22	" 1
8	" 19	" 13	" 19	" 34
9	" 4	" 34	" 34	" 13
10	" 34	" 4	" 4	" 4
11	" 10	" 28	" 10	" 31
12	" 28	" 31	" 28	" 28

The next step consisted in applying the measurement of rank difference correlations to Table IV, the results being:-

(i) European boys.	.51.
(ii) European and Non-European girls.	.42
(iii) European boys and girls.	.88
(iv) Non-European boys and girls.	.97

It will be noted that the highest rank difference correlations are to be found between the Non-European boys and girls in Tables II, III, and IV. In order to get a general picture of this analysis, all the rank difference correlations have been combined and are presented in Table V.

FORMULA for rank difference correlation $r = \frac{1 - 6 \sum d^2}{n(n-1)}$

$$P.E.p. = \frac{.7063(1-p^2)}{\sqrt{N}}$$

TABLE V.

FINAL RESULTS OF RANK DIFFERENCE CORRELATIONS.

(In each case, the Probable Error is given alongside the correlation coefficient).

CORRELATIONS BETWEEN.	TOTAL SCORES.	ASSERTIVE SCORES.	SUBMISSIVE SCORES.
(I) European and Non-European boys	.60 \pm .13	.77 \pm .08	.61 \pm .15
(II) European and Non-European girls	.33 \pm .18	.33 \pm .18	.42 \pm .16
(III) European boys and girls.	.82 \pm .07	.74 \pm .09	.88 \pm .05
(IV) Non-European boys and girls.	.94 \pm .02	.93 \pm .03	.97 \pm .01

Rank difference correlations between European and Non-European groups are comparatively low, particularly the correlations between the European and Non-European girls. But in finding the rank difference correlation between boys and girls of the same racial group, the results were far more satisfactory. The highest correlations are evident between the Non-European boys and girls. This leads us to the conclusion that there is an environmental factor at work here. In addition, it will be recalled at this stage that in determining the reliability of the difference between the means, the most significant difference was found to exist between the Non-European boys and girls.

On the basis of the assumption that there is an environmental factor at work here, it was decided to investigate the social environments of the subjects used in this experiment. To do this, a test of socio-economic status was applied to the subjects in question, with the ultimate aim of comparing their socio-economic level with the scores that they obtained on the original test of assertion-submission.

Part II of the present study, comprises such an investigation of socio-economic status.

PART IICHAPTER VII(1) THE TEST OF SOCIO - ECONOMIC LEVEL.

There are many tests that purport to measure the socio-economic level of the individual. The choice of a test for our purpose was based on the following points.

1. Each question was required to be indicative of the economic or the cultural level of the home, or both.
2. The questions must cover as many aspects of the home background as possible. At the same time it must be remembered that the scope of this work is rather limited, and that the time and material at the disposal of the writer would not allow for a very extensive treatment of Part II of this work. For this reason, Part II must be regarded as a sort of supplement or corollary of Part I, and cannot be given the same amount of attention that was given to Part I. As a result of this the number of items was cut down wherever possible. But although the strictest economy was exercised in selecting the questions, nevertheless the questions that were finally chosen were felt to be representative of as many aspects of the home background as possible in the circumstances.
3. The questions must be stated so that the child can understand them. To fit in with this point, the questions were worded in as simple and direct a manner as possible.
4. The questions must ask for information which the child is willing to furnish.
5. The questions must ask for information which the child can furnish. Take for example one instance in which a question is directed at finding out the amount of schooling and education that the child's parents have had. This would involve a great deal of conjecture and uncertainty, and it is probable that many of the subjects would have been unable to give an answer to this question. Therefore it was omitted when the test was compiled.
6. The questions must be stated in such a manner that there will be a minimum chance of error.
7. The questions must allow of answers that are comparable.

All these points were borne in mind when examining the standard measures of socio-economic standing available to the investigator. After due consideration had been given to them all, it was found that the test that answered these requirements most fully was that of Chapman and Sims. It is, according to its title, a "Quantitative Measurement of Certain Aspects of Socio-Economic Status."

Eleven of the questions were extracted from the questionnaire on the grounds of being pertinent to the measurement of socio-economic status. Slight alterations were made in these questions wherever it was considered advisable to do so.

It was felt that Question No. 6, "Is your home heated with a furnace?" was not applicable in the case of South African subjects, and instead another measure or means of judging the socio-economic standing of the individual's home was chosen, and that is, the possession of a refrigerator. The question was worded to read as follows: "Have you got a fridge in your home?"

Question No. 7, "Does your father own an auto which is not a truck?" was also thought to be more suited to a group of American subjects, and while its inference was not altered, the wording was changed to "Does your father own a motor-car?"

Question No. 9 was originally: "Have you a victrola in your home?" As the meaning would be obscure to the subjects it was changed to, "Have you a wireless or a gramophone, or both, in your home?"

Finally, a subtle alteration was made in presenting Question No. 10. From reading "How many books are there in your home?" it was made to read, "Have you a bookcase or bookshelf (that is, a special place for books only), in your home?" This change was necessitated by the rather vague reference to "books" in the first version of the question, which would have raised a number of difficulties in the responses given by the subjects.

(ii) THE SUBJECTS.

When the test had been selected and prepared as described in the section above, it was administered to a certain number of the subjects employed in the test of assertion-submission.

It was felt that a group of approximately one hundred subjects in the case of both Europeans and Non-Europeans would be sufficient for this purpose. In applying the test of socio-economic level the subjects were not divided into four groups, as in the case of the test of assertion-submission, that is, they were not grouped according to sex. The test was administered to two groups comprising:-

- (i) 85 Non-European boys and girls from the Battswood Training College.
- (ii) 90 European boys and girls. In this group the boys were drawn from the Rondebosch Boys' High School, and the girls from the Rustenburg Girls' High School.

(iii) THE METHOD OF APPLICATION OF THE
TEST OF SOCIO-ECONOMIC STATUS .

The method of application of this test was far more simple than that of the test of assertion-submission. Unlike the latter test, the subjects were not required to fill in any printed forms. The questions were read out to them by the investigator, and they were required to give their replies on the sheet of exercise-paper provided to each individual. They were permitted to use either pen-and-ink or a pencil in writing their answers.

In most cases the questions called for one-word replies, that is, either "yes" or "no". A questionnaire of this

category is of course presented as a group test.

Once more, in approaching the subjects, the investigator stressed the fact that they were not being called upon to complete a test, but rather that they were being asked to help her, by furnishing certain required items of information regarding themselves and their homes. The subjects were allowed to ask questions pertaining to the test, but they were asked to address themselves to the experimenter only, and to refrain from communicating with one another while the work was in progress.

Such then is the nature of the test applied in Part II of this work in order to measure the socio-economic status of the subjects. Let us now proceed to examine the results revealed by this enquiry.

CHAPTER VIIITHE RESULTS OBTAINED ON THE TEST
OF SOCIO-ECONOMIC STATUS.

For purposes of analysis, the items that constitute the test were divided into groups and treated as groups in examining the results.

Items 1 and 2 read as follows:-

1. How many rooms are there in your home?
2. How many people are there living in your home?

Taking the responses given to these two items in conjunction with one another, it was possible to calculate in the case of each individual the number of inhabitants per room. The next step consisted in finding the average number of inhabitants per room for each of the two groups.

The results are:-

- (i) European subjects have an average of .76 inhabitants per room.
- (ii) Non-European Subjects have an average of 1.98 inhabitants per room.

The application of these two questions in particular was beset with many difficulties. First of all, the children were dubious as to the exact implications of the word "rooms". To simplify matters for them the experimenter told them to include all living-rooms and bedrooms. A kitchen could be counted as one room only if it were used as a living-room as well, and the same applied to a porch, if it were used as a bedroom.

The results obtained by each individual on the test of Assertion-Submission were correlated with the average number of inhabitants per room reported in the case of each individual. The correlations were found to be very low, and as a consequence they cannot be regarded as having any significance.

CORRELATION BETWEEN ASSERTION-SUBMISSION SCORES
AND THE NUMBER OF INHABITANTS PER ROOM.

<u>GROUP.</u>	<u>CORRELATION COEFFICIENT</u>	<u>P.E.R</u>
(i) European subjects.	.05	\pm .07
(ii) Non-European subjects	-.02	\pm .07

The low correlation might be caused by a certain amount of uncertainty on the part of the subjects in calculating the number of rooms in the home, and also by not accounting for those subjects who live in flats or in rooms in the houses of other people. Thus we may conclude that in this instance there is no correlation between the number of persons per room and (as a measure of socio-economic level), and the scores on the test of assertion submission.

The nine remaining items of the test were dealt with next. To all of these nine questions may be given the response of either "yes" or "no", that is, they measure the possession or non-possession of a particular characteristic pertaining to the home background of the individual. The nine items were scored according to the method outlined by Chapman and Sims.

1. The percentage of subjects possessing and not possessing (P and N-P) each characteristic was calculated first of all.

2. By means of the Normal Probability Integral Table, the values for each trait or characteristic were expressed in terms of sigma deviations from the average of the group. This introduced plus or minus deviations.

3. To avoid handling negative values, they were made positive by adding 5 to each value.

4. After multiplying by 10, these values were approximated.

The values obtained in this way were used to signify the possession or non-possession of each trait. The method whereby we arrived at these final values is set out more explicitly in the ensuing tables.

TABLE SHOWING SIGMA VALUES OF SOCIO-ECONOMIC STATUS, AND DERIVATIONS THEREFROM.

(1) EUROPEAN SUBJECTS.

P = Possession of the characteristic
 N-P = Non-Possession of the characteristic

CHARACTERISTIC	NUMBER OF REPLYERS	PERCENTAGE.		SIGMA DEVIATION		SIGMA DEVIATION $\pm S$		Values x 10 & APPROXIMATED	
		P	N-P	P	N-P	P	N-P	P	N-P
Telephone	90	77	23	.394	-1.320	5.394	3.680	54	37
Fridge	90	87	13	.243	-1.627	5.243	3.373	52	34
Motor-Car	90	64	36	.585	-1.039	5.585	3.961	56	40
Piano	90	60	40	.644	- .966	5.644	4.034	56	40
Wireless	90	94	6	.127	-1.990	5.127	3.010	51	30
Gramophone	90	46	54	.863	- .735	5.863	4.265	59	43
Bookcase	90	96	4	.089	-2.154	5.089	2.846	51	28
Daily Newspaper	90	97	3	.070	-2.268	5.070	2.732	51	27
Neither <u>Not</u> Working	90	83	17	.305	-1.489	5.305	3.511	53	35

TABLE SHOWING SIGMA VALUES OF SOCIO-ECONOMIC STATUS,
AND DERIVATIONS THEREFROM.

(11) NON-EUROPEAN SUBJECTS.

P = Possession of the characteristic.

N-P = Non-possession of the characteristic.

CHARACTERISTIC	NUMBER OF REPLIES	PERCENTAGE		SIGMA DEVIATION		SIGMA DEVIATION + .5		VALUES X 10 AND APPROXIMATED	
		P	N-P	P	N-P	P	N-P	P	N-P
Telephone	85	6	94	1.980	-.126	6.980	4.874	70	49
Fridge	85	9	91	1.800	-.178	6.800	4.822	68	48
Motor Car	85	21	79	1.370	-.364	6.370	4.636	64	46
Piano	85	40	60	.965	-.643	5.965	4.327	60	43
Wireless	85	72	28	.467	-1.202	5.467	3.888	55	39
Gramophone	85	34	66	1.070	-.555	6.070	4.445	61	44
Bookcase	85	98	2	.049	-2.420	5.049	2.580	50	26
Daily Newspaper	85	86	14	.258	-1.589	5.258	3.411	53	34
Mother <u>Not</u> Working.	85	78	22	.379	-1.345	5.379	3.655	54	37

In this way we have considered ten of the eleven items that constitute the test. The eleventh item,

"What is your father's occupation?"

was eliminated due to the considerable misunderstanding that it caused. The question was included in the test, but as the responses given were rather confused, it was thought best to abandon such an investigation.

Working with the final values obtained in the two latter tables, we may proceed now to a comparison of the scores obtained by the subjects in both the test of assertion-submission and the test of socio-economic status.

CORRELATION OF SCORES OBTAINED BY THE SUBJECTS ON THE TESTS OF ASSERTION-SUBMISSION AND OF SOCIO-ECONOMIC STATUS.

<u>GROUP.</u>	<u>CORRELATION COEFFICIENT</u>	<u>P.E.F.</u>
(I) European subjects	.25	$\pm .07$
(II) Non-European subjects	.07	$\pm .07$.

The results show a very low correlation between the two tests. The correlation obtained from the group of European subjects is slightly more satisfactory, but even that is rather small.

There are various ways in which an attempt could be made to account for the difference revealed here between the two racial groups. The main reason lies perhaps in the actual test of socio-economic status itself. As the two groups are drawn from vastly differing environments, the first criticism that strikes the writer is that it might not be possible to use one and the same test in measuring such antithetical home environments. This is confirmed even to a greater extent by the fact that a general survey of the responses given by the European subjects, signified to the investigator that those subjects seemed to be representative of a very high socio-

economic standard; a standard not only above that of the non-Europeans, but also superior, both socially and economically, to the average European norms. This leads us to the second point of criticism, and that is ^{that} the test of socio-economic status seems to be designed to measure a fairly high level, and because of this the European subjects are inclined to give a greater percentage of positive answers to many of the questions, than are the Non-European subjects.

The results obtained from the item analysis of the test of the assertive-submissive trait, led us to form certain expectations, prominent among them being an anticipation of a fairly high correlation between that test and a measure of socio-economic standing. But the results do not live up to these expectations. To what extent this is the fault of the actual measures used, cannot be ascertained by the present study.

After further deliberation, it was decided to subject the test of socio-economic status to an item analysis as well, by correlating the responses given to each item, with the assertion-submission test scores.

CORRELATION OF THE SOCIO-ECONOMIC TEST ITEMS
WITH THE TOTAL ASSERTION - SUBMISSION TEST SCORES.

The responses to each item of the test of socio-economic level are either positive or negative, and the sigma values supplied by the tables are intended to represent such positive and negative replies. It is obvious, therefore, that at this stage we are dealing with a dichotomous distribution. For the purpose of correlating such a dichotomous distribution with the distribution offered by the test of assertion-submission, it is necessary to employ that method of correlation which is known as 'biserial r'.

FORMULA:

$$r_{bis} = \frac{(M_p - M) \cdot \sigma}{\sigma^2}$$

TABULATION OF THE RESULTS OF THE BISERIAL CORRELA-
TION OF NINE ITEMS OF THE TEST OF SOCIO-ECONOMIC
STATUS, WITH THE TOTAL SCORES OBTAINED ON THE TEST
OF ASSERTION-SUBMISSION.

<u>CHARACTERISTIC</u> <u>CORRELATED WITH</u> <u>THE ASSERTION-SUB-</u> <u>MISSION SCORES.</u>	<u>BISERIAL R.</u>	
	<u>EUROPEAN</u> <u>SUBJECTS.</u>	<u>NON-EUROPEAN</u> <u>SUBJECTS.</u>
Telephone	.33	.76
Fridge	.28	.51
Motor-car	.39	.26
Piano	.46	.15
Wireless	.20	.06
Gramophone	.61	.17
Bookcase	.22	.05
Daily newspaper	.18	.06
Mother <u>not</u> working.	.29	.07

The highest correlations obtained falls in the Non-European group, that is, a biserial correlation of .76 on the item measuring the possession and non-possession of a telephone in the home. In the European group the highest biserial correlation, (.61), is found for the item measuring the possession and non-possession of a gramophone in the home.

The results point out the significance of the possession of a telephone amongst the Non-European subjects in relation to a measure of personality, and the significance of the possession of a gramophone in the European group.

CHAPTER IICONCLUSIONS.

In drawing this investigation to a close, it would be advisable at this stage to see whether any conclusions may be drawn from the results that it has revealed.

First of all it is important to note that under the present circumstances it would be inadvisable to generalize at all from the observed results. When an investigation is limited in scope and range, it will not allow of any general conclusions, that is, conclusions that would be applicable and acceptable in a variety of situations.

It is absolutely essential to realize that any conclusions to which the writer may come are specifically limited to the kind of subjects and situations with which she has dealt in the present study.

It was shown that, using a test of personality as the medium of comparison between two distinct yet comparable racial groups, there exist no significant differences of a personality kind between the groups. On the other hand, a significant critical ratio was found in comparing Non-European boys and girls. As no such difference was revealed by a comparison of European boys and girls, it cannot be put down to a general sex difference, but rather as a sex difference existing only in the Coloured group of subjects, the difference being in favour of the boys. Once more, in postulating an explanation of this factor it is necessary to revert to the background of the individual, and to the demands made on the individual by the social environment with which he interacts. The Non-European boy is more likely to realize that in order to make progress he must first overcome numerous difficulties, not least among them being an element of frustration that must of necessity

arise from a desire to compete with others in a society of largely European values. As a result of, or perhaps defence against, these frustrating and suppressing forces acting on him, he will tend to develop an attitude of aggression, or in a milder form, assertion. The girls, on the other hand, are not as exposed to this futile conflict and struggle for existence in a European society, as are the boys. Whilst the vast majority of girls are required to earn a living sooner or later in their lives, very few of them, if any, find themselves having to compete with European standards in varying trades and professions. This interpretation, though quite hypothetical, is further supported by the fact that the Non-European boys obtained the highest mean score of all the groups in the test of assertion-submission. These results are conclusive only in so far as the measurement of the mean scores is concerned. As soon as we turn to such factors as the range of the scores, and the average ages of the subjects, we come up against contradictions which cannot be reconciled to the conclusions concerning the means of the groups.

An examination of the score-ranges and standard deviations revealed that the European boys conform least of all to the standards laid down by the group, as they show the most extreme cases. But this measure of the distribution of the scores also takes into account the spread of the scores in a negative direction, that is, towards submissiveness. We can only conclude here that the mean scores give us a better impression or picture of the general trend exhibited by a group.

No decisive conclusions could be extracted from a consideration of the average ages, as the explanation offered when dealing with that section of the results is feasible only in the case of the boys, and is not applicable to the girls.

By calculating the reliability and validity of the test of assertion-submission we are led to deduce that the results denote that the test is a fairly reliable measure of that trait which it professes to measure. Markedly similar results were obtained for the European and Non-European groups. Cattell's results reveal that the self-consistency of the test is satisfactory and this is verified in this study. But where Cattell expresses some doubt as to the validity, the present study shows a reasonably good degree of diagnostic dependability.

From the application of the rank difference correlation method to the items that constitute the test, we came to the conclusion that there is an environmental factor here which makes its presence obvious by means of the high correlations to be found between boys and girls of the same racial group.

Part II of this work is made up of a test of socio-economic level, the results of which test were correlated with the results given by the test of assertion-submission. We may conclude from this part of the investigation that there is a very low correlation between the scores of the two tests, but that as the test seems to measure a fairly high standard of socio-economic position, this might be the cause of a more satisfactory correlation given by the European group. Taking each item of the socio-economic scale in turn, higher correlations were found between many of them and the assertion-submission scores. This leads us to assume that although there is an environmental element present, that factor can be measured adequately by only certain items on the test of socio-economic level.

Once more it is the duty of the writer to emphasize with conviction, that any conclusions deduced from this work are relevant only in the case of European and Coloured school-children, limited to the Standard VII level of education and to the urban population in the Cape Province.

CHAPTER XSUMMARY.

This investigation has been an attempt to use a test of personality-traits as a medium for the measurement of differences between European and Coloured schoolchildren.

The test employed for this purpose is Cattell's measurement of assertion-submission, as it is put forth by him in his tests of temperament and disposition.

From a general survey of the test itself, the writer has gone on to a discussion of the actual trait in question, and Allport's definition of the trait is proffered as the most comprehensive of them all.

The results extracted from this experimentation do not reveal any significant differences between the means of the differing racial groups. The writer is however led to postulate the assumption that an environmental factor enters into the study, and on this basis the various scores, measurements, and results are interpreted from the point of view of the background of the individual.

In the light of such an interpretation a test of socio-economic status was applied to the same groups of subjects, and these results were correlated with the scores obtained from the test of assertion-submission. The correlations were found to be low, but the biserial correlations between each item of the socio-economic scale and the test of assertion-submission, were on the whole, more satisfactory.

The reliability of the test of assertion-submission was calculated by means of the split-half method and Spearman's formula. The validity was measured by the employment of a Graphic Rating Scale, with two members of the teaching-staff

at each school acting as raters.

This then is the gist of the work that has been undertaken in the present study. All conclusions that have been reached are open to criticism, as it is realized that many highly-debatable points are involved which could not be discussed to the fullest extent, owing to the limited scope of the experiment.

Before bringing this investigation to a close, let us glance briefly to the future. This work has revealed that tests that measure traits of a personality kind are applicable to a variety of situations, and may be used as a measure of racial differences. But there are still many other factors, such as urban and rural influences, which the writer has not even attempted to examine, and which could lead to further discussion and conjecture. The scope of such enquiries into comparative differences between groups is almost illimitable, and for this reason, the writer wishes to end this study on a note of anticipation, by echoing the words of Cattell when he expresses the hope that "other research workers will be stimulated to inquiry into the usefulness of this type of test in many different types of situation."

APPENDIX A.BIBLIOGRAPHY .

- ADLER: Individual Psychology.
- ALLPORT: Personality. A Psychological Interpretation. 2. Test of Ascendance-Submission. (Journal of Abnormal and Social Psychology. Vol. 23. 1928).
- ANASTASI: Differential Psychology.
- ANDERSON: An Examination of the Concepts of Domination and Integration in Relation to Dominance and Ascendance. (Psychological Review. Vol. XLVII. 1940)
- BENEDICT: Patterns of Culture.
- BERNREUTER: Theory and Construction of the Personality Schedule. (Journal of Social Psychology. Vol. 4. 1934).
- BIESHEUVEL: African Intelligence.
- BROWN: Psychology and the Social Order. Social Psychology.
- BURDICK: A Test of Cultural Background.
- CANTRIL: Social Psychology of Everyday Life. (Psychological Bulletin. Vol. 31. 1934.)
- CATTELL: A Guide to Mental Testing. Temperamental Tests in Clinical Practice (British Journal of Medical Psychology. Vol. XVI. 1937)
Your Mind and Mine.
- CHAPMAN AND SIMS: A Quantitative Measurement of Certain Aspects of Socio-Economic Status. (Journal of Educational Psychology. Vol. 16. 1925).
- COLLINS AND DREYER: Psychology and Practical Life.
- DAVIS AND DOLLARD: Children of Bondage.
- GARRETT AND SCHNECK: Psychological Tests, Methods, and Results.
- GARTH: Race and Psychology.
- GUILFORD: Psychometric Methods.
- HARTSHORNE AND MAY: Studies in the Organisation of Character.
- JONES AND BURKS: Personality Development in Childhood. (Monographs of the Society for Research in Child Development. Vol. 1. No. 4.)

- KATZ AND SCHANCK: Social Psychology.
- KLINEBERG: Race Differences.
- KOFFKA: Principles of Gestalt Psychology.
- KRUEGER AND RECKLESS: Social Psychology.
- KUHLEN: A Study in Culture and Personality.
(Journal of Social Psychology. Vol.21
1945).
- LA PIERRE AND
FARNSWORTH: Social Psychology.
- MACRONE: Race Attitudes in South Africa.
- MASLOW: Dominance-Feeling, Behaviour, and Status.
(Psychological Review. Vol.XLIV.1937).
- MCDUGALL: Social Psychology.
- MEAD: Sex and Temperament.
- MURPHY: General Psychology.
- MURPHY, MURPHY and
NEWCOMB: Experimental Social Psychology.
- PERRIN AND KLEIN: Psychology.
- PORTEUS AND
BADCOCK: Temperament and Race.
- SWEET: The Measurement of Personal Attitudes in
Younger Boys.
- SYMONDS: Diagnosing Personality and Conduct.
- TERMAN AND MILES: Sex and Personality.
- THURSTONE: The Measurement of Social Attitudes.
(Journal of Abnormal and Social Psycholo-
gy. Vol. 26.1931).
- VERNON: 1. The Biosocial Nature of the Personality
Trait.
(Psychological Review. Vol. 40.No.6
1933). 2. Questionnaires, Attitude
Tests, and Rating Scales in "The
Study of Society," Chapter IX, edited
by Bartlett.
- VERNON AND
ALLPORT: The Field of Personality. (Psychological
Bulletin. Vol. 27. 1930).

APPENDIX B.THE TEST OF ASSERTION - SUBMISSION.

The following are the thirty-six items that constitute Set 1 of Cattell's Tests of Temperament and Dispositions. The relevant items to this study are numbers 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, and 34.

The scoring is given alongside each alternative, on the right-hand side of the page.

1.	John strained every nerve to beat the others because	(1) he was determined to be on top	2
		(2) his father wished him to succeed	1
		(3) he needed the scholarship	0
2.	One of the keenest pleasures of childhood is in	(1) fighting	0
		(2) collecting things	2
		(3) physical exercise	1
3.	Solitude is good	(1) for nobody	2
		(2) as a punishment	1
		(3) quarrelsomeness	1
4.	A good deal of trouble in life arises from too much	(1) love of pleasure	0
		(2) love of power	2
		(3) quarrelsomeness	1
5.	John refused to lend any of his possessions to his friends because	(1) he was selfish	0
		(2) he was afraid that they would not be returned to him	2
		(3) he was afraid that they might lose them	1
6.	To say that a good film or football match is not so enjoyable if there are only a few people present is	(1) only common sense	2
		(2) a popular delusion	0
		(3) reasonable	1
7.	At tea the general was the most important person present, and John	(1) tried	1
	to go up and speak to him.	(2) soon managed)	2
		(3) was scared	0
8.	John was quite a nice lad, but would never allow anyone to	(1) laugh at him	0
		(2) borrow his stamp collection	2
		(3) waste his time.	1

9. When John was ill he missed most of all
- (1) the company of his friends 2
 - (2) his long country walks 0
 - (3) his visits to the cinema 1
10. The food brought by the waiter was so bad that, although everyone was looking at him John said
- (1) "Take it back, and send the manager to me." 2
 - (2) "I can't eat it." 0
 - (3) "I'll have something different." 1
11. People who have a little more money than others generally have
- (1) worked for it. 1
 - (2) saved very carefully. 2
 - (3) no need for it. 0
12. As the party grew noisier and jollier still John's one wish was to
- (1) have all his friends there. 2
 - (2) leave at once. 0
 - (3) find a quiet corner. 1
13. A man sometimes makes witty remarks in company because he
- (1) he feels in a playful mood 0
 - (2) thinks the company is dull 1
 - (3) wants to show off. 2
14. John liked playing banker with counters because he loved
- (1) the luck of the game. 1
 - (2) competing with others. 0
 - (3) feeling his hoard of counters getting bigger. 2
15. We live in a busy age, but most people want to spend at least one of their free evenings a week
- (1) at a cinema or dance. 2
 - (2) at a lecture. 1
 - (3) with a book or making something. 0
16. The new-comer pushed ahead of him in the queue, but because he was a reasonable man he merely
- (1) gave him a contemptuous glance. 1
 - (2) said, "That's hardly fair." 2
 - (3) took it quietly. 0
17. Perhaps the greatest satisfaction in photography is in
- (1) snapping groups of friends 0
 - (2) looking over the collections one has made. 2
 - (3) making something artistic. 1
18. John was glad to get back to school, because holidays on the farm was so
- (1) lonely 2
 - (2) smelly and muddy 0
 - (3) lacking in interest. 1

19. When arguing with an older or more experienced person to insist that you are right when you know that you are right is
- | | |
|---------------------------|---|
| (1) rather conceited. | 1 |
| (2) natural. | 2 |
| (3) rather inconsiderate. | 0 |
20. Mr. Smith's desk was always full of papers because he
- | | |
|-----------------------------------|---|
| (1) was naturally untidy | 0 |
| (2) hated throwing anything away. | 2 |
| (3) liked to look busy. | 1 |
21. A dog may be said to be more human than a cat, because it is more
- | | |
|----------------|---|
| (1) clever | 0 |
| (2) sociable. | 2 |
| (3) dependent. | 1 |
22. When John found that he had to walk between rows of staring people in his fancy-dress costume, he
- | | |
|----------------------------|---|
| (1) enjoyed it immensely | 2 |
| (2) was rather embarrassed | 1 |
| (3) felt hot all over. | 0 |
23. Many a man goes on and on in business because he is at heart
- | | |
|-----------------------------------|---|
| (1) uninterested in anything else | 0 |
| (2) a miser. | 2 |
| (3) a fighter. | 1 |
24. To hold opinions different from those of one's friends shows that one has
- | | |
|---------------------------|---|
| (1) character. | 2 |
| (2) thought intelligently | 1 |
| (3) originality. | 0 |
25. To try to force one's opinions on others is sometimes
- | | |
|---------------------|---|
| (1) necessary. | 2 |
| (2) rude. | 0 |
| (3) a brave action. | 1 |
26. Which is the truest proverb?
- | | |
|--------------------------------------------|---|
| (1) a bird in hand is worth two in a bush. | 2 |
| (2) more haste less speed. | 0 |
| (3) a stitch in time saves nine. | 1 |
27. Boarding Schools are better than day schools in this respect, that they,
- | | |
|--------------------------------|---|
| (1) make one sociable. | 2 |
| (2) supervise one's homework. | 0 |
| (3) have better playing fields | 1 |
28. When the salesman in the shop tried to force John to buy the article he didn't want, John said.
- | | |
|-------------------------------|---|
| (1) I'll come back tomorrow | 1 |
| (2) I don't want it thank you | 2 |
| (3) All right I'll have it. | 0 |

29. One of the greatest causes of crime is the desire to have
- (1) a good time. 0.
 - (2) what belongs to someone else 2
 - (3) One's own way constantly. 1
30. John at length went out into the next room to read because
- (1) he wanted to be quite. 0
 - (2) show people what he had drawn. 1
 - (3) have some cheerful company 2.
31. The good business man is he who knows how to keep his assistants
- (1) in their proper place 2.
 - (2) with their noses to the grind stone. 1
 - (3) doing work they like. 0
32. Although John was fond of the cinema he did not go very often because he
- (1) had no one to go with. 1
 - (2) hated the stuffy atmosphere. 0
 - (3) wanted to save his money. 2
33. A person who doesn't belong to some club or circle of companions is
- (1) wasting his life. 1
 - (2) missing recreation. 2
 - (3) generally doing useful work elsewhere. 0
34. A man who doesn't like being contradicted is usually
- (1) very sensitive. 0
 - (2) careful what he says. 1
 - (3) obstinate. 2
35. Nothing is quite so irritating to watch as
- (1) unnecessary waste. 2
 - (2) work badly done. 1
 - (3) unfair play. 0
36. The thing that hurt John more than anything else was that
- (1) they stopped his pocket money 0
 - (2) he was called an 'outsider.' 2
 - (3) Harry wouldn't speak to him. 1

APPENDIX C.THE TEST OF SOCIO-ECONOMIC STATUS.

The following are the items that were combined to form a measure of socio-economic standing.

1. How many rooms are there in your home?
 2. How many people are there living in your home?
 3. Have you got a telephone in your home?
 4. Does your mother have a job outside the home?
 5. What is your father's occupation?
 6. Have you got a fridge in your home?
 7. Does your father own a motor-car?
 8. Have you a piano in your home?
 9. Have you a wireless or gramophone, or both, in your home?
 10. Have you a bookcase or special bookshelf in your home?
 11. Do you get a daily newspaper regularly in your home?
-

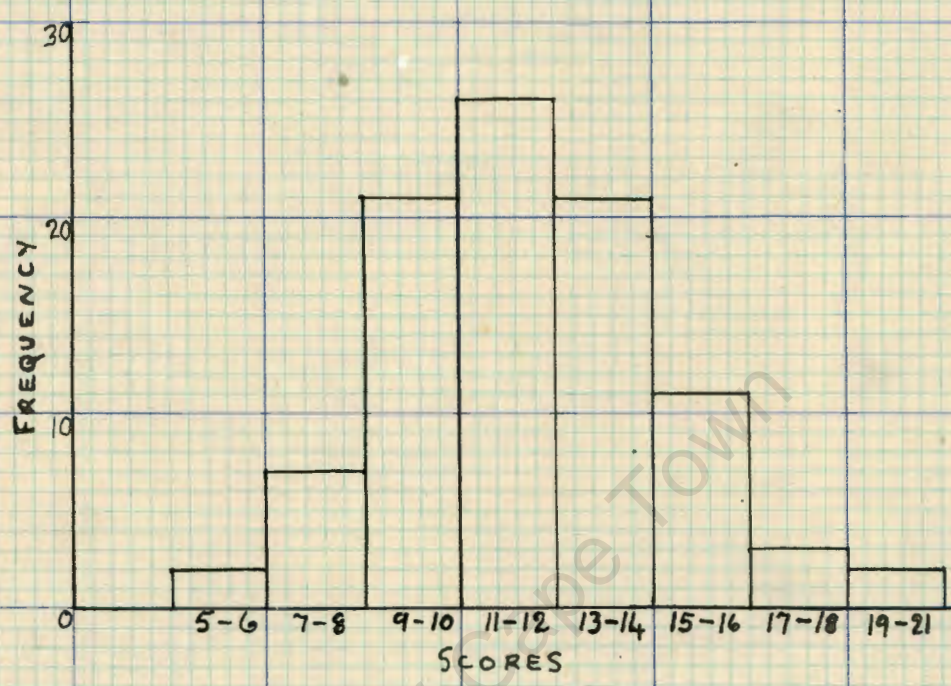
APPENDIX D.GRAPHS.PAGE.

Frequency Distributions of the Scores Obtained on the Test of Assertion - Submission.	57.
(i) European boys.	
(ii) Non-European boys.	
Frequency Distributions of the Scores Obtained on the Test of Assertion - Submission.	58.
(i) European girls.	
(ii) Non-European Girls.	
Frequency Distributions of the Average Ratings.	59.
(i) European Subjects.	
(ii) Non-European Subjects.	

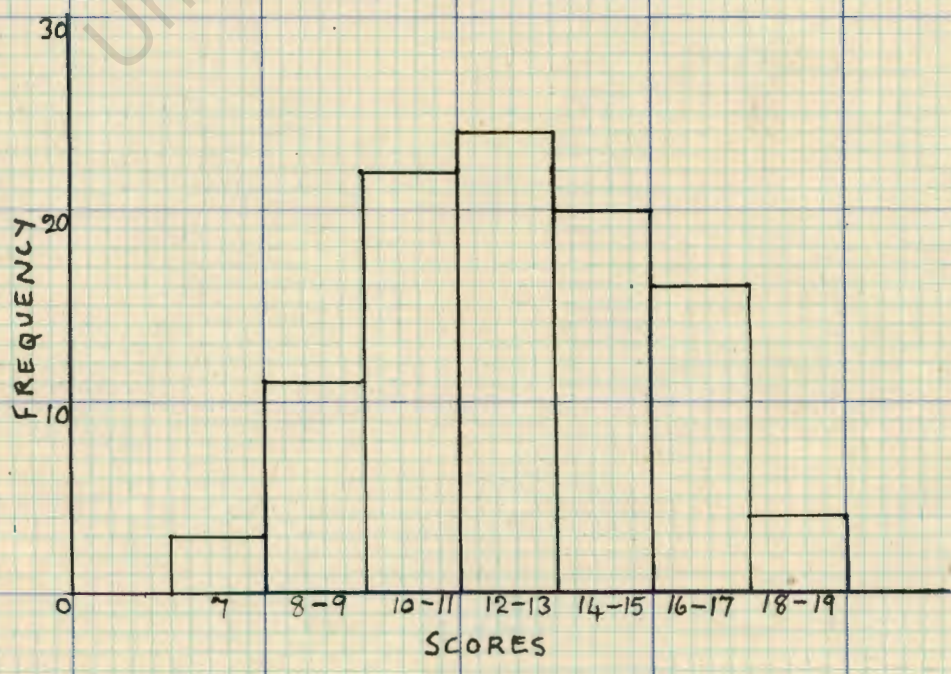
57.

FREQUENCY DISTRIBUTIONS
OF THE SCORES OBTAINED ON THE
TEST OF ASSERTION-SUBMISSION.

(i) EUROPEAN BOYS.

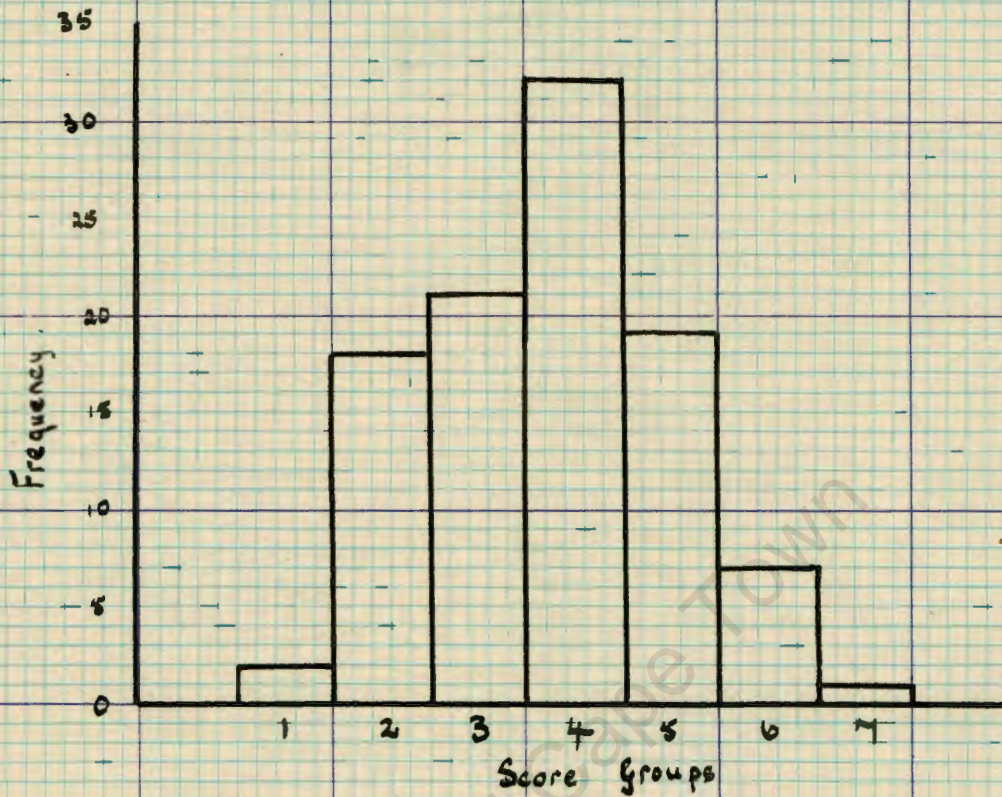


(ii) NON-EUROPEAN BOYS.

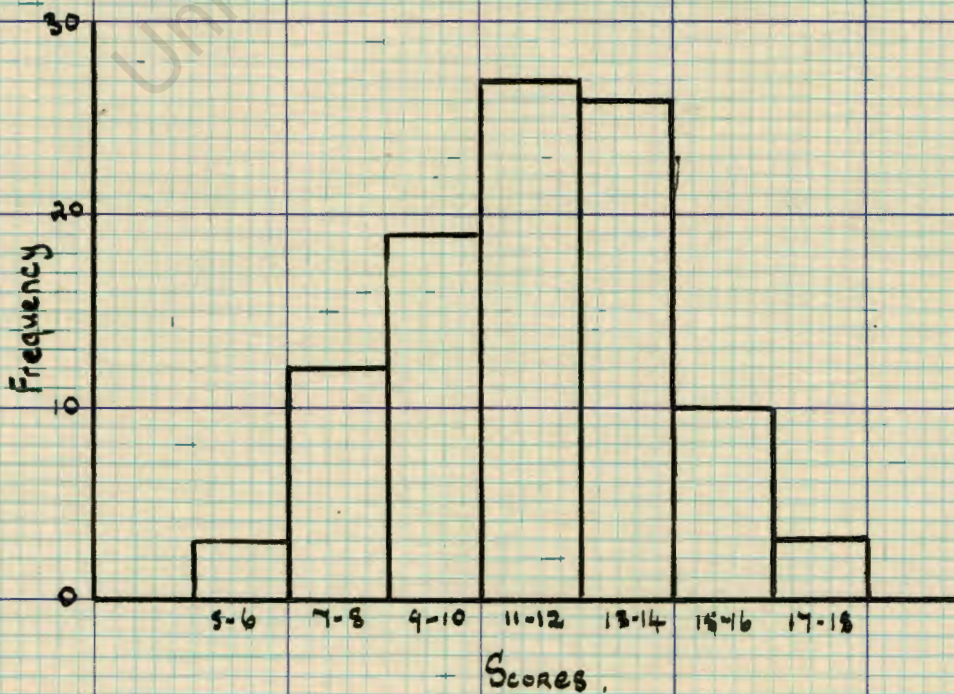


Frequency Distribution of the Scores obtained
on the test of Assertion-Submission.

(i) European Girls.

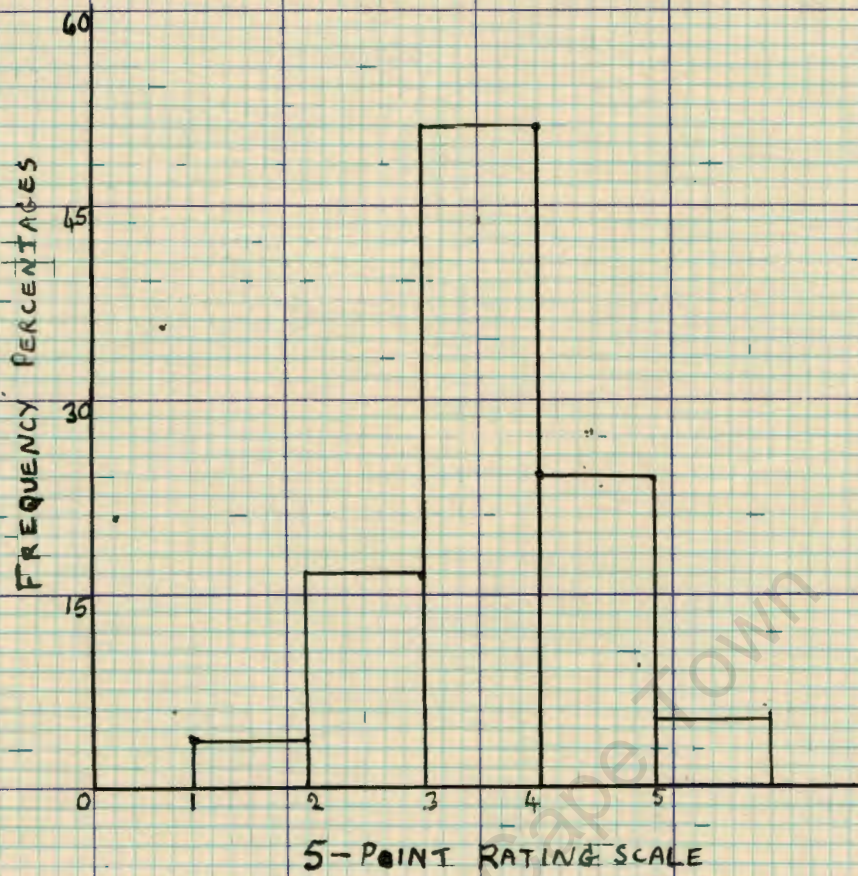


(ii) Non-European Girls.



59
FREQUENCY DISTRIBUTIONS
OF THE
AVERAGE RATINGS.

(i) EUROPEAN SUBJECTS.



(ii) NON-EUROPEAN SUBJECTS

