

FACTORS
AFFECTING the RELIABILITY of SELF-ESTIMATES
in
ANSWERING PERSONALITY QUESTIONNAIRES.

By
S. M. MOHSIN.

A Thesis Presented for the Degree of
Doctor of Philosophy
in the
University of Edinburgh

1948



PREFACE.

I am greatly indebted to Professor James Drever for his unfailing interest and encouragement throughout the progress of this work.

I wish to acknowledge my gratefulness also to Professor G.H. Thomson and Mr. W.G. Emmett, who permitted me to attend their classes in Higher Experimental Education at Moray House without which I could not have had the adequate training for using statistical methods.

My thanks are also due to the Psychology Students of the Edinburgh University for their co-operation in this research; the staff of the Department of Psychology for their assistance in shaping the test materials; my friend, Dr. Bansi Dhar, for his valuable comments on the chapter on Factor Analysis; and Jack, the lab. boy in the Department of Psychology, for his physical help in duplicating the testing materials.

C O N T E N T S.

	Page.
Chap. 1. Personality Questionnaires	1.
Chap. 2. (a) Reliability and Validity of Personality Questionnaires.	28.
(b) Errors of self-estimate.	59.
(c) Determinants of Errors of Self-Estimate.	77.

PART II. Practical.

Chap. 3. Aim and Method of Enquiry.	112.
Chap. 4. (a) Measures of Insight:	
(1) Intelligence Test.	127.
(ii) Liability to Projection.	133.
(iii) Self-Other Ratio.	178.
(b) Measures of Tendency to Compensation:	
(i) Self-rating on abilities.	194.
(ii) Self-rating on Desirable Trait-names.	202.
(iii) Interest in Higher Occupations.	207.
(c) Measures of Tendency to Repudiation:	
(i) Self-rating on Lapses of Conduct.	224.
(ii) Self-rating on Undesirable Trait-names.	230.
(iii) Interest in Occupations of Low Standing.	234.
(iv) Self-rating on Belief in Superstition.	238.
Chap. 5. Factor-analysis.	250.
Chap. 6. Summary and Conclusion.	260.
Bibliography.	

PART III. Appendix.

CHAPTER 1.

PERSONALITY QUESTIONNAIRES.

The use of standard measurements for the appraisement of human abilities is first found in the pioneer work of Francis Galton, MacKeen Cattell, and Alfred Binet. A new field of psychological study was opened which instead of preoccupying itself with the general processes of mind treated in the abstract, pushed the individual into the forefront and sought to determine the basis and extent of his differences from other individuals. The psychology of individual differences, as it came to be called, stressed the uniqueness and variability of human nature and soon dominated the scene as an independent discipline. Its special feature was its very close alliance with the other new science of statistics, whose formulations it liberally employed in its own methodology.

Measuring instruments fitting a very wide variety of human activities were fashioned and eagerly tried by the educationist and the industrialist. Greater strides were taken, in the beginning, in the direction of the so-called "general intelligence" tests and measurements of special abilities

and skills. The assessment of the comparatively more subtle and "implicit" aspects of human personality like attitude, interest, disposition, temperament, etc., was not seriously undertaken. It came, however, to be gradually realised that the understanding of the individual and the prediction and control of his behaviour could not be achieved unless measures were devised for exploring also the emotional life of man. A new departure had, accordingly, to be made which finally led to two distinct lines of approach. (1) The first tended in the direction of still stronger ties with statistics, culminating in the methods of "factor-analysis" which seek to order the complexities of human nature under a definite number of statistically determined elements of personality. The testing and rating scales of personality with their emphasis on the standardisation of test situations and quantification of individual responses with reference to the "average" tendencies of the group furnish its best illustrations. (2) The second carried to the extreme the emphasis on individual differences and stressed the irreducible uniqueness and incomparability of the personality. The exponents of this trend, mainly clinicians, are known for their distrust of mathematical concepts for the interpretation of human nature.

The questionnaire method ^{of} personality study

falls under the category of the rating and testing methods. In brief, it involves a series of questions which are combined into a single measuring scale. The questions relate to some particular aspect of personality, after which the scale is also named, like ascendance, aggressiveness, sociability, and so on. For scoring, a definite numerical weight, statistically determined, is assigned to each question. The total score made by a person is interpreted with reference to the central tendency of the scores found for a representative sample of the population.

Since the use of the questionnaire method extends also to many other branches of human enquiry, it might be useful to refer to the distinction proposed by Rugg.¹ According to him there are two classes of questionnaires:- (1) those eliciting information concerning facts objectively observable by the reporter and verifiable by others; and (2) those touching upon the "subjective" materials relating to attitudes, inclinations, tendencies, thoughts, feelings, etc., of the person answering the questions. The personality questionnaires belong to the second group. Their aim is to provide information regarding materials which are given directly to the individual in self-knowledge.

¹ Rugg, H.O., Statistical Methods Applied to Education. P.41.

The first questionnaire study of personality is represented by the Woodworth Personal Data Sheet. During the First Great War, Woodworth was called upon as the Chairman of the Committee for Emotional Fitness, to devise a method for diagnosing cases of unsuitability to stand the stress and strain of the war among the military personnel. He prepared a list of questions each one of which related to symptoms of emotional maladjustment described by psychiatrists and clinical psychologists. The questions were answerable by checking "Yes" or "No", provided with each question. The checkings were interpreted as indications of the presence or absence of the conditions, embodied by the questions, in the person concerned. The entire set of questions was first applied to the Columbia College students and drafted men. Out of the total of 200, 116 questions proved in this preliminary try-out to possess fairly high discriminating value. These comprised the final set of questions which Woodworth originally named the Personal Data Sheet and which later came to be known as the Woodworth Psychoneurotic Inventory. But before this questionnaire could be used in the army, the Armistice was signed and its value could not be ascertained in the intended situation. However, Hollingworth² used it on the patients in the army

² Hollingworth, H.L., The Psychology of Functional Neurosis. pp.117-150.

hospital and reported some interesting results. The entire questionnaire is reproduced by him in his *Psychology of Functional Neurosis*. The following items are cited to illustrate its general character:-

As a child did you like to play alone better than to play with other children?	Yes	No
Is it easy to make you angry?	Yes	No
Does it make you uneasy to go into a tunnel or sub-way?	Yes	No
Do you think you must do a thing over several times before you drop it?	Yes	No
Can you stand pain quietly?	Yes	No
Do you feel a strong desire to steal things?	Yes	No

The Woodworth Psychoneurotic Inventory

stimulated one of the most prolific movements in the field of psychological measurements and soon a fairly large number of questionnaires appeared on the scene. As Taxler³ remarks, "A fair estimate of the number of published tests and inventories loosely classifiable under the heading of personality is close to 500." Revisions and modifications of the Woodworth Personal Data Sheet were undertaken by Matthews, Cadey, Laird, House and Chassell.⁴ Among the notable additions and extensions, we have the following:-

³ Taxler, A.E., *Techniques of Guidance*, p. 99.

⁴ Symond, P., *Diagnosing Personality and Conduct*, pp. 178-184.

Allport's⁵ A - S Reaction Study - a test for ascendance-submission. It consists of items which represent actual every-day situations of life. The subject is required to select from a few standardised choices the type of behaviour which most nearly characterises his own usual adjustment to each of the situations. The following items will illustrate the nature of the test:-

When you see someone in a public place or crowd whom you think you have met or known, do you enquire of him whether you have met before?

Sometimes _____

Rarely _____

Never _____

Are you embarassed if you have greeted a stranger whom you have mistaken for an acquaintance?

Very much _____

Somewhat _____

Not at all _____

Heidbreder's⁶ Introversion-Extraversion Test.

Heidbreder prepared a list of 54 traits that were collected by Freyd from different sources, and used them as components of a rating scale of extraversion-introversion. The subjects were asked to check themselves against each trait by putting a minus or

⁵ Allport, G.W., "A test for ascendance-submission." Journ. Abn. Soc. Psychol., 1928, 23, pp. 118-136.

⁶ Heidbreder, E., "Measuring introversion and extraversion." Journ. Abn. Soc. Psychol., 1926, 21, pp. 120-134.

plus or question mark as the case may be. Some of the typical items are:-

Feels hurt readily; apparently sensitive about remarks or actions which have reference to himself.

Is critical of others.

Has ups and downs in mood without apparent cause.

The Thurstone⁷ Personality Schedule. The questions in this inventory represent efforts of various authors, like Woodworth, Heidbreder, Allport, to summarise in question form the principal characteristics of a neurotic personality as it has been described by numerous psychologists and psychiatrists. The items are similar to the Woodworth Psychoneurotic Inventory, except that the question mark is also added among the alternative choices, for example:-

Do you get discouraged easily? Yes No ?

The above questionnaires are intended to measure a single trait like neuroticism, ascendance-submission, etc. These have, accordingly, been described by Allport⁸ as "unit-trait" tests. Besides these there are "multi-trait" scales which measure more than one trait by putting different "diagnostic weights" for different traits. As an example of this scale we have the Bernreuter⁹ Personality Inventory,

⁷ Thurstone, L.L., and Thurstone, T.W., "A neurotic inventory", Journ. Socl Psychol., 1930, 1, pp. 3-30.

⁸ Allport, G.W., Personality, p. 328.

⁹ Bernreuter, R.G., "The theory and construction of the personality inventory," Journ. Soc. Psychol., 1933, 4, pp. 387-405.

which has been the most widely used inventory and reported in countless researches. Using the differential system of scoring, Bernreuter provides measures for:- (1) Neurotic Tendency, B1-N; (2) Self-sufficiency, B2-S; (3) Introversion, B3-I; and (4) Social Dominance, B4-D. The following items are quoted from the inventory:-

Yes No ? Do you often feel just miserable?

Yes No ? Do you specially like to have attention from acquaintances when you are ill?

Yes No ? Do you want some one to be with you when you receive bad news?

Yes No ? Do you try to get your own way even if you have to fight for it?

The method of factor-analysis gave birth to still other forms of multi-trait scales. When the inter-correlations between the responses to the component items of a questionnaire were factor-analysed, a number of independent factors was discovered, which had different loadings in different sets of items. By assigning, therefore, differential weights to the various items in proportion to their loadings in the factors concerned, the same questionnaire could be used for measuring all of those factors. Flanagan¹⁰ applied the method of factor-

¹⁰ Flanagan, J.C., Factor Analysis in the Study of Personality.

analysis to the responses to the items of the Bernreuter and discovered two factors:- (1) Self-confidence - self-consciousness and (2) Sociability - solitariness. He, accordingly, provided two additional scoring keys for the Inventory designated by him as F1-C and F2-S.

Guilford and Martin¹¹ and Guilford and Guilford¹² have compiled three sets of questionnaires on the basis of factor-analysis:- (1) An inventory of factors S T D C R; (2) The Guilford-Martin inventory of factors A M I N; and (3) The Guilford-Martin personnel inventory. The general character of the questionnaire items is much the same as that of the questionnaires described above and the responses also are provided in the alternative "Yes", "No" and "?" form.

Another personality inventory which deserves mention on account of its departure from the usual form is the Minnesota Multiphasic Personality Inventory.¹³ It consists of 550 statements, each

11 & 12 Guilford, J.P., and Martin, "The construction of the Guilford-Martin inventory of factors G - A - M - I - N", Journ. App. Psychol., 29, 1945, pp. 298-300.

Guilford, J.P., and Guilford, R.B., "Personality factors D, R, T, and A". Journ. Abn. Soc. Psychol., 1939, 34, pp. 21-36.

"Personality Factors N and G.D." Journ. Abn. Soc. Psychol., 1939, 34, pp. 239-248.

13 Hathaway, S.R., and McKinlay, J.C., Manual for the Minnesota Multiphasic Inventory.

printed on a separate card. The subject is asked to sort all the cards into three categories:- "true", "false", and "can not say". Quite obviously, these responses are mere verbal substitutes for the customary "yes", "no", "?". This inventory also, like the Bernreuter, Guilford-Martin and other multi-trait scales, is designed to provide scores not only on one trait but "on all the more important phases of personality". There is one special feature of the inventory. It provides "validity scores" also which function as a check on the dependability of the total score obtained by a person. A few examples may be quoted from the inventory:-

My memory seems to be all right.

Once in a while I feel hate toward members of my family whom I usually love.

I wish I could be as happy as others seem to be.

At times I have worn myself out by undertaking too much.

As we noted above, there are numerous other published and unpublished inventories. But most of them are modelled after the same fashion. As Vernon¹⁴ observes, "It is probable that a hundred or more of such tests have been published. But the great majority are simply modifications or extensions of three prototypes:- Woodworth's Personal Data Sheet,

¹⁴ Vernon, P.E., The Assessment of Psychological Qualities by Verbal Methods. P.67.

Freyd-Heidbreder's Introversion-Extraversion, and Allport's Ascendance-submission Test". They possess the same common character. In general, alternative choices in the form of "yes", "no" and "?", or their verbal substitutes, are supplied and the checkings on them are given literal interpretation. Thus, for example, if the subject answers "yes" to the question: "As a child did you like to play alone rather than with other children?" his response is taken on its face value and is treated to indicate the fact that this condition was actually characteristic of him during his childhood. Or, if a person says "No" to the question: "Are you absent-minded?" he is taken in fact to be free from this defect. Accordingly, a person is labelled as introverted, for instance, because he responds more often by checking "yes" against those questions which describe the trait of introversion, and "no" against those which represent the opposite condition of extraversion. But apart from this literal rendering of the questionnaire responses, it is also possible to interpret them "symptomatically". That is to say, the answers may be used merely to indicate how the various groups of persons - vocational, normal, abnormal, social, racial, etc. - respond to a set of questions, without considering whether the assertions or denials are representative of the actual conditions and traits of

the persons tested. As Cattell¹⁵ remarks about this mode of interpretation, "Here one simply correlates the response with some outside performance and uses it as an index or symptom of that performance, without regard to its literal meaning". Similarly, Eysenck¹⁶ suggests, "If we look at the behavioural act of underlining "yes", rather than "no" without necessarily drawing any conclusions as to the motives or underlying reasons which may have prompted this reaction, then we are dealing with a purely objective type of response which may or may not be of importance in the study of personality." Strong's¹⁷ Vocational Interest Blanks have been prepared on this basis. The responses are not interpreted as that one occupational group has a greater liking, for example, for fishing, dislike for hunting and indifference to philately, than another occupational group; but that one group has a significantly greater tendency to respond by checking "like" against certain items and "dislike" against certain others. But apart from Strong's work, this purely behavioural interpretation has been seldom attempted. As Cattell¹⁸ observes,

¹⁵ Cattell, R.B., Description and Measurement of Personality, p. 344.

¹⁶ Eysenck, H.J., Dimensions of Personality, p. 61.

¹⁷ Strong, E.K., J.R. Vocational Interests of Men and Women.

¹⁸ Ibid, p. 344.

"This audaciously empirical but non-naive use of the questionnaire is rare."

We illustrated above some notable personality questionnaires and described their general character. Besides those, there are other questionnaires which have been designated in the literature on mental measurements as "attitude" questionnaires and "interest" questionnaires. These too are to be included under the general name, personality questionnaires, as personality covers every aspect of human life and behaviour. Nonetheless, we have decided to use the expression "personality questionnaire", in this study, in a restricted sense, that is, as applying only to the type of questionnaires whose examples we have cited above. We have a precedent for this usage in a somewhat similar treatment suggested in the classification of the standard questionnaires by Symond, Taxler, Cattell and others. It is necessary to distinguish this type of questionnaire from the attitude and interest questionnaires. In order to achieve this end, it may be useful for us to quote, at the outset, examples from some typical attitude and interest questionnaires.

The following is an example from Vetter's¹⁹

¹⁹ Vetter, G.B., "A measurement of social and political attitudes and related personality factors", Journ. Abn. Soc. Psychol., 1930, 25, pp. 149-189.

measurement of social and political attitudes. He lists five opinions defined by him as reactionary, conservative, liberal, radical and neutral under each of 36 situations or objects like confiscation of wealth, question of birth control, question of divorce, the socialization of medical care, the nordic race, etc., and requires of the subject to express his attitude to each one of them by checking against the opinion with which he is "most in sympathy" :-

Minimum Wage Laws.

(1) There should be no interference whatever with the laws of supply and demand in the determination of wages. The state should fix or limit them.

(2) The minimum wage laws should go further than to guarantee to heads of families a wage sufficient for the bare necessities of life.

(3) The only wage regulation desirable is a minimum wage, sufficient for a decent living and guaranteed to every person willing to work.

(4) Wages should be completely uniform except for specially skilled and talented persons who are so urgently needed that they must be given increased pay.

(5) Wages should be made uniform for all men and women, from president to charwoman.

As another example of attitude test, we have Cason's²⁰ "Annoyance Test". It consists of a list of 217 items embodying situations or stimuli which evoke "annoyances, aversions and irritations". Each item is to be graded on a five-point scale containing the following descriptions:- (a) extremely annoying, (b) moderately annoying, (c) slightly annoying, (d) not annoying, and (e) have not been in the situation. Some of the typical items are:-

- (1) To see a person picking up his nose.
- (2) To see a public love making.
- (3) To see a person wearing very cheap jewelry.
- (4) To hear water dripping from a faucet.

Among interest questionnaires we may refer to the Strong Vocational Interest Blanks and Allport-Vernon Study of Values. The special feature of the Strong Interest Blank²¹ is that it was standardised in "terms of the interest of the persons successfully employed in the occupations", for which it provides scoring keys. The items in the Blank consist of lists of occupations, school subjects, amusements, activities, etc., for each of which the subject expresses his liking, disliking, or indifference.

²⁰ Cason, H., "An annoyance test and some research problems," Journ. Abn. Soc. Psychol., 1930, 25, pp. 224-236.

²¹ Op. cit.

The Allport-Vernon Study of Values²²

comprises a list of situations corresponding to Spranger's description of the six types of values:-

(1) theoretical or interest in the discovery of truth; (2) economic or interest in the useful; (3) aesthetic or interest in form or harmony; (4) social or interest in and love of people; (5) political or interest in power; and (6) religious or desire for comprehension of, unity with, the cosmos as a whole.

The following items are reproduced from the scale:-

Assuming that you are a man with the necessary ability, and that the salary for each of the following occupations is the same, would you prefer to be: (a) mathematician, (b) sales manager, (c) clergyman, (d) politician?

If you were given certain topics on which to write an essay, would you choose: (a) the role of church-going in religion, or (b) the defects of our present educational system?

We take up next the problem concerning the basis of the distinction between the personality questionnaires (used in the restricted sense) and the attitude or interest questionnaires. We may suggest offhand that personality questionnaires are those which provide measures for "personality traits" like

²² Allport, G.W., and Vernon, P.E., "A test for personal values," *Journ. Abn. Soc. Psychol.*, 1931, 26, pp. 231-248.

ascendance-submission, extraversion-introversion, etc., while the attitude and interest questionnaires are those which furnish a quantitative description of "attitudes" and "interests" respectively. But the question remains how the "personality traits" are distinguished from "attitudes" or "interests"? In order to answer this question, we look for the meanings of these terms and the basis of their distinction in the work of some contemporary writers on the psychology of personality.

Allport bases his formulation of the "trait" concept on the observed consistency and, relative, stability of behaviour and experience. He thinks that consistency and recurrence of behaviour can not be explained on the basis of the stimulus-response bond theory of behaviour, for no identical group of stimuli can be repeated in the literal sense. When an individual acts in the same manner on different occasions, he does so because the groups of stimuli presented on these occasions have the same personal significance for him. This fact leads Allport to conceive of "generalised tendencies" within the organism which render diverse objects and situations encountered by an individual equivalent for him in spite of their inherent differences and evoke in him responses having the same general character. These "generalised dispositions", Allport calls "traits".

Thus "a trait is a generalised and focalised neuro-
psychic system (peculiar to the individual) with the
capacity to render many stimuli functionally equi-
valent, and to initiate and guide consistent (equi-
valent) forms of adaptive and expressive behaviour".²³
Allport at first points to the fundamental similarity
between "traits" and "attitudes" as "underlying
dispositions within the latent mental organization of
each individual". Nevertheless, he thinks that
"attitudes" can be demarcated from traits on the
ground of being "bound to object or value"; traits
have no definite objective reference. He maintains,
further, that "attitudes" may be either "specific" or
"general", while traits are only "general". But
since Allport is opposed to the view that attitudes
are "specific habits" and refers them essentially to
"generalised systems" within the organism, it seems to
be rather misleading to treat them as "bound to
definite objects", or to think of a distinction
between "specific" and "general" attitudes. The
conception of a "specific attitudes" amounts to a
concession to the "stimulus-response bond" theory of
behaviour. It seems that Allport really means to
suggest that attitudes are less general in their
objective reference than traits. As he says "the
more numerous the objects that arouse an attitude,

²³ Op. cit., p. 295.

the more clearly does the attitude resemble a trait. The more an attitude is specific and stimulus-bound, the less does it resemble a trait".²⁴ But such a distinction is purely quantitative and difficult to determine for it raises the problem as to how general an attitude should be in order that it might not be confused with a trait. We do not notice any special formulation in the work of Allport regarding the concept of "interest", since he refers to this term rather incidentally.

Murray prefers the term "need", instead of trait, for he seeks to lay greater emphasis upon the "concrete individuality of every episode of a human being" which may or may not recur in the life of an individual, and aims, accordingly, to "formulate a single man - environment event".²⁵ He finds "need" to be more suitable for this purpose, since a need may be a temporary happening or a persistent disposition, but a trait essentially implies consistency, recurrences or repetitions. It seems hardly possible to make out what Murray precisely means by "need". In some places his use of the term suggests the same general significance which is possessed by Bergson's concept of the "elan vital" or Jung's conception of "libido". Thus, he calls a

²⁴ Op. cit., p. 293.

²⁵ Murray, H.A., Explorations in Personality, p. 712.

need "an organic potentiality, or readiness to respond in a certain way under given conditions;" "a latent attribute of an organism".²⁶ But when proceeding with his classification of needs, he seems to give the utmost specification to the concept and introduces such odd expressions as "need blamavoidance", "need harmavoidance", "need infavoidance", "need noxavoidance", and so on. One is reminded of the confusion that Freud introduced in his treatment of "instinct" which he identified with the "general energy of the psyche" and at the same time attempted to classify under various heads, talking of "part-instinct", "instinct-components", etc. Nonetheless, Freud at least posed some definite categories like "aim", "object", "source", etc., under which he ordered his formulations regarding instinct. But Murray impresses his readers not only with the essential "fluidity" and "dynamic nature" of needs, but also with the flexibility and transitional character of the expressions he uses to describe needs. Thus, he says, "need is the force within the organism", "an organic potentiality", and also, "need is the process which follows the stimulus and precedes the actonal response",²⁷ equating, in this manner, the "latent disposition" and the "need-activity". Similarly, "need is a disequilibrium which stresses

²⁶ Ibid, p. 61.

²⁷ Op. cit., p. 45.

toward equilibrium",²⁸ and also "every need arises out of a disequilibrium"²⁹ (the italics are mine). Likewise, he talks of "adience vectors" and "abience vectors" as "modes of satisfaction of need",³⁰ but also proposes a distinction between "adient and abient needs".³¹ His uses of the terms "attitude" and "interest" are equally ambiguous. He says, "the word attitude seems to indicate a state intermediate between subjectification and objectification". "It is an 'obvious readiness' to act in a certain way." "Attitudes make up the derm of a personality."³² It is hardly possible to make any definite sense out of these phrases. It seems to us that Murray's chief contribution lay in his methodological plan for research in personality; his conceptual scheme, which is our object of interest in this study, produces the impression of a confusion worse confounded.

Cattell³³ defines trait "as a collection of reactions or responses bound by some kind of unity which permits the responses to be gathered under one term and treated in the same fashion for most purposes". Whatever behaviour manifestations present any form of unity or interrelationship deserve,

²⁸ Ibid, p. 67.

²⁹ Ibid, p. 91.

³⁰ Ibid, p. 102.

³¹ Ibid, pp. 79-80.

³² Ibid, p. 113.

³³ Op. cit., p. 61.

therefore, the name of a trait. A classification of traits, accordingly, rests upon the type of unity represented. Cattell thinks of various forms of trait-unities, two of which are considered more important for the purposes of personality description: (1) dynamic trait unity, and (2) environmental mold trait unity. (1) Dynamic trait unity is determined by the unity of the goal to which the behaviour manifestations are directed. When the goal is innate or "biological", the trait unity is called an "erg". When the goal is acquired, it is called a "metanerg". Attitude and interest are subsumed under "metanerg". (2) Environmental mold unity exists when the "unity is that of a common effort or purpose from the standpoint of society or physical environment". Subsequently, perhaps, Cattell notices the defect of this classification in calling only the first type of trait unities as dynamic or goal directed, and includes the environmental mold unities under the "metanerg". Metanergs are then treated by him as "secondary dynamic traits" acquired under the influence of the environment. "Attitudes" which are classed under "metanergs" are taken to be similar to "sentiments", since both involve "consciousness of objects to which they are directed". "Interest" is used in a very general sense as accompanying the functions of all neuropsychic structures. "An individual is interested in things to which he attends, whether the

attention be connected with attraction or aversion, with sentiments, attitudes or complexes, with ergs or metanergs, with material or subjective objects."³⁴

We find that Cattell's analysis of the meaning of trait, attitude, or interest, does not make for any clear cut distinction between them, since all attitudes are traits and all traits when active involve interest. We do not expect, therefore, to apply his formulations to any advantage in bringing out the distinction between the different forms of questionnaires.

We find that among the contemporary writers on the subject, Angyal's formulations regarding the fundamental variables of personality offer a relatively adequate working plan under which we can order the three types of questionnaires and bring out their main features without much violence to their conventional structure and mode of classification. Angyal³⁵ proposes to derive all human activities, rather all processes of life, from a fundamental tendency in the organism, "the trend towards autonomy", which is opposed by the "trend towards heteronomy" which is the characteristic pattern of the environment. The dynamic relationship of the two factors, the organism and the environment, the subject and the object, Angyal calls the state of "biospheric

³⁴ Op. cit., p. 202.

³⁵ Angyal, A., Foundations for a Science of Personality.

tension", which exists in the "biosphere" - the field of all biological events. The "biospheric tension" lies neither in the subject, nor in the object, but "between them". The psychological experience of the biospheric tension, Angyal³⁶ calls "interest". Interest "is the experience of a significant biological relationship which is between the subject and the object". Any biospheric occurrence may be viewed either from the side of the organism or from the side of the environment. When viewed from the side of the organism it brings to light the various differentiations of the general tendency of the organism - the trend towards autonomy. These Angyal calls "drives". On the other hand, when the biospheric occurrence is viewed from the side of the object, it brings into relief the "valences" of the environment, its features as causes of attraction and repulsion, facilitation and obstruction, likes and dislikes.

Keeping in mind Angyal's representation of the "organismic total process" as involving the subject and object "poles", along with the dynamic relationship obtaining between them, we can formulate a basis for the classification of the three types of questionnaires. We can say that they all deal with the same processes and the difference between them is that of emphasis only. In the personality questionnaire the behaving and experiencing subject is pushed into

³⁶ Op. cit., pp. 126-127.

prominence and his moods, temperament, needs, traits, style of behaviour, etc., are brought into the focus. The reference to the object is minimised and questions are asked which call upon the subject to reflect on his own "inner" states. The attitude scales, on the other hand, push into relief the objects or situations to which the individual's tendencies are directed, with the demand for attraction or repulsion, approach or withdrawal, love or hate, which the object or situation makes upon the subject. That is why psychologists have generally considered an objective reference as characteristic of attitudes. Discussing the methods of measuring attitudes, Droba³⁷ observes, "Attitudes refer to a rather definite set of phenomena, having a definite specified object of reference". On this ground he excludes from his treatment of the measures of attitudes "studies concerning traits without a definite objective reference, such as introversion, ascendance, aggressiveness". Similarly, discussing the nature of attitudes, Droba³⁸ remarks, "One of the indispensable components of an attitude is the objective reference. It is a concrete goal toward

³⁷ Droba, D.D., "Methods for measuring attitude," Psychol. Bull., 1932, 29, pp. 308-323.

³⁸ Droba, D.D., "The nature of attitude," Journ. Soc. Psychol., 1933, 4, pp. 444-463.

which an attitude is directed. It is a point with reference to which a man becomes disposed so that he can act for or against it whenever the appropriate motive presents itself". The reference to objects throws into strong relief the "valences" of the objects, their "demand qualities", their aspects of "opportunity" and "contravention", "facilitation" and "obstruction". The testee is accordingly required, while answering an attitude scale, to express his annoyances, his preferences, his acceptance or rejection, etc., in respect of specific objects or definite situations.

The "interest" inventories push into the focus the subjective representation of the "biological relationship", the "biospheric tension", that obtains between the "subject" and the "object". In other words, they stress the affective aspects of activities or responses, actual or potential, in regard to an accepted or rejected object. For example, interest in an occupation or hobby as measured by an interest inventory, stresses the affective reactions of the subject, expressed in liking or disliking, not to objects or situations, but to the patterns of activities or performances which comprise that occupation or hobby. As Strong³⁹ observes, "Experimentally, an interest is a response of liking,

³⁹ Op. cit., pp. 6 & 7.

an aversion is a response of disliking". "The response of liking - disliking is to objects in terms of the activities or response-tendencies involved." (The italics are mine.) The stress on the side of activity is the basis of the very close connection that has often been pointed out between ability and interest. The former is a capacity for an ordered set of responses which ensures success in a given situation. Interest is attraction or repulsion for the same set of responses.

We should bear in mind that the distinction we have proposed between personality questionnaires and attitude or interest questionnaires is true only in a very general sense, for, in fact, a good deal of overlapping exists between them. Items of the type that should belong only to one form are actually encountered also in the other.

As we have mentioned above, the problem we have set ourselves for this study, applies, in strictness, only to the personality questionnaires. Our subsequent discussions would, accordingly, be centred round the personality questionnaire alone.

CHAPTER 2.

RELIABILITY and VALIDITY.

An instrument of measurement should be reliable. By its reliability is meant that it should measure consistently what it measures, that is, if repeatedly applied in the same circumstances it should yield identical or about identical results. By its validity is meant that it actually measures what it purports to measure. The reliability of a mental test is indicated by the amount of its self-correlation. Its validity is measured by the amount of its correlation with some outside criteria of the variable measured by the test. There are three methods for examining the reliability of a test.¹

(1) The split-half method, that is, finding the correlation between the sums of the scores on the alternate items of the test. In other words, the test is divided into two sub-tests, one containing all the "odd" items and the other all the "even" items. The scores made by the same group in the two halves are then correlated. From the correlation between the two halves is predicted the correlation of the

¹ Ferguson, G.A., The Reliability of Mental Tests, pp. 7-9.

total test with itself by the Spearman-Brown Formula.²

(2) The "test-retest" method, or repetition of the same test. The test is applied to the same group after an interval of time sufficiently long to minimise the effect of transfer from the previous administration of the test. The coefficient of correlation between the score made in the two applications of the test is treated as its index of reliability. (3) Application of parallel forms of the test. Two equivalent forms of the same test comparable in content and difficulty are applied to the same group either in immediate succession or with a limited interval of time and their correlation coefficient is taken as the measure of each other's reliability. Virtually, the three methods boil down to one, namely, correlating the scores on two tests which are either identical or contain comparable items. The test-retest method has one important point of difference from the split-half or equivalent-forms method. The interval of time separating the test administrations may bring about numerous variations in the subjective and objective settings of the two testing periods. These might cause variability in the testee's responses and, thus, lower the magnitude of the correlation coefficient. For the same reason, test-retest reliability is, generally, expected to be lower than the split-half reliability,

^t
² Garret, H.E., Statistics in Psychology and Education, p. 390.

though it is seldom lower than the parallel-forms reliability, since the devising of equivalent forms with different components items and still comparable in difficulty and content has, in strictness, been a feat difficult of accomplishment, specially, in the field of personality testing.

There has been disagreement on the point, namely, which method yields the most satisfactory result. We are not required to enter into the controversy. So far as personality tests are concerned, few parallel forms of the same test have been attempted and so the comparison lies between the split-half and the test-retest methods. In the writer's opinion, each of the two methods has its usefulness, since they do not tell exactly the same story. So far as consistency of responses is concerned, the split-half method yields certainly the most reliable result, as the scientific need for the constancy of the conditions in which the comparable sets of responses are made is fulfilled only by this method. Advocating the split-half method, Anastasi³ remarks, "The effects of variation in the subjects during even the short period of the test tend to be equalized by the temporal arrangement of odd and even items. This method seems, therefore, to give most nearly the reliability of the measuring instrument,

³ Anastasi, A., "The influence of practice upon test reliability," *Journ. Educ. Psychol.*, 35, 1934, pp. 321-335.

free from extraneous changes." But, on the other hand, it is quite reasonable to expect that consistency of responses judged from a single application of a test may be the result, wholly or partly, of some background influences acting within the organism or operating upon him from the outside, e.g., incidence of fatigue, nervousness, lack of interest, lack of incentive, etc., which might not recur in future administrations, and may thus give a spurious split-half reliability to the test. As Neprash⁴ points out, "In the use of this method, there exists always the possibility that a persisting factor may be biasing the responses to all questions in a constant direction with the result that, though all of the responses, and consequently the total score, may appear highly reliable and valid, the contrary may actually have been the case." The personality tests are still more fallible in this respect. They seek to measure those aspects of the personality which are highly complex and subtle, involving implicit processes "within" the organism. Further, the dependence of the test responses upon the special circumstances in which the measurement is made has been repeatedly stressed and is an important vitiating factor - the responses might vary with the

⁴ Neprash, S.A., "The reliability of questions in the Thurstone Personality Schedule." Journ. Soc. Psychol., 7, 1936, pp. 239-244.

variation in the circumstances. Hollingworth⁵ has said that many of the so-called traits of temperament "refer not so much to traits of individuals as to conducts of particular human pairs, or characteristics of human nature under special circumstances". It is important, then, to use a measure of reliability which shows the test's consistency despite a change in the external and internal influences operating upon the testees. This can be achieved by the test-retest method. To bring out the special feature of the test-retest reliability, over and above the mere consistency of responses shown by the split-half method, we may call the former a measure of stability or constancy of response, the determination of which is specially important for ensuring successful prediction. Hollingworth⁶ found considerable variation in the response to the Woodworth Personal Data Sheet before and after the Armistice, a fact which brings into strong relief the part played by the background factors that may remain undetected in a single administration of a test.

There is another question connected with the problem of test reliability, namely, what magnitude of correlation coefficient is to be accepted as a satisfactory index of reliability. For our guidance,

⁵ Hollingworth, H.L., Judging Human Character, p. 121.

⁶ Do. The Psychology of Functional Neurosis. p. 127.

we may safely adopt Kelley's⁷ answer to this question. He maintains that when a test is to be used for group measurement purposes a reliability coefficient of .50 or higher is needed. When the test is to be used for individual measurement purposes a reliability coefficient of .94 or higher is needed. We will observe in the sequel that while for most personality tests a reliability coefficient of more than .50 has been quoted, in few cases, within the writer's knowledge, a reliability coefficient as high as .94 is reported. The acceptance of Kelley's criterion might disappoint some devisors of personality tests who are inspired by the hope that their creations would be suitable for making individual diagnosis as well. The writer thinks that this expectation is due to excessive faith that has been put in the perfection of mental test methods. In fact, it is not possible to claim even of the most skilfully devised intelligence tests that they can predict in individual cases beyond a very limited measure of success. Less so with regard to the aptitude tests, as Hull⁸ remarks, while discussing the "index of forecasting efficiency", that for differential prognosis a correlation of .70 to .80 between a test battery and its criterion can alone be of "decided

⁷ Kelley, T.L., Interpretation of Educational Measurement, pp. 210-211.

⁸ Hull, C.L., Aptitude Testing, p.275.

value, but is rarely found", and that a correlation "above .80 is not obtained by present method of aptitude testing". How can this claim be, possibly, substantiated with regard to personality tests? We may conclude, therefore, that personality tests are valuable, if at all, as measures of group trends and can be assessed only as such. This should give no basis for the impression that their use is limited to their being mere research tools, as some psychologists think. Group differentiation is of no less practical importance than individual diagnosis. For example, in industrial selection, the cost and labour of individual personal assessment may be considered to be out of proportion to the advantages accruing therefrom. The method of group differentiation which gives a rough and ready idea of the dominant tendencies and traits of segregated groups may, then, serve the purpose better. Or, to adjust the relations of the workers to the management, it may be useful to have a general idea of the attitudes, interests, ideologies and purposes of the workers as a group. We can think of still higher sociological purposes to which the knowledge regarding the dominant trends of masses of people - nationalities, races, etc., could be turned. We have decided, therefore, in agreement with the consensus of opinion held by psychologists, that personality questionnaires are to be taken as measures of group tendencies and,

hence, for the evaluation of their reliability a correlation co-efficient of .50 or more, as proposed by Kelley, is sufficient. Viewed in this manner, personality questionnaires have a considerably high reliability, as shown by the following co-efficients of reliability quoted for some of the representative personality questionnaires:-

<u>Test</u>	<u>Investi- gator</u>	<u>Method</u>	
Woodworth Personal Data Sheet	Mathews	Split-half	.90
Allport's Ascend- ance-Submission Test	Allport	Split-half	.74
		Test-retest	.78
Thurstone's Per- sonality Schedule	Thurstone	Split-half	.90
Bernreuter's Personality Inventory	Stagner	Split-half N	.79
		Split-half S	.67
		Split-half D	.74
Bernreuter's Personality Inventory	Lentz	Test-retest I	.90
		Test-retest D	.92
		Test-retest S	.91
		Test-retest N	.92
Thurston's Per- sonality Schedule	Neprash	Test-retest	.74-.91
Bell Adjustment Inventory	Bell	Split-half	.80-.89

The validation of a mental test is more difficult than finding its reliability, because we are required to find a suitable outside criterion with which the test has to be compared. This criterion, strictly speaking, should express the function of the

same variable as that underlying the responses in the test which is to be validated. For this purpose, it is necessary to identify the ability or trait the test is measuring and then to look for other restricted area of responses wherein too the same ability or trait is at work. In other words, we should strive to know first what a test measures and then determine what other patterns of reaction are influenced by that what the test measures. Only, after these desiderata have been fulfilled that we can start with the work of validation itself. But the first requisite is itself too difficult to be supplied, namely, what the test measures, specially in the field of personality testing. The mere fact that a test is labelled as measuring a certain named variable, like "extraversion", for example, does not answer to our need. These terms remain ever undefined and seldom mean the same thing to two psychologists. For instance, the reactions sub-submed under "extraversion" according to one test designer, do not find a place under it according to another. We find Eysenck⁹ labouring under the same difficulty when he notices that according to the results obtained by him "neuroticism" and "introversion" are independent traits, while according to others they are identical. Or, when he finds that

⁹ Eysenck, H.J., Dimensions of Personality, pp. 51-53.

"sociability" has been, of necessity, included under "extraversion" by one group of personality psychologists, but has no place under the latter according to others. We encounter the same difficulty in the use of such terms as "adjustment", "emotional maturity", etc., which have no fixed meanings in the minds of even those who use them to describe their tests. To obviate this defect, some psychologists prefer the so-called operational definitions of personality variables which no doubt achieve definiteness and freedom from ambiguity, but are worthless as definitions, serving, as they do, as mere short descriptions of the hundred and odd items composing the test. Further, the stress these operational definitions put upon the peculiarities of the component test items and the unit responses thereto, makes them so relative to the specific situations represented in the test that in their case the discovery of a criterion measuring the same reaction patterns but comprising different situations remains a still remote possibility. It seems evident to us, therefore, that no test of personality can be amenable to the process of validation in the strict statistical sense, as it is hardly possible to determine the criterion against which it can be validated, far less so in the case of the personality questionnaires.

Beside the strict method of validation against a criterion, another method which has been frequently

tried for validating personality questionnaires is that of "internal consistency". It was first used by the Thurstones¹⁰ in the course of their standardisation of the ~~A-S Reaction Scale~~ ^{Neurotic Inventory}. According to this method the individuals scoring in the upper and lower extremes of the distribution of scores to the total test are set in separate groups and the percentages of the alternative responses, for instance, "Yes", "No" and "?", made to each item by each group are computed. If an item shows a considerable difference in the percentages made by the two groups, it is presumed to possess a high discriminating value and the "Yes" or "No" response, as the case may be, in respect of which the largest difference is shown, is alone assigned a numerical weight in the scoring. For example, if forty per cent. of the high scoring individuals respond to a question by checking "yes" and only five per cent. of the low scoring individuals respond in the like manner, that question is retained in the final selection of the test items. On the other hand, if an item is checked "Yes" or "No" as frequently by the two groups, it is eliminated from the list, having no differential value. An alternative method is to find the correlation between the answers to each item and the total scores, or to any pair of items, and to eliminate those items which fail

¹⁰ Thurstone, L.L., and T.W., "A neurotic inventory," Journ. Soc. Psychol., 1, 1930, pp. 3-30.

to correlate significantly with others or with the total. Thus, the items which are finally retained are internally consistent, they "hang together", and the test is considered valid on this account. But the method of internal consistency can not, reasonably, be treated as a method of test validation. It can only determine that the items composing a test are highly sensitive to differences between the persons to whom the test is applied, or that their responses always go together and, therefore, represent the function of the same variable. But this only guarantees the efficiency of the test as a measuring instrument; it does not throw any light on its validity, as it does not determine, by itself, the particular field in which one may profitably employ the test for prediction of behaviour. As Ellis¹¹ observes, "Internal consistency of a questionnaire demonstrates, at best, that it is a reliable test of something; but that something may still have little or no relation to the clinical diagnosis for which the test has presumably been designed." Ellis also doubts the correctness of the statistical assumptions underlying the use of the technique of internal consistency. He refers to the findings of Jackson and Ferguson who have questioned whether it gives even a true test of reliability, and of Rundquist and Stella

¹¹ Ellis, A., "The validity of personality questionnaires," Psychol. Bull. 43, 1946, pp. 385-440.

"who have pointed out its dangers as a validation procedure, and have emphasised the difficulty of obtaining suitable degrees of separation in the original criterion group selected for item analysis". Similarly, Murphy and Murphy¹² point out that the validity established by internal consistency seldom holds beyond the standardisation group. The unity demonstrated by the technique is between the given question and the original list of questions and does not constitute proof of coherence or "occurring-togetherness" of the traits themselves. Hence, though the internal consistency of personality questionnaires is naturally quite high, as the technique forms a part of the standardisation process, its use as an index of the validity of the questionnaire is open to grave doubts.

Still another method which has played the major role in the validation of many personality questionnaires is the so-called method of clinical validation. This method is an extension from the field of ability and aptitude testing. Intelligence tests, generally, and measures of special abilities and skills, particularly, have been validated by the estimation of their power to predict success within the sphere of performances which they involve. If a test has been found to discriminate between groups of

¹² Murphy, G., Murphy, L., and Newcombe, T.,
Experimental Social Psychology.

persons known, on other grounds, to be successful and unsuccessful in a given set of activities, that is, the scores made by the two groups are significantly different, then any person who scores high on the test is expected to achieve greater success in the activities concerned than those persons whose scores are comparatively low. Obviously, in order to ensure the test's ability to predict success, the criteria of success must be some definite and objective indices like saving in time, increase in production, etc.¹³ When personality questionnaires were first devised they were offered as tests of emotional adjustment and it was, accordingly, supposed that a questionnaire would be valid if its scores could mark out the successfully adjusted person from the unsuccessfully adjusted and, within the latter, could set apart persons showing the various degrees of unsuccessful adjustment. And, since abnormality of behaviour has been considered to be the expression of lack of adequate adjustment, successful adjustment was thought to be tantamount to normality of behaviour. The validity of personality questionnaires was, accordingly, sought to be determined by estimating its power of discrimination between the normal and the abnormal, and, more specifically, its capacity to yield a differential

¹³ Hull, C., *Op. cit.*, p.375-76.

diagnosis of persons suffering from the various psychopathological syndromes. Numerous investigations have been made to examine the validity of the various personality inventories by this method, but the results are far from satisfactory. **Super**,¹⁴ Patterson¹⁵ and Ellis¹⁶ have made very exhaustive reviews of the literature related to the validity of personality questionnaires. The first two have confined themselves to the investigations conducted in connection with the Bernreuter Personality Inventory, the results of which apply equally well to all similar measurements. The third reviewer has considered also some of the other personality questionnaires. **Super** quotes a number of studies some of which support the power of the Bernreuter Inventory to make differential diagnosis, while others run counter to it. At the end of his survey, **Super** remarks, "When the data are examined in detail, they do appear to reveal differences between normal and

¹⁴ **Super**, D.E., "The Bernreuter Personality Inventory. A review of research." Psychol. Bull., 1942, 39, pp. 94-125.

¹⁵ Patterson, C.H., "The relationship of the Bernreuter scores to parent behaviour, child behaviour, urban - rural residence and other background factors in 100 normal adult parents." Journ. Soc. Psychol., 24, 1946, pp. 3-49.

¹⁶ Ellis, A., "The validity of personality questionnaires." Psychol. Bull., 43, 1946, pp. 385-440.

various groups of abnormal individuals, even though these differences are not so clear-cut as one would wish." The two other reviews, which came long after Super's, are unanimous in rejecting the claim of any personality questionnaire to serving as a satisfactory basis for clinical differentiation. Patterson refers to several studies which were devoted to investigating the power of the Bernreuter Inventory to discriminate between normals and various groups clinically diagnosed as neurotic, psychotic, or maladjusted, and concludes that the "results are not entirely consistent". Ellis also quotes the findings of 75 studies related to this problem and concludes that the majority of them show "either negative or questionably positive results".

There seems to be no element of doubt regarding the failure of the personality questionnaires to show a consistent record of clinical validity. No doubt the method of clinical validation also leaves much to be desired and it is quite possible that the apparent lack of validity of the questionnaire may be due entirely to the defect of the method of validation. Unlike occupational or industrial success, successful adjustment in the emotional field does not show itself through any definite and precise objective marks capable of receiving quantitative expression. The concept of normality, as is well known, is purely relative and the distinction between

the normal and the abnormal, strictly speaking, is difficult to determine. There are hardly any symptoms of abnormality which are not experienced by the so-called normal person as well, specially when the normal is compared to the psychoneurotic. It is only the psychotic pattern which shows such extreme deviations from the average modes of reaction that it can present an easily identifiable picture. But the questionnaire method, as we will see later, depends for its efficacy, above all things, on the ability of the subject to possess insight or self-knowledge, which the psychotic notoriously lacks. It follows, therefore, that when a personality questionnaire is administered to two groups segregated on the basis of clinical diagnosis as normals and psychoneurotics, it may be difficult for the normal to deny in himself the conditions which point in the direction of abnormality, and, conversely, possible for the psychoneurotic to express possession of those conditions which falsify the verdict of clinical diagnosis. As one study reports, when the Bernreuter Personality Inventory was applied to a group of normals and to a group of psychoneurotics, the normals made more neurotic scores than the psychoneurotics. The writer has tangible reasons to believe that among the set of serious minded introspectively inclined university students who have been usually asked to serve as the control group for the purpose of clinical validation

of questionnaires on the basis of normal-abnormal differentiation, a fairly large percentage believe that they suffer from internal emotional inadequacies and lack of satisfactory social adjustment, a notion which might influence their checkings of the questionnaire items in the unfavourable direction. That is why personality test holds out a great temptation to these young men; the incitement is the opportunity to verify this disconcerting notion regarding themselves. And that is what also makes them so much concerned about knowing the results of the testing.

There may be another reason also for the failure of clinical validation on the ground of differential diagnosis, namely, the imperfection of the method of clinical diagnosis. The syndromes of mental diseases have such an amount of overlapping that any system of nomenclature is bound to break down in actual practice. The result is that the classes or categories under which the various groups of patients may be placed are quite likely to be very artificial and thus may, reasonably, fail to conform to the classification suggested by the variations in the questionnaire scores. Moreover, the diagnosis of a case of mental disease, as falling under one category rather than another, is relative to and dependent upon the insight and typical experiences of individual psychiatrists and, consequently, disagree-

ment on this matter among the members of this profession is a very common occurrence. In order to obviate this possibility, clinical validation has been sought to depend upon agreement on diagnosis which is to be secured by comparing the diagnostic ratings on the group concerned made by a number of experienced psychiatrists. But few attempts on this line have been reported in connection with the clinical validation of personality questionnaires.

Allport¹⁷ strikes at the very foundation of clinical validation by dissenting with the prevalent view that originated from Kretschmer¹⁸ that the abnormal is just an exaggeration of the normal. According to this view, it was expected that the normal and the abnormal could be assigned places on the same trait continuum, and, consequently, the quantitative expression of the distance between their positions was supposed to function as the index of their possession of or freedom from pathological conditions. In fact this belief inspired the excessive trust in clinical validation as one of the most adequate methods of testing the validity of personality scales. Allport maintains, on the contrary, that the mentally diseased personality is functionally quite different from the normal. He observes, "Is the normal personality simply an

¹⁷Allport, G.W., *Personality*, pp. 73-76.

¹⁸Kretschmer, E., *Physique and Character*.

undistinguished edition of the mentally diseased?" We do not hold this view in reference to organic conditions. There is no continuum of states from cancer to no-cancer. The patient either has a malignant growth or else he hasn't; there are no intermediate conditions. Similarly, a diseased mind is in many respects functionally quite different from (and not merely an exaggeration of) the normal mind." Likewise, Super,¹⁹ commenting on the failure of the Bernreuter Personality Inventory to discriminate between the normal and the abnormal, remarks, "But this can be expected of the inventory only on the ground that the normals and the abnormals are on a single continuum.... The inventory may be adequate only to distinguish between normal persons and normal persons with abnormal tendencies". If Allport and Super^e are right, then this is another ground for rejecting the clinical method of validating personality questionnaires.

Other methods of validation using the technique of group differentiation with reference to behaviour problems, personnel problems, social groupings, occupational groupings, etc., have met with similar fate as the method of clinical validation. There is one method which has appeared to offer a more satisfactory result, namely, validation of

¹⁹ Super, D.E., Op. cit.

personality questionnaires against one another. But the weakness of this method also has been clearly brought out by Kuznet²⁰ in respect of the Bernreuter Personality Inventory, which holds for other questionnaires as well. He found that the Bernreuter consists almost wholly of the items that constitute the other tests that have been used in validating it. "The number of common items range from 50 with the Thurstone Neurotic Inventory to 31 with the Allport A-S Reaction Study. The common items were found to determine over 70 per cent. of the variance of the total scores on the neurotic tendency and the self-sufficiency scales, and on the average 40 per cent. of the variance of the total on the introversion - extraversion and the ascendance - submission scales of the Inventory. These findings indicate that the high validity of co-efficients obtained by the Bernreuter are to a large degree spurious." A glance at any two personality questionnaires readily brings to one's view such a number of common items that any evidence of correlation between the questionnaires becomes more an index of reliability than of validity.

Ellis²¹ has collected the reports of numerous studies on the validity of personality questionnaire using various methods and got a grand total of 259

²⁰Kuznets, G., "An analysis of Bernreuter Personality Inventory". Psychol. Bull., 1934, 31, p.585.

²¹Op. cit.

investigations. On sifting the results of each, he finds 80 positive or mainly positive, 44 questionably positive, and 135 negative or mainly negative. He concludes, "Obviously this is not a reliable record for the validity of paper and pencil personality questionnaires." Patterson²² takes a very liberal estimate of validation as that indicated by the correlation of a given instrument of measurement with any other variable. He, accordingly, correlates the Bernreuter with a number of variables "including such background factors as age, education, intelligence, age of marriage, duration of marriage, income, urban-rural residence, ratings of the parent-child behaviour of mothers, and child behaviour and personality". He does not get any conclusive result and remarks. "The fact that the Bernreuter is unable to discriminate these differences and substantiate these relationships must be taken as an indication of its lack of validity". What holds of the Bernreuter Personality Inventory is equally applicable to the other questionnaires, since they have a common kinship.

The questionable validity of personality inventories stands in stark contrast to their "notoriously high" reliability. Viewed statistically, this result is not very curious as the relation

²² Op. cit.

between reliability and validity is not symmetrical or reversible. A test, in order to be valid, must be reliable, since its correlation with the validating criterion depends upon its reliability and that of the criterion. If either of them fails to yield a consistent result, any comparison between them is idle. But a reliable test may not be valid. That is, it may give consistent results and at the same time its results may not be the function of the variable which the test purports to measure and, therefore, fail to correspond with any other criteria of that variable. A question naturally arises: Does this account of the statistical relationship between reliability and validity tell us the complete story which covers also the psychological significance of the relation? We can answer this by posing another question: What does the reliability of a test psychologically signify? When we measure a test's reliability, say by the split-half method, the two halves actually stand as two separate tests which are compared to one another. The items composing the two tests are naturally different, as no item is duplicated in the total test. But the responses made by the group concerned to the two halves are consistent - subjects scoring high on the one score high on the other - which is indicated by the high positive correlation coefficient. Such a conformity is possible because each person, in the group,

responds to a set of items composing one half in the same manner as to that composing the other half. Psychologically we can express this as: a certain group of items in either half provoked, despite their distinctness, the same tendency of response in the testees. Hence it follows, the reliability of a test does not merely show the comparability of the total scores on the two halves of the test, but it also indicates the operation of an underlying tendency in each subject which accounts for his similarity of responses to the two halves. As a matter of fact, we can lay down a general principle that consistency of behaviour, in whatever situation, if repeatedly shown, always gives a clue to a "habit of response" characteristic of the person concerned. Likewise, when a test shows consistent results, this fact proves that there is something "deep-seated" in the persons taking the test which is provoked to function every time similar groups of test situations are presented. As Stagner²³ remarks, "It is difficult to see just how a high reliability could result without some underlying consistency which caused the individuals scoring high on one portion of the test to do likewise on another". Allport²⁴ also expresses the same fact when he says, "Reliability of a many-itemed scale is prima facie evidence for some

²³ Stagner, R., Psychology of Personality, p. 125.

²⁴ Allport, G.W., Personality, p. 257.



kind of generality in conduct". As a matter of fact, the search for reliability is stimulated by the need to discover, thereafter, the basis underlying the stability of responses. We do not ascertain a test's reliability for nothing, but to ensure that the test has the power to excite some persistent and enduring "pattern" of reaction in the individual testees, that the responses to the test items are not governed by superficial and variable factors, or chance influences, but there is an underlying unity which so organises the great variety of the test situations and the responses that follow as to lend to them the same functional significance, or, as Allport²⁵ very aptly puts it, to render them dynamically equivalent. This unity is not determined by any "objective" similarity in the stimuli provided by the test items, for, objectively considered, that, is, divested of its "meaning" to the testee, each item is distinct from another. Allport²⁶ has very conclusively proved, and so we need not dilate this point, that consistency of behaviour can not be interpreted as long as we look for the interpretation to the objective stimuli; neither similarity of stimulus, nor the supposition of "identical elements" within "stimulus fields", can account for consistency of response. It seems evident, therefore, that persistence of the same

²⁵ Ibid, p. 280.

²⁶ Ibid, pp. 248-268.

behaviour, despite the indefinite variability of the situations, evocation of a common way of reaction to the various aspects of the environment, are definite indications of enduring trends in the personality which the dynamic psychologists have called "traits", "needs", "attitudes", etc. These are systems of response tendencies whose expressions are not confined to particular reactions, but cover highly "generalised fields of responses".

Since the reliability of a test is determined by some enduring trait in the personality of the testees, a given coefficient of reliability provides a clue to the possession by the individuals concerned of a "generalised trend" or "pattern" of behaviour. A test of high reliability, then, is not to be thrown out if its validity fails to be proved. For, its reliability augurs that the search for its validity would not be endlessly defeated. As Lentz²⁷ observes, "Reliability study is conceivable as a step in the direction of validation, since the absence of reliability necessitates the absence of validity, and the presence of reliability makes validity possible". In fact, the failure to prove the validity of a reliable test does not amount to its actual lack of validity; it merely shows the limitation of the research. As the test indicates "some" enduring

²⁷ Lentz, T.F., "The reliability of the opinionnaire technique studied intensively". Journ. Soc. Psychol., 5, 1934, pp. 338-364.

element in the personality of the testees from whom its reliability has been obtained, the matter of its validation rests with the discovery of some area of responses, other than those tackled in the test situations, in which the same underlying disposition is brought into play. The determination of this area is possible, for the disposition resides in the persons and not in the tests; its manifestations must extend to the actual life of the persons.

We may conclude, therefore, that every reliable test is valid in a general sense, it indicates an underlying trait of the testees; it may be invalid in a special sense, if it fails to correlate with the variable against which we elect to validate it. In other words, any reliable test possesses validity, since its variance must correspond to that of some other variable of behaviour, as implied by its consistency, but its validity may not be proved to us, since that variable may have been hitherto undetermined. We notice, therefore, a reciprocity of relation obtaining between reliability and validity, when viewed psychologically. Not only is a valid test reliable, but also a reliable test is valid in the sense of the measure of a "true" psychological disposition, though it may not be valid in the restricted sense as the measure of an alleged function.

The reliability of personality questionnaires can also be interpreted in the same manner. The

subject makes the same composite ~~scorings~~ to two halves of the questionnaire, or, during its repeated applications, because of the functional equivalence of its component items, because they excite in him the same generalised tendency, put into operation the same pattern of behaviour. The principle of "functional equivalence" is reflected in the selection of the questionnaire items and the system of scoring the questionnaire responses. In devising the personality scale, the experimenter selects a wide variety of items, but the selection is not random. He uses only those items which his psychological experience and insight suggest to be functionally connected with the variable he is proposing to measure and he assigns weight in the scoring to those responses alone which he deems to be the alternative modes of expression of the same behaviour. For example, he thinks that situations of a certain kind are most likely to evoke dominant or submissive behaviour. He substitutes verbal representations for those situations and assembles the former as a scale for measuring dominance-submission. Considered in abstraction from the measured traits, the situations are dissimilar and disconnected, but they are unified and treated as "generally the same" because they function alike in evoking the same generalised tendency. The responses too, considered in themselves, may be diametrically opposite as "Yes" and

"No". But in scoring, they may be treated similarly because as expressions of the same tendency they are equivalent. As Allport²⁸ observes, "The welter of stimuli to which the individual is exposed fall for him, as it were, into constellations, every member of which is effective in producing some response. Correspondingly, the responses he makes, throughout infinitely varied, are not as diverse as they appear at first sight, for many of them are also equivalent in their personal significance. Thus for a man with a disposition to be polite innumerable environmental occasions are equivalent in their power to arouse this particular determining trait, and at the same time the polite gentleman finds innumerable ways of expressing his dominant trait (equivalent responses)." If in devising a personality inventory, the experimenter is not at fault, that is the scale he has prepared gives a consistent result on account of the fact that the items are rendered equivalent for the testees because they evoke the alleged trait within them - the trait or tendency intended to be measured, then the test responses are definite indications of the trait and the scale provides its "true" measure. Persons differ in their total scores in the inventory because of the differences between them with respect to the "degree of generalisation" of

²⁸ Op. cit., p. 281.

the measured trait. "The degree of generalisation of such a disposition", as Allport²⁹ puts it, "is measurable by the range of equivalence". It "varies inversely with the degree to which stimuli and responses are discriminated". Putting it more simply, if the trait is highly organised in a given individual, which means that it possesses a high degree of generalisation, then all items which are psychologically expected to be rendered equivalent by the actuation of a given trait are actually made so and the score obtained by him is the maximum possible in the test. If, on the other hand, the trait is poorly integrated in a certain individual, the area of equivalence is likely to be narrow or limited for him; only a few items would be rendered equivalent and, therefore, responded to in the expected manner. In respect of the remaining items, there would be specific responses to the specific items which would neutralise each other like unsystematic chance influences. The result will be, comparatively, a much lower score for that person. The experimental results of the Character Education Enquiry conducted by Harts-horne and May,³⁰ which have been so often quoted in their favour by the exponents of the "stimulus-response bond" theory of behaviour, can be

²⁹ Ibid, p. 280.

³⁰ Symond, P.M., Diagnosing Personality and Conduct, pp. 303-318.

interpreted in the like manner. Hartshorne and May failed to identify any "generalised trait" of honesty and other character qualities, and concluded that such alleged traits are groups of specific habits rather than general traits. Their experimental results have shown them that a child that was honest so far as stealing money was concerned did not prove to be honest when subjected to the test of truthfulness. But, as Allport³¹ and Stagner³² have argued, this inconsistency in the child's responses indicates only a lower level of organisation of his traits and does not disprove the existence of a trait. In other words, when a test of honesty, which comprises items referring both to stealing as well as untruthfulness, is administered to a child who has not achieved a higher level of organisation of his habits, he will respond to the "stealing" items in one way and to the "lying" items in another. The test will indicate within him the functions of two distinct patterns of behaviour which due to the lack of development, defect of training, or absence of appropriate environment, have not been integrated into one. On the other hand, to an adult with an integrated trait of honesty, both types of items will be functionally equivalent and his responses will show a uniform consistency all through the scale.

³¹ Op. Cit., pp 251-255.

³² Op. cit., pp 153-158.

ERRORS OF SELF-ESTIMATE.

A proposed test of personality will show validity if the assumed trait or principle of behaviour that influenced the formulation of the test is the actual counterpart of the underlying disposition that works in the responses of the testees. On the other hand, if the test fails to show validity but is proved at the same time to possess a high reliability, as is the case with the personality questionnaires, then we may presume that the consistency of the score made in the test is not the function of the alleged disposition, but of some unknown factor in the personality. The test items stimulate this factor and its operation renders certain items equivalent for the respective testees and evokes in them equivalent responses. With respect to such a scale, we are entitled to hold that its component items are not the measures of the variable for measuring which they were selected. We are, then, led further to the conclusion that personality questionnaires profess to measure one thing, but actually measure something else, for all of them show a high reliability against the background of a low validity. If that is so, then the devisers of the personality questionnaires have, one and all, suffered from a gross error of judgment; they have posed their tests as measuring something other than

ERRORS OF SELF-ESTIMATE.

A proposed test of personality will show validity if the assumed trait or principle of behaviour that influenced the formulation of the test is the actual counterpart of the underlying disposition that works in the responses of the testees. On the other hand, if the test fails to show validity but is proved at the same time to possess a high reliability, as is the case with the personality questionnaires, then we may presume that the consistency of the score made in the test is not the function of the alleged disposition, but of some unknown factor in the personality. The test items stimulate this factor and its operation renders certain items equivalent for the respective testees and evokes in them equivalent responses. With respect to such a scale, we are entitled to hold that its component items are not the measures of the variable for measuring which they were selected. We are, then, led further to the conclusion that personality questionnaires profess to measure one thing, but actually measure something else, for all of them show a high reliability against the background of a low validity. If that is so, then the devisers of the personality questionnaires have, one and all, suffered from a gross error of judgment; they have posed their tests as measuring something other than

what it actually measures, the latter being altogether unknown to them. But this assumption seems to be unwarranted in face of the fact that some of the notable questionnaires, a few of which we have mentioned in the preceding chapter, have been devised by really able psychologists. They did not belong to the category of slipshod investigators to have defined the traits they intended to measure according to one principle, and selected the materials for their measuring scales after another. In truth, they have invariably used their definition of the trait they proposed to measure as the criterion for selecting the materials that constituted their tests. When Woodworth, for instance, prepared his Personal Data Sheet, he did not bring out a mere collection of items selected ad hoc and decreed arbitrarily to be indicative of neurotic tendency. In fact, he constructed his items out of the numerous symptoms which psychiatrists and clinical psychologists have laid bare in describing neurotic conditions. The same can be said of the other questionnaires. There can be no doubt, then, that the items really represent situations that call for the activation of the alleged trait. If a man is habitually "troubled with the idea that people on the street are watching him", he can not but be judged as extremely self-conscious. Or, if some one is found usually "reluctant to meet

the most important person present", there can be no two opinions about his lacking an ascendant disposition. There seems no legitimate reason, therefore, to believe that the personality questionnaires betray any real divergence between the suggested variable they are meant to measure and the choice of the situations intended to represent it. The real defect may then lie in another direction, namely, the discrepancy between the suggested situations and the responses of the testees. We have already described the method used in the personality questionnaire. The test items are verbal representations of actual life situations and the subject is not asked to respond to the situations as such but to express his opinion regarding his usual adjustment to the various aspects of his environment which are portrayed by the test items. Accordingly, when the testee responds to a question by checking this or that answer, his responses are not taken in their rights as the acts of checking against "Yes" or "No", as the case may be. They are interpreted as expressions of his opinions on his typical adjustment to the various situations encountered in real life, the ways in which he actually meets them. It is quite likely that these estimates of his behaviour may not present a true picture of how he would really behave if the actual situation were presented. There is no guarantee that the opinion duplicates the fact. The reliability of

the test scores can not offer such a guarantee. There may be some dispositions at work during the time the subject is answering the questions, other than the alleged trait, which consistently bring about the same kind of divergence between the fact and the statement about the fact all through the scale. As Neprash¹ points out, referring to the split-half method of testing reliability, quoted also earlier, "There exists always the possibility that a persisting factor may be biasing the responses to all questions in a consistent direction with the result that, though all the responses, and consequently the total score, may appear highly reliable and valid, the contrary may actually have been the case." How this comes about will be subsequently elaborated by us in greater detail, for this is going to be our main problem. We can mention in passing that the same set of opinions, more or less, are expressed by the subjects in regard to similar items in the two parts of the test or on its repeated applications, irrespective of what their responses have actually been, hence the high level of consistency shown by the test. But since the possibility remains that the variability in the expressed opinions of different subjects may not

¹ Neprash, S.A. "The reliability of questions in the Thurstone Personality Schedule", Journ. Soc. Psychol., 7, 1936, pp. 239-244.

reflect the varieties of their actual adjustment, a comparison of the responses with other criteria of adjustment shows utter lack of correspondence. As Lentz² has remarked, the reliability co-efficient answers only the question: "Will he" (the subject) "give the same opinion under similar circumstances on a later occasion?" There are other questions intimately connected with the evaluation of questionnaire responses, namely, "Has the subject sincerely expressed his opinion? Will the subject behave overtly consistently with his expressed opinion? Does the subject really have an opinion on this subject and does he know what it is?" It follows that the lack of validity of questionnaires, other than being assigned to a defect in the content of the test items, can be alternatively interpreted as being due to the lack of consistency between self-estimated adjustment and actual adjustment. In other words, it may be due to the lack of reliability of self-estimate of personal attitude and conduct due to the persistent operation of some constant factors of distortion. That it is possible for such factors to be at work in personality measurements is borne out by the inherent difference between personality questionnaires and tests of abilities. This has

² Lentz, T.F., Jr., "Reliability of the opinionnaire technique studied intensively by the retest method." Journ. Soc. Psychol., 5, 1934. pp. 339-364.

been very clearly brought out by Symond.³ He says, "In taking a test, one is aware that he is being tested and bends his energies accordingly; on the other hand, he does not take a questionnaire, he answers it. In answering a questionnaire the issue is not whether a person can answer the questions; but whether he will answer the questions truthfully. In a test we look to the difficulty of the questions and are interested in the speed with which they are answered.....In a questionnaire we eliminate difficulty by making the questions as easy and simple as possible and give the person as much time as he wishes to answer. We place the emphasis on truthfulness of response. In answering a questionnaire one may alter his answers at will, allowing them to portray one or another picture of the situation to suit a particular purpose. Tests, in short, are designed to find out what a person can do, while questionnaires are designed to find out what a person has done and will do, or what he thinks or feels or believes."

The divergence between expressed opinions on personal behaviour, attitude, thought, or, belief and their real character has been indicated in numerous investigations related to the evaluation of judgments on self, and the tendency toward the desire to make a favourable impression has been found, persistently,

³ Symond, P., Diagnosing Personality and Conduct, p.122.

to influence these judgments. Hollingworth⁴ remarked in as early as 1922, "But perhaps the most important result of this enquiry is the definite evidence that self-estimates are misleading and that this traditional method of judging character lacks the accuracy that its practice suggests." Commenting on the value of personality questionnaires, he observes that the method of personality inventory "is essentially that of self-estimation, and the liability of self-estimates to distortion we have already had occasion to consider".⁵ In the same year Knight and Franzen⁶ reported the results of an experiment in which they had 110 junior students in a university rate 34 interests, "ranging from the essential to the trivial, in order of importance to themselves, to the ideal junior and to the typical junior". They found a higher association between "what the students believe they are and what they would like to be than what they believe they are and what their fellow students believe they are". Similarly, Shen,⁷ commenting on the results of an experiment in which 28 persons were required to rank themselves and one another with respect to eight different traits, remarks that "we tend to over-

⁴ Hollingworth, H.L., Judging Human Character, p.59.

⁵ Ibid, p.185.

⁶ Knight, F.B. and Franzen, R.H., "Pitfalls in rating schemes," Journ. Educ. Psychol., 13, 1922, 204-213.

⁷ Shen, E. "The validity of self-estimate", Journ. Educ. Psychol., 16, 1925, p.105-107.

estimate ourselves in most traits and underestimate ourselves in few". Likewise, Thorndike, as quoted by Symond,⁸ has said, "Adults even as well trained as college seniors and even in the simplest matters of present objective facts, such as are involved in the questions: "How tall are you?" and "What is the circumference of your sister's head?" make gross errors. The errors increase in number and amount when the report requires memory; increase further when the fact is a report of subjective condition; and multiply like bacilli when it involves the general drift of a series of experiences."

⁹ Frank conducted an enquiry concerning the comparative stability of responses to the items of the Bernreuter Personality Inventory. He classified the items, on the basis of their obtained responses, under three heads: (1) positive, i.e., those which were answered "Yes" by 75 per cent. or more of his subjects; (2) negative, i.e. those answered "No" by 75 per cent. or more; and (3) neutral, the remaining items. He noted that the positive items reflected behaviour that is socially approved and the negative items that which is socially disapproved. When he examined the shift in the responses from one administration of the inventory to another, he found that

8 Op cit., p. 144.

9 Frank, B., "Stability of questionnaire response", Journ. Abn. Soc. Psychol., 30, 1936, pp. 320-324.

the, so-called, neutral items "showed not only the highest index of change, but also a significantly high average change per person". In other words, the responses to the "positive" and "negative" items were relatively much more stable. He concludes on his findings, "The question arises as to what extent agreement of response and stability of response is a function of the crystallisation of convention and social practice and what part knowledge and judgment of socially approved practices play in the motivation of questionnaire responses". This conclusion lends support to the suggestion we have made above that the stability of response to the questionnaire items is not the work of the trait purported to measure, but of some unknown disposition that imparts functional similarity to a set of items and thus makes for the similarity of responses to them. It appears in this experiment that the responses to the "Positive" and "Negative" items are influenced by the persistent craving for social approval and repulsion for social disapproval, respectively, and, hence, undergo less change; the responses to the "neutral" items are unaffected by these urges and therefore show the largest measure of change.

Dudye¹⁰ reports a number of investigations

10 Dudye, G.J., "Self-estimate and dependability", Journ. Soc. Psychol., 12, 1940, pp. 39-53.

on the punctuality and dependability of college students. In one of these, he undertook to examine the relation between "self-estimate and dependability". For this purpose, he classified his subjects, on ground of careful observation of objective behaviour, into the dependable and the non-dependable groups. He then gave the total group a questionnaire calling for their attitudes towards dependability in various situations. He found that "the dependable students do not answer the questions in a favourable manner and the undependable in an unfavourable manner, but that both tend to mark the favourable answers, except that the dependable students, in some questions at least, mark the less favourable answers". Here again, we note the divergence between expressed opinion on personal behaviour and objective behaviour.

As is expected, this tendency to fake responses is very clearly shown when it is in the interest of the subject to make flattering scores in order to gain some ulterior purpose. As Bernreuter¹¹ has pointed out, "If you are responsible for selecting individuals for jobs, I think you will very little benefit from personality trait tests as they are now devised. The reason is that most of the tests depend upon complete co-operation of the individual;

¹¹ Bernreuter, R.G., "The present status of Personality Trait Tests", The Education Record, Supplement 13, 21, 1940, pp. 160-171.

and practically every test of which I am aware is in a form that enables an individual to give you inaccurate information, if it is to his benefit to do so". Schott¹² applied the Thurstone Personality Schedule to 130 applicants for professional positions. His results showed "the alleged weakness of the self-rating scale.....and the scores proved unreliable as an index of the degree of emotional adjustment because the subjects obviously were concerned only with making a good impression and accordingly their scores are better measures of sophistication than the degree of emotional stability". Bennett and Gordon¹³ report similar results from the administration of the Bernreuter Inventory to a group of nurses at the time of their selection and subsequently after they had completed a six-month period of probation. They found that the mean scores obtained by the group on the four traits of the Bernreuter had shifted from the first to the second administration and that the shifts were uniformly in the undesirable direction. The authors comment on this discrepancy, "If these students answered without falsification upon the second administration of the test, it is possible to

12 Schott, E.L., "Personality tests in clinical practice", Journ. Abn. Soc. Psychol., 32, 1937, pp. 236-239.

13 Bennett, G.K., and Gordon, H.P., "Personality test scores and success in the field of nursing," Journ. Appl. Psychol., 28, 1944, pp267-278.

conclude either that they felt less secure and stable after surviving a probationary period, or, that at the time of the first examination, they were attempting to answer the questions in a way they thought would be most acceptable to the school to which they were applying." They further observe, "In the case of the students who are tested as a part of the selection process there is an apparent tendency to modify their responses in a favourable direction. This tendency in itself may conceivably be one of the causes of the generally poor validity of paper and pencil personality inventories."

The tendency to fake responses is not in evidence only when the questionnaire is used for selection purposes. In fact, numerous studies have shown that the liability to distortion is revealed even when the subject does not find himself placed at a disadvantage if his scores point in the unfavourable direction. In order to inspire complete confidence regarding freedom from any responsibility for the scores, a number of investigators asked their subjects not to sign their names while answering a personality questionnaire. For example, Knight and Franzen¹⁴ report data from three experiments in each of which the subjects were told specifically not to

14

Knight, F.B., and Franzen, R.H., "Pitfalls in rating schemes, " Journ. Educ. Psychol., 13, 1922, pp. 204-213.

sign their names. But in each case the results "illustrate a naive over-rating of one's self, or 'putting the best foot forward' proclivity, or of underestimating one's fellows". The authors conclude that in these errors of self-estimate "no conscious desire to cheat any one else could have operated greatly". It seems probable, therefore, that the subjects are unwittingly influenced by the tendency to falsify their questionnaire responses, since it is present even when they are given the opportunity of revealing themselves without disclosing their identities. Some investigators report contrary results. For instance, Olson¹⁵ applied the Woodworth Personal Data Sheet to the same groups of subjects once under anonymous condition and then under signature and found that they reported more symptoms when they did not sign their names. But this result does not prove anything beyond this that the anonymous condition was more favourable to the making of frank responses; we can not conclude that the responses made under this condition were truthful in the sense of approximating to the actual attitude and behaviour of the subjects. Spencer¹⁶ also used

15 Olson, W., "The waiver of signature in personal reports", Journ. Appl. Psychol., 20, 1936, pp. 442-450

16 Spencer, D., "The frankness of subjects on personality measures", Journ. Educ. Psychol., 29, 1938, pp. 26-35.

this technique in applying a questionnaire on "personality conflict", though, unlike Olson, he did not use the control condition. He asked his subjects not to sign their names and "convinced them that their papers could not be identified". In addition, he required his subjects to indicate, after they had answered the questionnaire, how they would have been affected had their signature been called for, by checking against: (1) I would have left some of the questions unanswered; (2) I would have answered some of the questions untruthfully; (3) I would have answered truthfully but resentfully; (4) I would have willingly answered truthfully. He found that 21.90 per cent. checked (1), 8.90 per cent. checked (2), 12 per cent. checked (3), and 43.20 per cent. checked (4). The mean "conflict score" of those who confessed to the temptation to answer some questions untruthfully (2) was the highest, while that of those who checked against (4) was the lowest. Spencer concludes, "Therefore it is inferred that had the instrument been taken under signatures, not only would a larger number of the subjects have resented, evaded and falsified some of the items, but such deceptions would have been greatest among those having the greatest amount of conflict. In short, the purpose of the instrument - the measurement of conflict - would have been invalidated". But Spencer's conclusion seems unwarranted to us for

there is no evidence to show how far the opinions expressed by the subjects regarding the truthfulness or untruthfulness of their answers, in the hypothetical situation of being called upon to disclose their identities while responding to the questionnaire, agreed with what they would have actually done. It appears to us that Spencer has committed the logical fallacy of *petitiō principii* by taking for granted what he is required to prove. He seems to argue to the truthfulness of self-ratings made under anonymous condition on the evidence of the subjects' own expressed opinions regarding the likely character of their reactions under signature. But the question remains, what guarantees the truth of these opinions? Moreover, Spencer's results, instead of supporting his contention, may be taken to go counter to it. He discovered that those subjects who obtained highest conflict scores also confessed to the temptation to distort or falsify their responses had they been asked to sign their names. On the other hand, those who made the lowest conflict scores, and these formed the largest group, professed perfect invulnerability to any such temptation. Does it not show that a fairly large percentage were victims of the tendency to make flattering responses even in the anonymous condition? For, it may be suggested that this group which endeavoured to create the impression of an unstinted regard for truthfulness, checked the

questionnaire items in a more favourable manner and, thus, obtained the lowest conflict score. On the other hand, the group which frankly admitted its liability to untruthfulness in the hypothetical condition was not deterred from answering some questions in the unfavourable manner and, consequently, obtained the highest conflict score. We have still another reason to suspect Spencer's conclusion. He has pointed out in defence of the technique that analysis of the responses made by the subjects revealed that they gave "unfavourable" answers relating to many confidential matters in sufficiently large percentage. But he used no control group, one which were asked to sign their names. It is difficult, then, to determine as to what extent the occurrence of unfavourable responses was due to the care taken in impressing upon the subjects that their answers remained unidentified. We feel justified, therefore, in taking the view that the anonymous condition does not ensure truthfulness of the responses, for we have reasons to believe that the distortions are not always brought about wittingly.

Other investigators also support our view that the falsification of questionnaire responses is not necessarily a deliberate contrivance. It may come about without the subject consciously desiring to do so. Thus, Lastell and Bennet¹⁷ make a similar

¹⁷ Lastell, H.R., and Bennet, E., "A comparison of scores on two measures of personality", Journ. Abn. Soc. Psychol., 28, ¹⁹³⁴ pp. 459-461.

observation on their results of the administration of the Bernreuter Personality Inventory to a group of college students. They remark, "A weakness of the questionnaire method that was brought up repeatedly by the students who assisted with the experiment involved the accuracy of report on the items of the questionnaire. This is the inaccuracy or error of judgment that may arise (1) from conscious protection of sensitive personality areas with consequent understatement of painful admissions, (2) from unconscious protection of these sensitive areas with consequent understatement, and (3) from too great awareness of minor weaknesses of personality with consequent overstatement. Numerous students felt that one or more of these factors had decreased the accuracy of their reports even though they were in co-operative sympathy with the experiment". Similarly, Feder and Baer,¹⁸ while searching for the cause of the divergence between questionnaire scores and clinical diagnosis, entered into extensive discussions with their subjects, after the latter had taken the Bernreuter Personality Inventory. They observe, "An interesting point made by many of the subjects was the fact that they themselves were not conscious of the occurrence of certain behaviour on their parts and, therefore, gave, without at all

18 Feder, D.D., and Baer, L.B. "A comparison of test Records and clinical observations of personality adjustment," Journ. Educ. Psychol., 1944, pp. 133-144.

intending to, a picture of their behaviour that often did not square with that which was objectively observed by their associates."

DETERMINANTS OF ERRORS OF SELF-ESTIMATE.

An excursion into the nature of the relation between reliability and validity of questionnaire responses suggested to us that their low validity, despite a high reliability, is due to the errors to which the self-estimates of personality are generally, and often unwittingly, exposed. We also noted that these errors are systematic. That is why they do not affect the consistency of the responses. In other words, they indicate the operation of some underlying disposition, or dispositions, which persistently influence the subjects' responses from an unknown area of the personality. We describe these influences as "errors" because they bring about a distortion of what the subjects' responses would have been had the variable that is intended to measure been alone at work in producing their responses. Our next task is to undertake a quest of these dispositions, determine their character and delimit the precise sphere of their influence. We begin, for this purpose, with an enquiry into the nature of self-estimate which, leading through a consideration of the sources of its inaccuracies, will finally take us on to the determination of the dispositions that underlie them.

Self-estimates are judgments by the individual on his own self. They are judgments about one's own

thoughts, feelings, beliefs, conduct, ideals, aspirations, likes and dislikes, aptitudes, abilities, skills, etc. Like all judgments, they are offered as truths, statements about facts, not as imaginative constructs and autistic creations. They are acts of inference which derive from evidence based on past experience. The individual making a self-estimate searches his mind to determine how he has thought, felt and behaved in some past situations, so that these might give him an indication of how he is going to think, feel or behave in some future situation. As we have already pointed out, the questionnaire does not provide the subject to act in a concrete given situation and then judge, thereafter, how he acted. It suggests verbally to him a hypothetical situation and calls for an estimate of his behaviour in that situation on the ground of his experiences of similar situations. The subject can accomplish this task only if he can succeed in recalling situations from his past life and also what his reactions to them have in general been. For this, among other things, he should possess in the main two capacities: (1) He should have been able to observe his responses when they actually occurred in situations similar to those suggested, and (2) He should be able to recall them - which presupposes his ability to retain their memory traces - in order to make a judgment in their

light at the time of answering the questionnaire.

Observation of one's own behaviour is not as easy a matter as it looks at first, specially, when the behaviour does not involve only its overt motor components, but also the underlying subjective processes like intention, inclination, ideas, attitudes, etc. These latter are the materials one tries chiefly to tackle in introspection and the difficulties of introspection are too well known. These difficulties multiply indefinitely when one's introspection is not limited to the observation of some of the gross segmental aspects of sensations and images which dominated the so-called structural psychology for some time, but seeks to grasp also the emotional and conative patterns of the personality for which Aveling coined the expression: the "orectic factors". It is the orectic factors which are mainly salvaged by the personality inventories - the impulses which overtake a person in a given situation, the motives which incline him in one direction rather than another, the moods which colour his thoughts, the sentiments which tie him to this or that object, the emotions which overpower his wits and paralyse his actions, the feelings which spur him on or deter him from a given course of activity. It requires a special gift to apprehend these elements, the gift of self-observation which is not equally distributed among all persons.

Contemporary writers on psychology of personality have designated the power of self-knowledge as the capacity for "insight". "The term is an extension of the psychiatric usage according to which a mental patient who knows that he (and not everybody else) is suffering from disorientation and aberration, is credited with insight. Also in the domain of normal personality insight means freedom from self-deception."¹ Allport reminds us not to confuse this usage of the term with the meaning given to "insight" by the Gestalt psychologists in connection with their treatment of "learning" or with its common meaning, i.e. "clear comprehension". He² uses another expression, "self-objectification" and considers "insight" as its correlative. By self-objectification Allport means the capacity to view oneself in perspective, with that attitude of detachment and relative freedom from bias which characterises an onlooker who is trying to view disinterestedly the behaviour of other persons, or more properly, a physical or chemical process in the outer world. It is the capacity to draw the line between the self as

1 Allport, G.W., Personality, p. 220.

2 Ibid, pp. 220-225.

the observer and the self as the object of observation; to have a "complete sense of proportion concerning one's own qualities" and to be "able to perceive their incongruities and absurdities in other than their customary frame of reference". A person who can attain such a level of self-objectification does not merely behave but also knows that it is his behaviour with the total setting of impulses, desires, emotions and thoughts under which it actually occurs. He possesses a, relatively, adequate consciousness of himself with all the stirrings and drives of his personality, his inferiorities, jealousies and unsocial tendencies. Murray³ uses the term "objectivity" to indicate the same process. He maintains that a person endowed with "objectivity" is "impartial, detached, disinterested, tolerant, understanding". "He is aware of and responds to the conditions that actually exist. He observes the plain facts, clearly differentiates between what is subjective (within his self) and what is objective (outside his self), is conscious of his inner feelings and inclinations and regards them with an impartial eye. He observes behaviour accurately and makes reliable inferences as to the probable inner states of other people. He has true insight and is able to interpret the motives of his acquaintances reasonably well." It appears

that Murray extends the meaning of "insight" to cover also the capacity for estimating the abilities and traits of other persons - to make accurate judgments about others as about oneself.

That insight plays an important part in determining the accuracy of self-estimate has been stressed many a time by psychologists. Thus Symond⁴ gives three reasons why questionnaires are more reliable for adults than for children, the first one being "their superior ability to observe and introspect". Similarly, Allport⁵ pointing out the defects of the questionnaire method, remarks, "Another serious limitation is the fact that virtually all paper and pencil questionnaires may be falsified by the subject if he chooses to do so, or if he is deficient in intelligence or insight." Likewise, Cattell⁶ maintains that "the observations by questionnaire live in a world of their own conditioned by systematic errors". One of the sources of errors, he suggests, is "lack of self-knowledge on the part of the subjects - i.e. lack of correct appreciation of their own behaviour".

It is difficult to determine what is the precise character of insight. At first sight, it

4 Symond⁵, P., Diagnosing Personality and Conduct, p.158

5 Op. cit., p. 381.

6 Cattell, R.B., Description and Measurement of Personality, pp.342-343.

appears to partake of the nature of a cognitive ability since it seems to resemble what Spearman⁷ enunciates as one of the three "ultimate qualitative laws which prescribe how new cognition is ever possible". As he says, "Of these laws the first may be formulated by saying that a person has more or less power to observe what goes on in his mind. He not only feels but also knows that he feels; he not only strives but knows that he strives; he not only knows but knows that he knows." But Spearman is not very clear about what he really means by this, so-called, "power of self-comprehension". We can not decide whether he meant by it only the capacity of self-consciousness, the knowledge of oneself as the knowing, thinking, feeling subject, or also the power of self-knowledge - the ability to comprehend the contents of one's experience at a particular moment of consciousness., In the latter case, Spearman's very classification of the three laws of neogenesis breaks down. As Wyatt⁸ points out, the law of comprehension of experience can not have a separate basis from the second law, namely, that concerning the "education of relation", for comprehension of experience implies the cognizing of relations between

⁷ Spearman, C., *Abilities of Man*, p.164.

⁸ Wyatt, H.G., *Psychology of Intelligence and Will*, pp. 81-85.

the items of experience. Wyatt has, further, shown a gross inconsistency between Spearman's theoretical formulation of the laws of neogenesis and his statistical findings. These laws embody the functions of "general intelligence" or "g" which Spearman statistically proves to be the irreducible unitary factor saturating all cognitive processes. But how can he talk of three qualitative laws of neogenesis and also insist upon the qualitative sameness or uniqueness of "g"? As Wyatt observes, "The statistics point to a single factor, the analysis to three". In view of this element of vagueness, therefore, which characterises Spearman's formulation of the laws of neogenesis, we do not feel justified in identifying the capacity of insight with his "power of self-comprehension" and determining its nature in the light of the psychological character assigned by him to the latter.

We may possibly view insight as akin to Wedeck's⁹ "psychological bairity", "an ability to judge correctly the feelings, moods, motivations of individuals". We can not get at these directly; in order to judge their "expression", "it is necessary to understand personality; and this understanding, according to McDougall, Spearman, Bain and others, is

⁹ Wedeck, J., "The relationship between personality and psychological ability", Br. Journ. Psychol., 37, 1947.

reached in terms of the judge's experiences of himself. To assess correctly the personalities of a wide variety of people, the judge must have attained a high degree of complexity, as well as insight into his own motives; he would need to have a high 'psychological ability'." It follows that, since to judge correctly about others one should have insight into his own experiences, "psychological ability" is a function of insight or at least the two are very closely connected. In order to determine whether "psychological ability" involves simply "'general intelligence' or also a special ability or factor", Wedeck devised eight tests involving identification of tendencies, emotions and traits portrayed by pictorial representations or character sketches, discrimination between true and false utterances and solution of problematic social situations. He intercorrelated the scores in these tests along with those in three non-verbal and four verbal tests of "g" and subjected the correlation coefficients to a method of factor-analysis earlier suggested by Spearman in his *Abilities of Man*. He discovered three factors: (1) "g", which saturated all tests, (2) "v" or verbal factor which loaded all except the three non-verbal tests, and (3) "ψ" which loaded two of the verbal tests and six of the eight proposed tests of "psychological ability". Four of the

latter, all of which were pictorial representations, were more saturated with " Ψ " than with "g" or "v". Wedeck concludes that these "must be regarded as providing almost as good a measure of " Ψ " as the non-verbal tests provide a measure of 'g'." He tries to explain the common loadings of "v" and " Ψ " in two of the verbal tests and all of the tests of psychological ability by referring to the "emotive, orrectic, affective-conative, or non-symbolic" function of language. He maintains that his subjects' scores in the " Ψ " test do not merely indicate their amounts of the psychological ability but also their degrees of "affectivity or emotivity".

Wedeck's results do not seem to be very satisfactory in view of the fact that the " Ψ " factor has high loadings in only three out of the eight tests of psychological ability and 0 loadings in two of them, which he explains as due to the "use of an admittedly complicated rating scheme". The three highly " Ψ " saturated tests are very similar in content, being pictorial representations of some transient moods or feelings or more enduring tendencies. That being so, their high saturation with " Ψ " may be alternatively explained as due to "overlapping specifics", rather than any "special", or better, "group" factor (Wedeck refrains from the use of this expression, which is, nonetheless, implied in the discussion of his results)

of "psychological ability". His data, then, fail to establish the existence of "psychological ability" functioning in the correct judgments "regarding the feelings, moods, motivation of individuals" and involving, beside the factor of "general intelligence", a special factor, called " Ψ " by him. The only result which Wedeck succeeds in establishing is that the hypothetical ability involved in judging attitudes and motives of individuals must consist, among other possible components, of the function of general intelligence, since all his proposed tests of "psychological ability" are uniformly saturated with "g".

In a much earlier study, Vernon¹⁰ has taken up a more comprehensive and systematic investigation of the characteristics of a good judge of oneself and of others. He noted some "definite" indications in the work of other investigators, which he used in organising his own research. He says, "We know that he" (rater of other people) "must be well acquainted with the ratee, but not too intimate with them.....; and we know that the more intelligent are better able to rate intelligence, etc.; i.e., that there is some relation between the possession of a trait and the ability to judge it. Goodness of self-estimation,

10 Vernon, P.E., "Some characteristics of the good judges of personality", Journ. Soc. Psychol., 4, 1933, pp. 42-58.

we also know from Allport's, Hollingworth's and Jackson's work, correlates with raters' 'Intelligence', 'insight', 'sense of humour', and negatively with 'conceit'. In his own investigation, Vernon, used a very wide variety of situations calling for the assessment of qualities and traits of oneself as well as of others. To examine the correctness of these assessments, he employed both "subjective", - "conformity to group opinion" - and "objective" criteria, though some of his "objective" criteria do not really seem such to the writer as they involved scores on the "Study of Values", "paper-and-pencil test of Extraversion-Introversion", "musical questionnaire," etc., which, determined by the subject's opinion on himself, were no less subjective than the opinion of others about him. Perhaps, when Vernon conducted his investigation, the subjectivity of the questionnaire method was not pushed into as strong relief as it is today. He also tried to determine the characteristics of his judges in the three areas, namely, intellectual, social, and artistic, whose bearings on the goodness of judgments on personality were indicated in previous researches.

Vernon's results do not indicate any general factor of "intuitiveness". "The remarkable lack of agreement between different tests of judging personality suggests that, in an ordinary sample of the

population, we are not justified in assuming the existence of a general trait of 'intuitive ability'." Further, "A judge may successfully judge A's 'intelligence', but fail on B's, or he may rate A's or B's 'sociality' correctly, but give very poor ratings on their 'efficiency'. His judgments depend on his whole past experience with A and B, or with other people who were like or unlike them in respect to intellectual, social and efficient activities, also on the total situation at the moment of judging." It will be noted that this conclusion is not very pertinent so far as judgment on self is involved; the inherent "intimacy" or "closeness" of one's own personality contrasts with the intrinsic "foreignness" and "distance" of other personalities which raise much too high the premium on the "specificity" of the contact and "context of experience" in the correct assessment of others. Vernon established some positive results also which have a more direct bearing on our problem. He found uniform association between rating and test of intelligence, rating on insight, and rating on the sense of humour, on the one hand, and goodness of judgment on self, on the other. He observes, "The good self-raters are characterised by sense of humor.....Good self-raters moreover possess superior abstract intelligence. They are neither superior nor inferior in general artistic level".

Another¹¹ investigation has demonstrated a close relation between lack of insight and liability to projection. We postpone its consideration to a detailed examination in the sequel in connection with our own measure of projection.

We note to our disappointment that the above discussions do not take us any (head)way so far as the determination of the nature of "insight" is concerned. The question whether insight is an intellectual ability or an intuitive function, an innate endowment of the organism or an acquired capacity, the unique possession of some individuals or a common "continuum" of personality admitting of individual differences, remains unanswered. Nevertheless, we have been able to secure some definite indications concerning the more common correlates of insight. Possession of insight goes together with "superior abstract intelligence" and "sense of humour", and is negatively associated with liability to projection. Thus, Allport¹² observes, "Psychologists know that there are certain correlates of insight, qualities that people of good insight possess. For example, those who are aware of their own objectionable qualities are much less likely to attribute them to other people, that is they are less given to projection than are those

11 Sears, R.R., "Study of projection", Journ. Soc. Psychol. 1/936, 7. pp. 151-163.

12 Op. Cit. p. 222.

who lack insight. Also, people of good insight are known to be more intelligent than the average." "But the most striking correlate of insight is the sense of humor." As a measure of insight, Allport¹³ commends the relation between rating by self and rating by others, a criterion which has been frequently employed but because of its "subjective" taint has seldom produced reliable results. As we will be noted below, our own use of this method has also proved it to be equally inconsequential.

We have indicated above that besides one's limited capacity for "self-observation", which has been generally described as "lack of insight", there may be the defects of memory, its unfaithfulness, which have equally adverse effects on the reliability of his self-estimates. The subject has to recall his customary conduct or attitude in regard to the situations portrayed by the questionnaire items. But he may or not be successful at that. He may have omitted some important aspects of his behaviour, because his memory failed him, and altered or modified others. Bartlett,¹⁴ in his pioneer work on remembering, has described the various forms of unwitting distortions to which memory is subject, like

¹³ Ibid. p. 221.

¹⁴ Bartlett, F.C., Remembering.

"omission", "substitution", "rationalization", "importation", etc., which are brought about under the influence of "affective attitudes", "preformed tendencies", "individual and common interests and feelings". These elements of distortion involve memory as a rule, as Bartlett¹⁵ remarks, "Even when material is arranged in a short series, is small in bulk, and simple in objective structure, and when is so given that an observer knows that he will be asked to describe it later, remembering is unwittingly affected by unwitting transformations: accurate recall is an exception and not the rule". Bartlett maintains that memory is a process of "active construction" which does not merely bring about a transformation of the materials contributed from the original experiences, by altering, transposing, and rebuilding them, but also by "inventing" and "importing new material from a different setting". For the purposes of recall, present perceptions are not merely fitted into already formed apperception systems, but the "process of fitting is an active process, depending directly upon the preformed tendencies and bias which the subject brings to his task."¹⁶ The influence of the emotional patterns on memory, which has been made for so much in recent

15 Op. cit. p.61.

16 Ibid, p.85.

works on memory, specially after the lead given by Freudian Psychology, has received its recognition by Bartlett also. He observes, "Material which is a direct or an indirect stimulus to pre-formed interests is sure to reappear. Probably the affective tone accompanying the arousal of such interests is an important factor here. The affect is certainly not always pleasing. On the whole the results indicate, that, if the interesting material is pleasing, the change is in the direction of elaboration and development; if the affect is displeasing, distortions are most likely to occur."¹⁷ But, above all, Bartlett's chief contribution lay in the strong relief into which his researches have pushed the social influences on remembering that prepared the way for the shift of emphasis in social psychology from the innate factors within the organism, which were much too inordinately stressed by McDougall, to the environmental factors operating upon the individual as the member of a group. The interpretation of the experimental data which Bartlett has described in the first part of his book markedly points to the conclusion that "both the manner and matter of recall are often predominantly determined by social influences. In perceiving, in imaging, in remembering proper, and in constructive work, the passing fashion of the group, the social

¹⁷ Ibid. p.90.

catchword, the prevailing approved general interest, the persistent social customs and institutions set the stage and direct the action."¹⁸ Further, "What is initially outstanding and what is subsequently remembered are, at every age, in every group, and with nearly every variety of topic, largely the outcome of tendencies, interests and facts that have had some value stamped upon them by society."¹⁹ These social determinants are "liable to lead to an inventive and to a constructive type of remembering which may disturb the accuracy of recall."²⁰

Bartlett's researches go a long way to stress the dynamic character of all remembering, but do not provide any usable conceptual framework which could be applied to the interpretation of the wide variety of transformations that memory of necessity undergoes. His work is more of the factual character and though he seeks to formulate a theory of remembering, the latter merely reiterates the organisational character of the memory processes. Moreover, his researches dealt, directly, with the recall of objectively observed materials, and only indirectly apply to the recall of introspective contents, i.e., the recall, not of the impressions received from objects or

18. Op. cit., p. 244.

19 Ibid, p. 253.

20 Ibid, p. 264

situations, but also of the feelings, attitudes, ideas, impulses evoked within the subject by those situations. These latter are more directly tackled by Freudian Psychology, which on this account merits a more special mention.

Freud noted, in the course of his earlier clinical work, the intimate relation between psychopathological formations and the disturbances of the memory function which subsequently resulted in his formulation of the concept of repression as the "corner stone" of psychoanalysis. Repression has been described by Freud as a process of "active" forgetting brought about by a situation of conflict between antagonistic tendencies within the organism. The conflict arises, most commonly, from the incompatibility between the social standards of morality, religion and culture, which every individual builds up in the course of his development, and the pressing internal demand for the immediate pleasureable gratification of crude, primitive, asocial impulses which, like "the sunshine and the climate", form the common heritage of mankind. Any situation of life may provide the occasion for this conflict, but, according to the more orthodox psychoanalytical tenets, the strongest conflicts have arisen in the infancy of an individual and these provide the schema for all later conflicts. Biologically, the most

appropriate way of resolving a similar conflict due to outer stimuli making antagonistic demands upon the individual, is the so-called abient or avoiding reaction to one of the contending stimuli. But when the scene of the conflict is one's own mental life, the avoidance amounts to a turning of consciousness away from the conflicting mental content, as one turns his back on a disgusting spectacle. This turning of consciousness away from one's own tendency, desire, thought, emotion, etc., has been called repression. It is the process of withholding for a certain mental content its access to consciousness. Since the repressed contents are intrinsically opposed to the cultural standards, their emergence into consciousness persistently exposes the individual to the danger of conflict. Hence, the act of repression is not a temporary makeshift, but a permanent measure which precludes the repressed content ever from the possibility of future consciousness. The result is that the memory of that content together with its associated experiences is lost and the possibility of its recall is nullified. But why, one may ask, is the impulse, attitude, desire, or thought precluded from the possibility of recall when its mere emergence in consciousness would not necessarily drive a person to a socially undesirable course of conduct? All conscious ideas or desires

are not translated into action; many may only be entertained and inhibited. The answer given by Freud is that the emergence of the undesirable idea causes a sense of "shame, loathing and disgust" to the individual and would accordingly be painful to him. To avoid the pain, the idea is permanently withdrawn.

Further elucidation of the process of conflict, the occurrence of shame and disgust, and the agency of repression, led Freud to consider the structure of the psychic personality. He conceived of a tripartite division within the psyche which he called the Id, Ego and the Super Ego.²¹ & ²² The Id is the reservoir of the primitive, anti-social or asocial, instinctual inherited drives and is governed exclusively by the need for immediate pleasureable gratification. The Ego is the system of controlling, organising, and adaptive functions of the personality. It is governed by reason and is kept, through the perceptual system, into close touch with reality. Consciousness is an attribute of the Ego functions. The Super Ego is the precipitate of the social authorities that have loomed largely during the infancy of the individual and comprises chiefly of inhibiting influences operating against the freedom

²¹ Freud, S., Ego and the Id.

²² Freud, S., New Introductory Lectures on Psychoanalysis: The Anatomy of the Mental Personality, pp. 78-106.

of the Ego. Its principal functions, accordingly, are to observe and punish the Ego. It demands of the latter an unhesitating allegiance to an obsolete and irrational code of morality and culture which was imposed upon the individual as a child and was subsequently incorporated within his psyche as a part of the Super Ego system. The Super Ego's punishments are meted out to the Ego not only for the latter's actual misdeeds. To the Super Ego, an intention is tantamount to action, and its penal exacerbations ensue even when the Ego allows an "objectionable" idea to cross consciousness. These are experienced by the Ego as excruciating feelings of shame, loathing and disgust - the feeling of guilt. The Ego's resort to repression is to avoid this suffering to itself. It, consequently, permanently guards against the emergence of its "undesirable" inclinations, attitudes, longings, impulses and their associated memories. Thus, the individual's inability to recall those aspects of his past behaviour that are socially undesirable and morally or ethically despicable, is explained by Psychoanalysis to be the result of repression.

But repression is not the only influence that wrecks the memory process. There are other functions which operate not in the deletion of the contents of past experience, but in their alteration and dis-

figurement. These have been designated as the defence mechanisms of the Ego. As we have seen, the Ego resorts to repression to defend itself against its exposure to the criticism of the Super Ego. It can secure the same result by hoodwinking the Super Ego, i.e., by disguising and disfiguring the undesirable impulses past recognition. The most common way of doing this is the "dream work" with its use of symbolic expression and the various mechanisms which work to transform the "latent unpalatable content" into the "manifest" surface formation of the dream, those of dramatization, condensation, displacement and secondary elaboration.²³ Another example of the detour adopted by the Ego to avert the offence of the Super Ego is found in the so-called psychopathologies of every day life,²⁴ the various parapraxes like slips of pen, slips of tongue, etc. Dream-work and the parapraxes occur on the normal plane. But other means of defence adopted by the Ego handicap the individual in his day to day adaptations of life. These are the so-called symptoms of abnormality - the psychoneuroses and the psychoses.

The various mechanisms of defence, which operate both at the normal as well as the abnormal levels of behaviour, have not been very clearly classified by the Freudians and sometimes it is

²³ Freud, S., Interpretation of Dreams.

²⁴ Freud, S., Psychopathologies of Everyday Life.

difficult to determine their precise implications. Some of the principal ones are:- Displacement, condensation, undoing, isolation, reaction-formation, projection, rationalisation and identification. A consideration of these will show that they all operate in the same general direction, namely, the effacement or disfigurement of some original undesirable mental contents or their replacement by another which is more satisfactory and "acceptable". Thus "displacement"²⁵ functions in "transvaluation" of mental contents. An element that was originally prepotent but "unacceptable" "surrenders to another", that was trivial and insignificant in the economy of the individual's mental life, its "whole volume of cathexis". The latter attains an urgency and importance which originally belonged to the former, and is pushed into consciousness as such. Similarly, condensation,²⁶ which is one of the very common methods of distortion and is encountered more frequently in dream-analysis, operates in presenting to consciousness an image which shares the characteristics of a host of distinct and disparate ideas and perceptions fused on grounds of very trivial similarities. Condensation is the principal mechanism behind much of the "inventiveness" of recall. Likewise, reaction-formation²⁷ functions in

25 Freud, S., Collected Papers, Vol. II, p.33.

26 Freud, S., Interpretation of Dreams, p.269.

27 Freud, S., Collected Papers, Vol. II, p.48.

the reversal of an impulse, attitude or idea into its opposite, as, for instance, when the attitude of repulsion, hatred or egoism may show itself in exaggerated attraction, love, or altruism. Reaction-formation is a process of self-deception and its purpose is to hide from a person his own unacceptable tendencies. Undoing and isolation²⁸ also serve similar functions. The first one consists in the tendency to treat an event of one's own life as though it had never happened. In "undoing" the memory of an unpleasant experience, instead of being transformed, or substituted, is altogether done away with.

"Isolation" deprives an unpleasant memory of its "affective cathexis" and robs it of its associative connections. For instance, the obsessive ceremonials which the compulsive neurotic is called upon to repeat appear to him, because of the process of isolation, meaningless sequences of behaviour, in spite of their compelling character. In projection,²⁹ there occurs a replacement of internal perceptions or feelings by external perceptions. "An internal perception is suppressed, and instead its content after undergoing a certain degree of distortion, enters consciousness in the form of an external perception". The external world is invested with one's own

28 Freud, S., Inhibitions, Symptoms and Anxiety, pp. 73-76.

29 Freud, S., Collected Papers, Vol. III p.452.

undesirable attitudes and tendencies, because their recognition in oneself causes the feelings of guilt and shame. Rationalization³⁰ is the process of attributing an acceptable motive to a behaviour whose real motive is concealed from consciousness. It operates as a "screen" over the undesirable tendencies of a person and thus facilitates their inaccessibility to consciousness. Unlike the other mechanisms, identification is not only a contrivance for defence. According to Freud,³¹ it provides the "motif" for the formation of the Super Ego. Freud describes the Super Ego as "the precipitate of abandoned cathexis". He thinks that the passage into the "latency period" is marked by the renunciation of "object-cathexis" - the parental love-object, which is followed by the "internalisation" of the latter within the psyche. This process, he calls, "secondary identification" as distinguished from the earlier primary one which prompts the child to imitate the parent of the same sex in order to "step into his shoes". As a result of "identification", and "internalisation" or "introjection", the Super Ego occupies in the psychic system the position that was previously vested in the parental authority. Identification also explains why in the course of

³⁰ Freud, S., Collected Papers, Vol. III, p. 330.

³¹ Freud, S., Ego and the Id., pp. 34-53.

development, the diverse social influences, effects of training, education, etc., which are at first encountered in relation to the outer situations, are gradually entrenched within the personality and determine the habitual conformity of the individual's behaviour to the cultural standards of his group.

The consideration of the Ego's relation to the Super Ego and of the mechanisms of defence utilised by the former, shows clearly that the defence mechanisms are centred, one and all, in the need to maintain the social and cultural standards which no longer operate upon the adult individual, generally speaking, as outer demands, but as endopsychic forces that beacon to him what is "acceptable" and what is "unacceptable" and drive him to seek the former and avoid the latter. In other words, the need for social conformity appears to be fundamental about the defence mechanisms; or, their raison d'etre is the fulfilment of the urge, engendered in the course of development, to avoid infringement of the social, moral, ethical and cultural values organised within the psychic system.

The need for "social conformity" as a pre-potent force in personality organisation has been generally recognised by psychologists. Thus Angyal³²

³² Angyal, A., Foundations for a science of Personality, Chap. VI, "The trend toward homonymy," pp. 167-207.

points out "The integration of the individual into the social group, the assimilation of its culture, of its written and unwritten codes are just as essential for the personality development and personality organisation as any of the physiological function". Angyal calls this tendency which leads the individual to transcend his "autonomous" demands - that drive him to achieve "domination of the surroundings" - and seek union with larger "super-individual units", as the "trend toward homonomy". "The trend toward homonomy - the tendency to conform to, unite with, participate, and fit into super-individual wholes - is a powerful motivating force in behaviour". The homonomous trend does not drive the individual merely to adjust himself to the cultural patterns of the group as "outside " factors, it also brings about the assimilation and integration of the cultural standards within the organism. "They become internal factors, a part of the person. The person thus acquires an individual culture, his personal standards and definitions of doing things in the proper and improper ways." This organisation of the cultural patterns within the individual, Angyal thinks, "roughly corresponds to what in psycho-analysis is called the 'super-ego'". It seems to the writer to correspond as well to what McDougall³³ calls the

33 McDougall, W., *Energies of Men*, pp. 232-235.

"sentiment of self-regard" and Allport³⁴ designates as "the desire for self-esteem". Similarly, Murray³⁵ refers to a group of needs in the individual which are directed toward securing "social approval", recognition and status, and avoiding humiliating circumstances, loss of esteem and prestige. He, thus, speaks of the need to "excite praise and commendation. To demand respect. To boast and exhibit one's accomplishment. To seek distinction, social prestige, honours or high office". He sets on the other side the complementary "need" for "inviolacy" - to avoid situations of humiliation, failure, shame and rebuke, the lowering of "self-respect", the desire to preserve one's "good name", "to be immune from criticism", to conceal humiliating facts and disfigurement.

Turning to our task, we have noted Bartlett's emphasis upon the influence of the cultural patterns on the "manner and matter of recall". We have also seen how according to psycho-analysis the need to conform to the social standards engenders the various mechanisms of defence that disturb, very conspicuously, the memory functions, if the "overt" compliance to these standards is not easily accessible to the individual. And we have marked likewise that the

34. Op.. cit. pp. 169-173.

35. Op. cit., p. 81.

"need for social conformity", or "the trend toward homonymy", has received common acceptance from psychologists, in one form or another. We look now for its bearing on our own problem - the reliability of self-estimates in regard to personality questionnaires. It seems likely to us that those persons who tend to make flattering responses to the personality questionnaires and thus portray a more agreeable picture of themselves, not only for the experimenter but also for their own view, are influenced by the need for social conformity which due to the peculiarities of their development has adopted for its fulfillment a rather unusual channel of expression. Instead of prodding them on to seek the more tangible ways of attack upon "reality" and achieve success in overt behaviour, it has suggested to them a more facile method of attaining satisfaction by resorting to the world of imagination and phantasy, a method that retains its attractiveness for them in virtue of its proved value during their infancy. It works in two ways. Firstly, by its great potentiality for diminishing the power of "reality testing", it facilitates the shutting out from perception and memory of those attitudes and tendencies which offend cultural and social standards. It, thus, preserves the individual's personal integrity and self-esteem, despite his occasional lapses in the socially

unacceptable directions. We are reminded of Nietzsche's very pregnant aphorism: "My memory says 'I have done it'. My pride says 'I could not have done it', and remains inexorable. Eventually my memory yields." But mere denial or repudiation by the individual of certain trends and activities does not always contribute to his sense of personal value, which, as we noted above, is inextricably woven with social worth and status. We find, therefore, the second way open to him, namely, substitution of the repressed blemishes and falterings by fantastic representations of his abilities and prowess which attain such a strength and vividness as to claim the factual value possessed by images of real happenings. We call this process imaginative compensation. We use the term "compensation" in the Adlerian sense, which always signifies the restoration of a state of inferiority, defect or insufficiency by a condition of superiority, power and self-sufficiency. Since we presume a similar process at work in the "falsification" of the questionnaire responses, we choose to call it by the same name. We anticipate a possible objection, namely, the "falsification" may not necessarily work in the favourable direction. Some persons give evidence of a marked tendency to put themselves on the debit side, to under-estimate their abilities and magnify their disabilities. But we

find this direction of the "reversal" to be very rare, as compared to the inverse tendency to screen one's "unacceptable" desires, inclinations, thoughts and actions and paint oneself in the most attractive colours. Every investigation, within the writer's knowledge, has shown a preponderance of the latter tendency, whatever the character and composition of the group studied. Thus Hollingworth³⁵ remarks, — which can be supported by scores of other studies, some of which we have already quoted in our earlier discussions concerning the tendency to "fake" responses, "traits which we should on the whole characterize as 'admirable' traits are over-estimated; traits ordinarily classed as 'reprehensible' are underestimated." Our own results also consistently point in the same direction. Our reason for calling this process "imaginative" is quite evident. As we have noted, the person who "fakes" questionnaire responses does not seek compensation in the world of reality, for otherwise he would not have been motivated to "falsify" the responses, that is, to credit himself with qualities and virtues the opposite of which are true of him as a matter of fact, unless he was doing so wittingly and deliberately which is not, generally, the case when a subject's co-operation has been ensured. It is his access to the avenues of fan-

35 Hollingworth, H.L., Judging Human Character, p.52.

tastic gratification, which brings about in the individual the suspension of the function of reality-testing and makes it possible for such make-believes to flourish.

In conclusion, our enquiry has led us to think of two main determinants of the inaccuracy of self-estimates. (1) Lack of insight or deficiency of the power of introspection or self-observation. A person may not possess insight and, therefore, his recollections in the questionnaire situation may lack definiteness, clarity and detail, and, thus, become readily amenable to distortion. (2) Need for social conformity. A person may unwittingly suppress certain facts about himself which are inconsistent with the ideals of conduct and propriety that he applauds, and, therefore, their recognition may expose him to a sense of social insecurity by "frustrating the trend toward homonomy", the trend to furthering "supra-individual" ends and purposes. Or, his memory, more faithful to his need for preservation of personal integrity than to the claims of reality, may substitute images of thoughts and deeds which conform to the standards of efficiency and rectitude consciously professed by him. The first process we have named "denial" or "repudiation", though we could as well designate it as repression, as has ordinarily

been done. We prefer the first term because the suppression of "unacceptable facts" in answering questionnaires may be both witting or unwitting, but repression is always treated as an unconscious process, while "repudiation" may be conscious as well. The second process we have called "compensation" (imaginative), for reasons stated above. Further, we think that the two processes require to be brought out more specially than merely subsumed under the need for social conformity as we have done in the above classification. They are more important for our purpose than the need itself, since they determine the manner of its expression in which we are mainly interested. Had the need for social conformity of necessity adopted these channels of expression, the statement of the need would imply them also. But the need may also be fulfilled by resorting to overt activities which are directed to achievement of success in the real world. Subjects for whom this mode of expression is customary, may not show any considerable influence of either "repudiation" or "compensation", while answering a questionnaire. It is only those subjects who have no or little access to the "explicit", motor avenues of satisfaction and resort to the "implicit" imaginative channels provided in phantasy life, that might utilize the mechanisms of "compensation" and "repudiation" while reacting in

the questionnaire situation. Also, these two processes though stemming from the same source, may not necessarily be combined, so that a person's reactions to self-inventories may be affected more prominently by the one than the other. Hence, we set them as two separate variables, a treatment which is subject to confirmation by our experimental findings. Thus, we may lay down, finally, three variables to account for the falsification of questionnaire responses. (1) Insight. (2) Reputation. (3) Compensation (Imaginative).

In the second part of our investigation we deal with the methods we have adopted for measuring the variables we have theoretically postulated and determining how far they are to be taken on empirical grounds as systematic factors in the personality which influence the questionnaire responses of some persons to the extent of affecting their accuracy. As we will see, to this end we have assembled on logical grounds a set of measures of each variable and subjected their results to the test of association.

CHAPTER 3.

Aim and Method.

Our theoretical enquiry led us to postulate three fundamental factors which may be presumed to affect the reliability of self-estimates, specially, in the questionnaire situation. We decided to call them: (1) Insight; (2) Tendency to Compensation; (3) Tendency to Repudiation. Our next task was to determine how far our theoretical assumptions were supported by empirical observations. In other words, how far we had tangible evidence of an objective character to carry us to the inference of corresponding real tendencies or dispositions of the organism which manifest themselves in a regular, unified and, hence, predictable manner. The term "real" is used here not in the metaphysical or the crude phenomenal sense, but as equivalent to "fact" as used in science. A "fact" in science is an ordered system of originally discrete and disconnected observations of natural events. At a higher level of scientific generalisation, "fact" means the very principle of generalisation and the expression "scientific facts" stands for conceptual unities or uniformities applicable to certain classes of experiential data; electrons and ions are facts in this sense; they are realities which are never to be delivered in sense perception.

Accordingly, when one talks of "real" dispositions in the personality, he means unities or patterns which set order, uniformity and stability in the otherwise dissimilar, ever-changing, transient responses of the organism. Such unities are not, obviously, to be encountered at the level of overt behaviour. They are only to be inferred from the sequences of behaviour manifestations. The basis of this influence is, as Cattell¹ suggests, "covariation" of "operationally remote segments of behaviour". "The unity of a set of parts is established by their moving, i.e., appearing, changing, disappearing together, by their exercising an effect together, and by an influence on one being an influence on all." The quantitative representative of this "going-togetherness" is the statistical concept of correlation, which, in its turn, is a mathematical statement of the logical method of "concomitant variation". Hence, Cattell² adds that "a unity can be detected from the fact that the constituent behaviour elements in a trait covary. That is to say, if we take a number of different individuals and measure them with respect to the elements A, C, K and T, the person who has a lot of A will also have a lot of C, K, and T, while the person who is low in K will also be low in

¹ Cattell, R.B., Description and Measurement of Personality, p. 71.

² Ibid, p. 72.

A, C, T. In other words, scores in A will correlate highly with C, K, and T scores." But it is possible for A, C, K and T to consist of very similar elements of behaviour. If this be the case, then evidence of covariation between them would not indicate a real "unity" of behaviour, or, what Allport calls, "a higher level generalisation", or Stagner calls "a high order habit". In order to furnish sufficient evidence for such inference, the elements should in themselves be highly dissimilar. As Cattell³ remarks, "Our practical standpoint has been in the first place that a unity exists when parts appear together, change together, and mutually influence one another, when viewed in different contexts and from different angles." This again reminds us of the two forms of the method of concomitant variation, namely, (1) which presents the variable each time in the same set of accompanying circumstances, and (2) which involves instances of the variable under diverse or changing circumstances. The inconclusiveness of the evidence afforded by the first form is well known to any student of logic.

In order to apply the test of covariation to the factors postulated by us, we were required to discover and devise several sets of situations which did not have the same contents and which called for

³ Ibid, p. 93.

diverse operations from the subjects. In other words, we had to devise sets of measures of each variable, which had different component items and also involved dissimilar types of responses. The assumption was that if the results of the variant measures presented an adequate evidence of inter-relationship, then we could infer that the trait or variable underlying them was a persistent, stable and unified element of the personality.

To achieve our aim we formulated a number of paper and pencil tests for each variable. The contents of the tests were different, so were the responses called for by them, except that majority of them involved self-ratings by the subjects. At first our procedure may appear highly erroneous, since the main point we have tried to make in our earlier discussion is the inherent subjectivity and consequent unreliability of the self-rating technique, the personality questionnaire serving as its most conspicuous example. How could we, then, be justified in using the same technique in examining our hypothesis concerning the factors underlying the unreliability of self-estimates? Our answer is that the outer form of the technique should not beguile us into mistaking its real nature. The fact that two measuring devices are apparently similar does not testify to their real identity, for the nature of a scale is determined by the "evidential value" one

ascribes to the resulting scores".⁴ If the responses of a self-inventory are interpreted as statements about the real conditions of the subjects, their real attitudes, thoughts, inclinations and behaviour, that is, accepted at their face value, the measurement is tainted with subjectivity and liable to extreme errors. But the responses can also be interpreted as units of overt behaviour manifested in standard objective reactions - like underlining or encircling - to the elements of a given defined situation. In this case the same scale is converted into a measure of objective behaviour very similar to laboratory experiments. Our method came under the second category. We assembled in a test materials of a certain defined character, for example, a number of desirable and undesirable trait-names, and asked our subjects to check themselves against each (Appendix VI). Instead of interpreting the checkings as indications of the presence or absence of the traits concerned in a certain subject, we treated them as indicative of the subject's habit of assigning more or less of the undesirable traits to himself. Thus interpreted, our tests are similar to the measure of the strength or weakness in a rat, for instance, of the habit of avoiding an obnoxious stimulus, indicated by the number of times the

⁴ Eysenck, H.J., Dimensions of Personality, p. 61.

stimulus is avoided in an experimental set-up. It may be remarked here that the analogy does not hold in strictness, for the undesirability of a trait is a matter of subjective evaluation which may vary with individuals. Therefore, when for scoring we count the number of checkings on undesirable traits, the units used for this purpose are not homogenous, or of the same kind, as the electric shock, for example, which the rat encounters each time it is placed in the experimental situation. Consequently, it may be urged, our measures are not as objective as claimed. But we will see in the sequel that the evaluation of our items as desirable or undesirable, for instance, is so highly conventionalised as to leave no room for disagreement among our subjects with regard to the respective characterisation of the items as such. Our units of measurement are not open, therefore, to the charges of heterogeneity or lack of objectivity, which pre-eminently fit the personality inventories. We feel justified, thus, in claiming for our method the maximum degree of objectivity that can be achieved for any method operating within the confines of a paper-and-pencil set-up. There was only one exception to our general procedure, namely, the rating method which we used in determining the self-other ratio as a measure of insight (Appendix IV).

Our measuring devices are not only objective, they possess another peculiarity. They are

"disguised" measurements which are so devised that the subject can not get at the purpose for which they are used by the experimenter. Such disguised measurements are specially adapted to obviate the defects of self-ratings. As Symond⁵ observes, "It is probable that disguised questionnaires are more valid than those which are straightforward in their approach. The straightforward attack partakes too much of the nature of a test and permits the pupil to control his responses to fit his purpose. The disguised questionnaire, in which the pupil is told he is doing one thing, but in which the items are so selected that the result yields a measure of something else, is the ideal situation for measuring conduct."⁵ We have already noted, self-ratings are invariably attended with the risk of the subject's making a false estimate. This risk is maximum in the subjective questionnaires- the personality inventories - which are interpreted as true statements about the subjects' attitude and conduct. The subject is thrown on his guard, wittingly or unwittingly, not to give himself out without reservation. This risk is minimum, on the other hand, when the situation of the test is so devised that the limiting circumstances apply not to the real design of the experiment but to its ostensible and fictitious purpose. Accordingly, though we used the self-rating method, the variable which

⁵ Symond, P., Diagnosing Personality and Conduct, p. 143.

was intended to be measured in our scales was completely covered over by the sort of camouflage which involved the direction as well as the outer form of our tests. Its expression in the testee's responses was thus immune from the effect of the inhibitory and distorting influences to which the self-ratings are generally subject. For instance, when we asked our subjects to rate themselves on some common lapses of conduct (Appendix IX), their attention was diverted from the main purpose of the measurement by the emphasis on the desired accuracy of their judgments, the secrecy with which their responses were to be treated, etc., the result being that the subjects thought that information regarding their conduct and disposition in the suggested situations was solicited and were, presumably, motivated by the need for the exercise of discretion. By no stretch of imagination could they surmise our real but concealed lack of concern and indifference to the picture of their personality that their ratings contrived to put up. In fact, the greater the reservation they used in giving out the truth about themselves, the more their responses fulfilled our objective. We got confirmation of this view by actual enquiries from some of our subjects, after they had been through the tests. We found invariably that they were ignorant of the real purpose of the experiments and accepted them under the garb in which they were presented.

We find Allport⁶ discouraging the use of the disguised method. He says, "scales are usually given a misleading title that veils their true purpose from the subject; or irrelevant questions ("jokers") may be introduced to throw the subject off guard. A few scales are so elaborately disguised that their basis of scoring lies entirely beyond the subjects' power of comprehension or control. But these deceptions often interfere with the validity of a test, and on the whole work much better with children or stupid people than they do with alert adults for whom the tests are usually designed". He further adds, "Much better than reliance on deceptive tricks is a straightforward effort to secure honest and unstinted co-operation from the subjects." Perhaps, Allport has made short of the distorting influences which operate upon many subjects in spite of their conscious desire and effort to co-operate with the experiment. We can not, also, see eye to eye with him in his limiting the efficacy of the disguised method to its use among children or mentally deficient persons. In fact, the concealment of the purpose of the measurement is to be commended not only with respect to the paper and pencil personality tests but also in certain cases when objective measurements in the laboratory are involved. Test sophistication has always been noted as a notorious factor lowering the

⁶ Allport, G.W., Personality, p. 450.

efficiency of almost all experiments in psychology. Even tests of ability in which the individual can not exercise, to his advantage, much control over his responses, have been noted to be vitiated by sophistication. Sophistication disturbs, more conspicuously, measurements in the emotional field, whatever the method of measurement applied, ranging from the "scientifically imperfect" and "subjective" methods of clinical appraisements of personality to the most "perfect", "objective" observations in the controlled set-up of the laboratory. Those subjects who know about the purpose, for instance, of the Rorschach, or Murray's Thematic Apperception Tests, can hardly be of much use in examining the diagnostic values claimed for these instruments. Similarly in the field of laboratory experiments, if a person is aware that a certain set-up is intended to measure, for instance, "suggestibility", or "frustration tolerance", or "level of aspiration", perhaps he would prove most unfit to serve as a subject for the experiment. It follows that in all such experiments, *irrespective* of the age or mental level of the subject concerned, the intention of the experimenter has to be most cautiously guarded.

Murray⁷ emphasises the efficacy of the disguised method to the extent of including its recommendation among the principles that were adopted in

⁷ Murray, H.A., *Explorations in Personality*, p. 28.

organising the experiments reported by him and his colleagues. He says, "The subject's mind should be diverted from the true purpose of an experiment. This is usually accomplished by announcing a plausible but fictitious objective. If a subject recognizes the experimenter's aim, his responses will be modified by other motives; for instance, by the desire to conceal the very thing the experimenter wishes to observe."

The group included in our investigation was comprised of the psychology students of the First Ordinary Class of the Edinburgh University. The total strength of the class was two hundred and fifty. The tests were given on four days, one hour each, at a week's interval. The groupings of the tests for the respective periods were made to afford ample time for each subject to complete the tests. The attendance on the various days ranged between hundred and thirty-six and hundred and sixty-three, the average number being one hundred and fifty-five - one hundred and fourteen women and forty-one men. Keeping in view that the tests were not compulsory, the fairly large proportion of the attendance bears testimony to the interest the tests evoked in the students.

The very select character of our sample and, specially, the fact of our subjects being students of psychology, do not detract from the value of our work, as it might ordinarily be supposed. Rather, the

fact that our subjects being used to such testing programmes reacted to the tests less emotionally and less reservedly than is ordinarily expected, is turned to good account in view of the aim of our investigation. If we succeeded in indicating the influence of the expected variables in a situation where the tests were taken more unreservedly, we could be assured of their operations in a random group with little or no psychological enlightenment, and which may plausibly be expected to take the tests more reservedly. As we have incidentally remarked above, while discussing our methods of investigation, the stronger the subject's defences against making a truthful unemotional response to the tests, the greater the chances of his betraying himself with respect to the looked-for variables.

For scoring, we assigned equal weight to each item and thus computed a subject's score by counting the number of items checked by him. Our scores are, therefore, what have been described as "raw" scores. Cattell⁸ calls such measurements as "interactive", which are "the foundations of all others". He adds, "Here the measurement is 'raw' score, i.e., a performance reckoned in units of the physical world - e.g. seconds (reaction time); energy (blood metabolic rate); number of words recognized (scholastic test); number of friends visited in one week ('sociability'),

⁸ Op. cit., p. 148.

etc.". Our purpose was only to ascertain the influence of the expected variables on the questionnaire responses rather than to determine, more or less, definitely the amount of this influence, or to construct standardised scales for the measurement of these variables. Hence, it was neither worth while, nor permissible within the limitations of our undertaking to attempt a systematic conversion of the raw scores into the so-called "normative" scores, not to mention the number of measures we employed many of which were specially devised for the situation.

To determine sex differences, we scored the answers of the two sexes separately. For testing the significance of the differences, we calculated the ratio of the obtained differences to the standard errors of the differences, generally described as the "critical ratio", or "t". Vernon⁹ has observed that "it is customary to place very little reliance in a difference when its t is less than 2, or preferably 3". Garrett¹⁰ remarks, "For many years it has been customary for investigators to demand a critical ratio of 3 or more before a difference is regarded as significant. This extremely high standard sets up a confidence level which is probably not warranted in many experimental studies." We decided to take an

⁹ Vernon, P.E., *The Measurement of Abilities*, p. 95.

¹⁰ Garrett, H.E., *Statistics in Psychology and Education*, p. 208.

obtained difference as highly significant when t was 3 or more and significant when it was 2 or more. We will note that the method of "critical ratio" is not admissible, strictly speaking, in case of some of our measures, for the distribution of scores in those measures is not normal. However, we did not get abnormal distribution in case of those measures that we had taken from standardised tests, like "self-rating on abilities" (Tables 31 and 33, pp.196 + 198) and "self-rating on lapses of conduct" (Table 53, p.227-28). Also, in case of many of those measures which we specially prepared for this research, the scores clearly tended to normal distribution, for instance, "self-rating on desirable traits, List 3 (Table 37, p.204), "self-ratings on undesirable traits, List 3 (Table 58, p. 231), "interest in occupations of high social standing" (Table 46, p. 215), and "repugnance scores" (Table 11, p.157), though some of the distributions were heavily skewed. On these grounds, it seemed possible to presume that a revision of the component items, refinement of the method of scoring, and the use of a random or unselected sample might have resulted in a normal distribution in respect of the remaining measures also. But, it was not possible within the limitations of this enquiry, to decide this issue finally. We, accordingly, presumed a normal distribution, in an unselected group, for those measures also in respect of which we obtained

apparently abnormal distributions. Nevertheless, we did not feel confident in applying the "product-moment" method of correlation for testing the relationship between the various measures, the determination of which formed the essential part of our enquiry. As Vernon¹¹ observes, "Product-moment should be used whenever the variables to be compared show reasonably normal distributions." We therefore used the method of chi square¹² for deciding whether a statistically significant association existed between the scores made by our subject in the various measures.

For applying the chi square test, we used a 2 x 2 table with split at the median. The advantage of arranging the frequencies in a 2 x 2 table was that we could also get a definite indication regarding the positive or negative character of the association from the pattern of the algebraic signs of the differences between the obtained and expected frequencies shown in the four cells of the table.

¹¹ Vernon, P.E., Notes on Statistical Methods in Common Use in Vocational and Educational Research, III, Correlation Methods, p. 1.

¹² Lindquist, E.F., Statistical Analysis in Educational Research, pp. 41-43.

CHAPTER 4.

Measures of Insight.

The correlates of insight, as indicated in previous investigations (cf. p. 90), are (a) Intelligence, (b) Projection, and (c) Sense of humour. In addition, Allport suggests a more direct measure of insight as the ratio between what one thinks of himself and what others think of him. In what follows, we have adopted a measure of each one of these variables, except sense of humour, and determined their interrelationships. We could not succeed in discovering or devising a paper-and-pencil test of sense of humour that could be taken by our subjects, like our other measures, in the form of a self-inventory, but could nonetheless be amenable to objective interpretation by us. Tests of humour, that have been used in previous investigations do not afford any information regarding a person's actual reaction to the verbally represented situations of humour, except under the laboratory set-up, but only provide expressions of his opinion about his sense of humour or the various degrees of "humourousness" of the situations depicted. These opinions, like all other subjective estimates are liable to the same errors as those which prejudice the value of the personality questionnaires.

Intelligence Test.

As a measure of intelligence, we used the scores of our subjects in Group Test 33 of the National Institute of Industrial Psychology, which is administered every year to the Psychology Students of the First Ordinary Class of the University of Edinburgh. Test 33 is a standard verbal test of intelligence of proved value. The test is comprised of five sub-tests: Opposites, Analogies, Mixed Sentences, Completing Sentences, and Reasoning, the general character of which is too well known to merit description. The test has been standardised for adult use. The quoted reliability co-efficient for the test is ".9 or higher".^{12a}

We could also use the scores in two other tests of intelligence that were applied to our subjects, during the course of our investigation, by the Applied Psychology research unit of the Medical Research Council. These tests were Test AH⁴ and Test AH⁵, verbal and non-verbal, respectively. Being very similar to the standard verbal and non-verbal group tests, these too need no special description. We used the scores in these tests as a check on the results of Test 33 as administered to our subjects.

The following Table shows the frequency distribution of the scores in Test 33 made by the male, the female and the total groups:-

^{12a} Intimated by the psychologist in charge of the Test Service Section of the National Institute of Industrial Psychology.

TABLE 1.

Test Scores	Frequency		
	Male	Female	Total Group
180-189	5	6	11
170-179	7	15	22
160-169	17	31	48
150-159	9	23	32
140-149	7	21	28
130-139	4	7	11
120-129	2	4	6
110-119		1	1
N	51	108	159
Mean	159.40 \mp 2.14	157.09 \mp 1.43	157.83 \mp 1.19
Med.	161.56	158.63	159.81
S.D.	15.26	14.87	15.03

The following histogram is plotted from the distribution of the total group:-

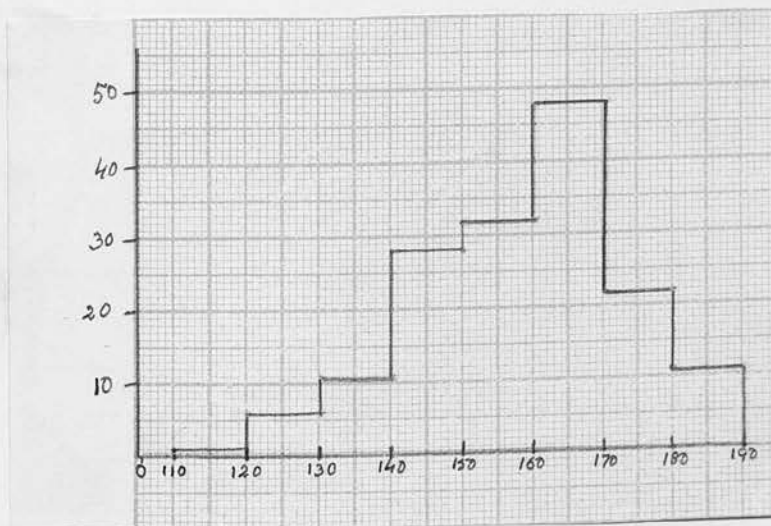


Table 2 shows that there is no significant difference between the Means or the S.D's of the two sex groups. The critical ratio in either case is less than 2.

Table 2.

	Obt. Diff.	S.E. Diff.	t
Means	2.31	2.57	0.9
S.D's	0.39	1.81	0.2

Tables 3 and 4 show the frequency distributions of Test AH⁴ and Test AH⁵ respectively.

Table 3.

Test Scores	Frequency		
	Male	Female	Total Group
120-129	4	2	6
110-119	7	10	17
100-109	8	16	24
90-99	9	18	27
80-89	10	26	36
70-79	2	16	18
60-69	2	5	7
50-59		2	2
N	42	95	137
Mean	97.83 ± 2.42	90.40 ± 1.58	92.68 ± 1.35
S.D.	15.68	15.39	15.86

The following histogram is plotted from
Table 3:-

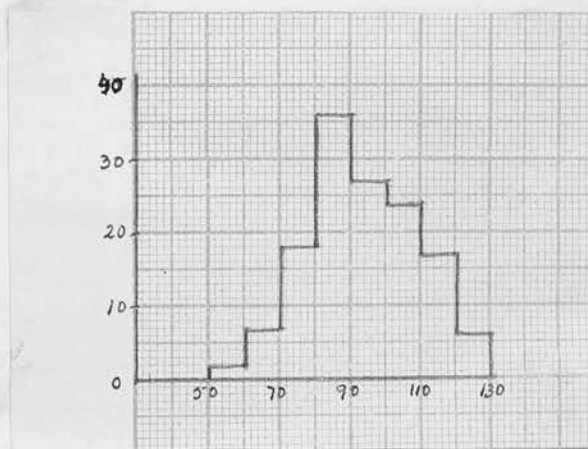
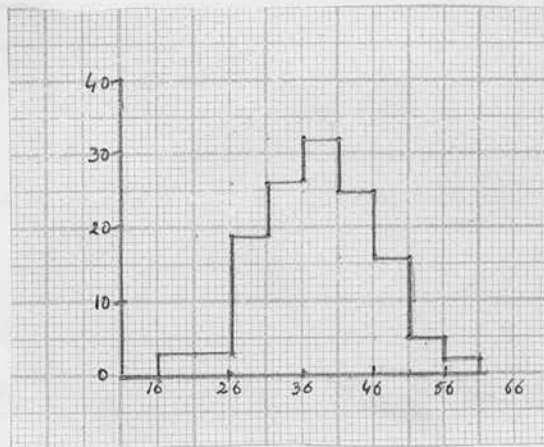


Table 4.

Test Scores	Frequency		
	Male	Female	Total Group
56-60	2		2
51-55	2	3	5
46-50	7	9	16
41-45	8	17	25
36-40	11	21	32
31-35	7	19	26
26-30	4	15	19
21-25		3	3
16-20		3	3
N	41	90	131
Mean	40.56 \mp 1.21	36.56 \mp 0.84	37.81 \mp 0.71
S.D.	7.74	7.93	8.09

The following histogram is plotted from Table 4:-



In order to determine whether the distributions of scores in the three tests of intelligence conform to the normal curve of distribution, we estimated the degree of skewness of each. As is evident from Table 5A, the skewness is not significant in any case:-

Table 5A.

Test	Sk.	S.E. Sk.	t
No. 33	-2.38	1.63	1.4
AH ⁴	2.00	1.90	1.05
AH ⁵	0.98	0.96	1.02

The distributions of scores in the three tests, thus, approach closely the normal distribution. For computing their intercorrelation we, accordingly, used the Product Moment Method. Correlation coefficients between Test 33 and the two other tests are given in Table 5B.

Table 5B.

Test	N	Correlation Coefficient
AH ⁴	112	0.58 ± .04
AH ⁵	108	0.61 ± .04

The amounts of the correlation coefficients are fairly large and compare well with the validity coefficients reported for other standardised tests of intelligence.

Since Test 33 is a standardised test of reputed value and came out to be a fairly satisfactory measure even in our investigation, we could employ our subjects' scores in this test for the purpose of comparison with all the measures we used in this research, over and above the special use we made of it as a measure of insight. Accordingly, we will have frequent occasions to refer to the results of Test 33 in connection with the treatment of the results of our other measures.

Projection.

Projection is treated in psychoanalytical literature as one of the defence mechanisms which is brought into operation by the Ego when it is exposed to the threat of Super Ego punishment for associating itself with an unacceptable Id tendency. As a result of this process, as we have already quoted

from Freud (p.101), the "internal" perception is transformed into an "external perception" and the "objectionable" idea or wish, instead of being recognised in oneself, is attributed to an external individual and attended to as such. Allport¹³ defines projection as "a type of self-deception by which a person ascribes his own secret thoughts, wishes and shortcomings to another person. If one castigates others, one is thereby saved from the painful duty of castigating oneself." Murray¹⁴ uses the term in a wider sense as descriptive of "egocentricity in perception, apperception and conception" and calls it projectivity. He remarks, "The S (subject) projects into others his own wishes, fears and interests and pet theories," and further adds some of the "common signs" of "projectivity" which identify this process with all varieties of illusory perceptions and delusions encountered, generally, in pathological behaviour. The opposite of "projectivity", Murray calls "objectivity" which, as we have noted above, is similar to Allport's "self-objectification". Stagner¹⁵ also gives a wide meaning to projection. He says, "Projection is the term applied to behaviour in which the "self" is treated as "not-self", or in simpler language, when we

¹³ Op. cit., p. 172.

¹⁴ Op. cit., p. 220.

¹⁵ Op. cit., p. 102.

respond to our own (subjective) ideas, feelings and beliefs as though they were the (objective) ideas, feelings, and beliefs of others." We do not feel justified in using "projection", in this wide sense. "Projection" originated as a dynamic concept and to use it as a description for the installation of any "subjective" content into the external world treated as belonging thereto, would rob the concept of its dynamic setting.

To avoid confusion, it seems necessary to make ourselves clear about the distinction between the use of the term "projection" in relation to the so-called "projection tests", like Rorschach's ink blots or Murray's Thematic Apperception tests, and its use as a mechanism of defence. The projection test involves the use of a technique which brings about an unwitting upsurging of the unconscious repressed impulses of a person when he is called upon to give structure to an unstructured or partially structured material visually or auditorily presented. It evokes the externalisation of one's attitudes and dispositions through the agency of an externally presented medium. The latter provides a "screen" on which one's hidden thoughts, aspirations, and interests are thrown and concretized. This process is similar to "dream work", which also involves an externalisation of one's "latent" mental contents that are dramatized on a hallucinatory stage. Projection when used as a

defence mechanism involves a human medium which is invested with "unacceptable" qualities really possessed by the projecting individual but without his consciousness of possessing them.

Turning to the experimental work on projection, we find that apart from the clinical investigations, there is, within the writer's knowledge, only one notable statistical treatment of projection which has often been quoted by psychologists, namely, Sears,¹⁶ study of projection. We propose to examine this rather closely before we pass on to the measure of projection used by us.

Sears opens his account with the definition of projection given by Healy, Bronner and Bowers as "a defensive process under the sway of the pleasure principle whereby the Ego thrusts forth on the external world unconscious wishes and ideas which, if allowed to penetrate into consciousness, would be painful to the Ego". Sears remodels this definition as: "A wish, attitude, or habit hierarchy which is not compatible with other attitudes or habits of an individual may be attributed by that individual to other persons rather than to himself providing he lacks insight into the fact that he himself possesses the trait in question." Sears, then, advances a hypothesis that "any persistently motivated habit or

¹⁶ Sears, R.R., "Study of Projection," Journ. Soc. Psychol., 1936, 7, pp. 151-163.

attitude may be projected if it is sufficiently reprehensible to be refused recognition by its possessor". To test his hypothesis, Sears selected out of 31 "obnoxious non-sexual" character traits, those which ranked highest when rated for reprehensibility by 36 students. These were the, so-called, "anal character traits" of stinginess, obstinacy and orderliness. The various gradations of each trait, ranging from one extreme to the other, were laid out on a seven-point rating scale. The descriptions of the positions on the scale do not appear to the writer to be as precise and clear as necessary for a rating scale. Sears had 96 students rate themselves and their associates, in three groups of 37, 38 and 22 each. Their ratings were converted into measures of three variables: (1) the degree to which each subject demonstrated a given trait, which constituted his "true measure" of the trait; (2) the amount of the trait attributed by him to others; and (3) the presence or absence of insight with respect to his possession of the trait. Sears found no association in the total group between the amount of possession of a trait and that of its attribution to others. But when he split up the group on the basis of presence and absence of insight, he noticed a tendency for the group lacking insight to rate others as falling in the same extreme of the distribution to which they themselves belonged, i.e., if their "true"

amount of a trait lay on the favourable side of the distribution, their average rating of others on that trait also fell on the same side. More explicitly, persons rated obstinate by others, and, therefore, presumed to be such, had a tendency to rate others also as obstinate, and, conversely, those rated generous, tended to rate others as such. Projection, Sears concluded, therefore, operates in either direction and does not involve merely the attribution of unacceptable tendencies but also the attribution of desirable traits.

Beside projection, Sears discovered another "dynamic process" which he called "contrast formation". He noticed a negative relation between the possession of a trait and its attribution to others in the group having insight into their possession of that trait. More explicitly, a stingy person knowing himself to be such, tended to regard others as generous, while a tidy person with the knowledge of the fact, showed a tendency to rate others untidy. This result seems to us to be very curious. Freedom from prejudice while appraising one's own qualities is not expected to deprive one of the capacity to the unbiased assessment of others' characteristics. As Murray¹⁷ points out, what we have quoted also before, a person endowed with "objectivity" is "impartial, detached, disinterested, tolerant, understanding". He "is aware of

¹⁷ Ibid, p. 221.

and responds to the conditions that actually exist. He observes the plain facts, clearly differentiates between what is subjective (within his self) and what is objective (outside his self), is conscious of his inner feelings and inclinations and regards them with an impartial eye. He observes behaviour accurately and makes reliable inferences as to the probable inner states of other people. He has true insight, and is able to interpret the motives of his acquaintances reasonably well." Thus, according to Murray, a person endowed with insight, or "objectivity", manifests its possession not only in relation to his own personal qualities, but also when viewing the traits and abilities of other persons. Moreover, the occurrence of "contrast formation" is antagonistic to the function of insight, even when considered with regard to oneself. For, we actually encounter such a process in one who is burdened with an exaggerated sense of his defects and disabilities - a highly emotion-laden person, which causes to magnify in his eyes the opposite virtues of others by way of contrast; a person according to whom whatever is enviable in personality is "given" to others. Or, we may have an opposite case of contrast formation in one for whom the insatiable need for self-glorification demands for its relief the perception of others as "tiny mortals" infected with an ineradicable pervers-

sity and eternal damnation.¹⁸ Undoubtedly, neither type can be justifiably credited with insight. This curious result may be the outcome of some imperfection in Sears' investigation. As a matter of fact the article in which he reports his investigation suffers from the lack of some important statistics. He does not give us any idea regarding the distribution of the scores in the various variables that he uses. Most of the correlation co-efficients showing the association between the variables are of negligible size, while others, also being rather low, tell us nothing in the absence of a test of significance. Above all, the rating method notoriously suffers from numerous drawbacks and does not produce satisfactory results unless treated with maximum caution.

To examine the operation of projection, we devised a situation different from that of Sears'. As we have pointed out (p. 116) our method of approach was more akin to the experimental objective type and, consequently, we were more interested in the behaviour of our subjects than the meanings that they put to their behaviour. The conception of the "true measure" of a person's trait as determined by rating was naturally repugnant to our approach. Moreover, in spite of the wider meaning which has in

¹⁸ Freud, S., Collected Papers, Vo. III. A Case of Paranoia, pp. 390-415.

some cases been attributed to projection, we preferred to use this term in the more restricted sense. As we have noted above, it seemed more plausible to us that projection is exemplified in attributing those traits to others whose possession in oneself is unconsciously withdrawn from consciousness as it occasions to the Ego a sense of guilt and shame or loss of security and prestige.

To secure a measure of projection we used two variables: (1) the attribution of traits to oneself, and (2) the attribution of traits to another person, each of which was further classified into: (a) the attribution of desirable traits to oneself, and (b) the attribution of undesirable traits to oneself, on the one hand, and (c) the attribution of desirable traits to other persons, and (d) the attribution of undesirable traits to other persons, on the other.

For our material, we selected eighty trait names from the list prepared by Allport and Odbert.¹⁹ We were guided in our choice by two principles: (1) the trait-name was to be definite and easy to understand, and (2) synonyms were to be avoided, for which we asked the help of the staff of the psychology department of the University. The approved trait names were introduced with a simple straightforward direction

¹⁹ Allport, G.W., and Odbert, H.S., Trait-names, a psycho-lexical study. Psychol. Monogr., 1936, 47, pp. 171-211.

(Appendix I,). The subject wrote the names of two persons well known to him and also his own name. He was asked to check those two persons and also himself on each trait and to encircle the letter "O", printed against each name along with "S", if he thought that one or both of the persons named possessed the given trait, and to encircle "S" if he thought that the trait belonged to himself as well. Thus, the subject was every time judging about his own possession of a trait along with its possession by another person. This situation appeared to us to be very favourable to the operation of projection, if projection characterised the individual concerned.

Our list of trait names, to which we will subsequently refer as List 1, comprised of both desirable and undesirable characteristics arranged in a random order. To identify the two types and set them apart for separate scoring, we had 24 post-graduate students rate them as: (1) commonly treated as strongly reprehensible, (2) commonly treated as undesirable but not strongly reprehensible and, (3) commonly treated as desirable (Appendix II). There was perfect agreement between all raters with respect to the following desirable traits:-

- | | |
|------------------|-------------------|
| 1. Affectionate. | 13. Hospitable. |
| 2. Benevolent. | 14. Just. |
| 3. Broad-minded. | 15. Kind-hearted. |
| 4. Considerate. | 16. Level-headed. |

- | | |
|--------------------|----------------------|
| 5. Congenial. | 17. Open-minded. |
| 6. Courageous. | 18. Public-spirited. |
| 7. Courteous. | 19. Self-reliant. |
| 8. Energetic. | 20. Self-possessed. |
| 9. Frank. | 21. Sincere. |
| 10. Generous. | 22. Sociable. |
| 11. Good-humored. | 23. Talented. |
| 12. Good-tempered. | 24. Tolerant. |
| 25. Trustworthy. | |

The remaining 55 trait names were rated as either undesirable or reprehensible, except 5 on which there was some disagreement. We prepared another list containing these 50 undesirable or reprehensible trait names and added 50 new names possessing both desirable and undesirable character. This new list of 100 trait names, described as List 2, was presented to our subjects for checking against desirability, undesirability and reprehensibility. The purpose of this checking was twofold: (1) to determine, finally, the undesirable traits occurring in the first list; and (2) to measure the strength of the tendency to show "repugnance" to the undesirable traits as determined by the number of a person's "reprehensible" checkings; it was intended to examine the relation of this tendency to the attribution of desirable or undesirable traits to oneself or to others. To attain precision, a simple description of each of the three categories was given. (Appendix III).

The frequency of the "desirable", "undesirable" and "reprehensible" checkings is shown in Appendix A. For comparison between the sexes, the frequencies have also been converted into percentages with the decimal values rounded off. As is evident from a glance at the table (Appendix A), there is no remarkable sex difference in the characterisation of the trait names as desirable, undesirable, or reprehensible.

The following 35 trait names which occur in both lists, were finally selected as undesirable names. It will be noted from Table 6 that they have been checked as undesirable or reprehensible by more than 95 per cent. of our subjects, which amounts, practically, to total agreement. The Table also shows the frequency of the checking of each item separately under the categories of undesirable and reprehensible. Items checked reprehensible in 50 per cent. of cases or more are marked with an asterisk. These are subsequently referred to as reprehensible items:-

Table 6.

N = 109	Undesirable		Reprehensible		Undesirable or Reprehensible	
	f	%	f	%	f	%
1. Applause-seeking	89	82	18	16	107	98
2. Arrogant	57	52	51	47	108	99
3. Cliquish	90	83	19	17	109	100

	f	%	f	%	f	%
4. Cold-hearted	60	55	46	42	106	97
5. Conceited	60	55	48	44	108	99
# 6. Cowardly	43	39	66	61	109	100
# 7. Degenerate	41	38	68	62	109	100
8. Distrustful	62	57	46	42	108	99
9. Envious	75	69	33	30	108	99
10. Fault-finding	79	72	30	28	109	100
11. Fickle	87	80	22	20	109	100
12. Garrulous	88	81	19	17	107	98
13. Hasty	101	92	6	6	107	98
14. Hot-tempered	86	79	22	20	108	99
# 15. Ill-mannered	39	36	70	64	109	100
16. Improvident	92	84	13	12	105	96
# 17. Insincere	44	40	65	60	109	100
18. Irritable	86	79	23	21	109	100
19. Lethargic	93	85	14	13	107	98
# 20. Malevolent	25	23	83	76	108	99
# 21. Mercenary	54	49	54	49	108	99
22. Moody	96	88	10	9	106	97
23. Over-critical	87	80	22	20	109	100
24. Panicky	82	75	27	25	109	100
25. Quarrelsome	78	72	31	28	109	100
26. Self-absorbed	96	88	10	9	106	97
27. Self-centred	71	65	37	34	108	99
28. Self-seeking	64	59	42	38	106	97
# 29. Spiteful	26	24	83	76	109	100

	f	%	f	%	f	%
30. Tactless	95	87	14	13	109	100
31. Timid	98	90	10	9	108	99
*32. Treacherous	11	10	98	90	109	100
33. Unpractical	100	92	7	6	107	98
34. Unsympathetic	78	72	31	28	109	100
*35. Dishonest	14	13	94	86	108	99

Having determined our lists of desirable and undesirable (includes reprehensible also) trait names, we calculated the frequency of each item as applied to oneself and as assigned to others, as shown in Table 7 and Table 8:-

Table 7.

Desirable Traits	Applied to Self				Applied to Others				Diff. in Percentage	
	Frequency		Percentage		Frequency		Percentage		Between Self and Others	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
N = 38 Men 98 Women										
1. Affectionate	26	87	68	89	23	78	60	80	8	9
2. Benevolent	22	50	58	51	22	60	58	61	0	-10
3. Broad-minded	33	83	87	85	29	72	76	73	11	12
4. Congenial	23	64	60	65	30	82	79	84	-19	-19
5. Considerate	29	80	76	82	28	82	74	84	2	-2
6. Courageous	13	30	34	31	22	48	58	49	-24	-18
7. Courteous	28	74	74	76	27	79	71	81	3	-5

	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male
8. Energetic	20	62	53	63	24	75	63	77	-10	-14
9. Frank	27	80	71	82	32	80	84	82	-13	0
10. Generous	19	72	50	73	27	84	71	86	-21	-13
11. Good- humored	29	84	76	86	29	93	76	95	0	-13
12. Good- tempered	30	67	79	64	30	86	79	88	0	-24
13. Hospit- able	23	76	60	78	25	80	66	82	-6	-4
14. Just	27	73	71	74	24	71	63	72	8	2
15. Kind- hearted	21	77	55	79	23	87	60	89	-5	-10
16. Level- headed	21	58	55	59	35	74	92	75	-37	-16
17. Open- minded	30	79	79	81	25	74	66	75	13	6
18. Public- spirited	17	42	45	43	28	57	53	58	-8	-15
19. Self- reliant	25	58	66	59	26	67	68	68	-2	-9
20. Self-po- ssessed	8	30	21	31	21	68	55	69	-34	-38
21. Sincere	31	87	82	89	28	83	74	85	8	-4
22. Sociable	25	72	66	73	28	88	74	90	-8	-17
23. Talented	10	15	26	15	20	44	53	45	-27	-30
24. Tolerant	23	81	87	83	24	79	63	81	24	2
25. Trust- worthy	28	85	74	87	30	83	79	85	-5	2

Table 7 shows that both sexes judge themselves more often than others as affectionate, broad-minded,

just, open-minded, and tolerant; and others more often than themselves as congenial, courageous, energetic, generous, hospitable, kind-hearted, Level-headed, public-spirited, self-reliant, self-possessed, sociable, and talented. The male group rates itself and others equally often on benevolence, good-humor and good-temper; while the female group does so only on frankness. The differences between self-rating and rating others are in the opposite directions in the two sexes for "considerate", "courteous", "sincere" and "trustworthy", though the amounts of the differences are rather small. On the whole, both sexes tend to assign most of the desirable traits more often to others than to themselves; the female group does so for 18 out of the 25 traits, and the male for 14.

Table 8.

Undesirable Names	Applied to Self				Applied to Others				Diff. in Percentage	
	Fre-quency		Per-centage		Fre-quency		Per-centage		Between Self and Others	
	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male
1. Applause-seeking	17	19	45	19	13	34	34	35	11	-16
2. Arrogant	4	7	11	7	20	22	53	22	-42	-15
3. Cliquish	9	11	24	11	13	34	34	35	-10	-24
4. Cold-hearted	3	4	8	4	5	9	13	9	-5	-5

	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male
5. Conceited	13	20	34	20	15	34	39	35	- 5	-15
*6. Cowardly	4	16	10	16	3	7	8	7	2	9
*7. Degenerate	2	1	5	1	3		8		- 3	1
8. Distrust- ful	5	18	13	18	9	12	24	12	-11	6
9. Envious	9	26	24	27	8	24	21	24	3	3
10. Fault- finding	13	44	34	45	12	31	32	32	2	13
11. Fickle	5	18	13	18	6	28	16	29	- 3	-11
12. Garrulous	5	20	13	20	16	45	42	46	-29	-26
13. Hasty	8	33	21	34	13	22	34	22	-13	12
14. Hot- tempered	4	23	10	23	8	17	21	17	-11	6
*15. Ill- mannered	1	4	3	4	6	11	16	11	-13	-7
16. Improvi- dent	7	11	18	11	5	10	13	10	5	1
*17. Insincere	2	3	5	3	8	21	21	21	-16	-18
18. Irritable	10	38	26	39	13	22	34	22	- 8	17
19. Lethargic	10	24	26	24	10	14	26	14	0	-10
*20. Malevolent		1		1	5	2	13	2	-13	- 1
*21. Mercenary	4	8	10	8	9	12	24	12	-14	- 4
22. Moody	17	41	45	42	12	29	32	30	13	12
23. Over- critical	14	41	37	42	9	20	24	20	13	22
24. Panicky	7	26	18	27	10	21	26	21	- 8	6
25. Quarrel- some	3	9	8	9	9	15	24	15	-16	- 6

	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male
26. Self-absorbed	13	26	34	27	11	19	29	19	5	8
27. Self-centred	12	26	32	27	16	24	42	24	-10	3
28. Self-seeking	6	9	16	9	8	15	21	15	-5	-6
*29. Spiteful		3		3	4	13	11	13	-11	-10
30. Tactless	8	21	21	21	13	33	34	34	-13	-13
31. Timid	2	14	5	14	6	10	16	10	-11	4
*32. Treacherous					3	2	8	2	-8	-2
33. Unpractical	11	12	29	12	7	11	18	11	11	1
34. Unsympathetic	2	8	5	8	6	12	16	12	-11	-4
*35. Dishonest		2		2	3	1	8	1	-8	1

Table 8 shows that both sexes tend more to view others as arrogant, cliquish, cold-hearted, conceited, fickle, garrulous, ill-mannered, insincere, malevolent, mercenary, quarrelsome, self-seeking, spiteful, tactless, treacherous, unsympathetic, than to consider themselves as such; and, conversely, to view themselves as cowardly, envious, fault-finding, improvident, moody, over-critical, self-absorbed and unpractical than to assign these characteristics to others. Sex differences are shown in case of such trait names as degenerate, distrustful, hasty, hot-tempered, irritable, panicky, self-centred, timid and dishonest,

which are more often applied by the male group to others and by the female group to themselves. Similarly, more of the female group think others as applause-seeking and lethargic; on the other hand, more of the male group consider themselves applause-seeking. Except for one trait, namely, cowardly, the male group tends to apply the remaining "reprehensible" items more often to others than to itself; the female group assigns 6 of the 9 "reprehensible" items more often to others, and the remaining three more often to itself.

The ratings on the four variables; (1) desirable traits attributed to self, (2) undesirable traits attributed to self, (3) desirable traits assigned to others, and (4) undesirable traits assigned to others, were scored separately. The score in each case was determined by counting the number of items checked. The following frequency distributions are tabulated for the scores on the four variables:-

Table 9(a).

Desirable Trait Names						
Score	1. Applied to Self Frequency			2. Applied to Others Frequency		
	Male	Female	Total Group	Male	Female	Total Group
24-25				1	11	12
22-23	4	15	19	6	21	27
20-21	5	21	26	4	23	27
18-19	6	13	19	9	14	23
16-17	4	18	22	7	11	18
14-15	8	12	20	6	7	13
12-13	3	8	11	3	7	10
10-11	5	7	12	0	2	2
8-9	0	1	1	0	0	0
6-7	2	0	2	2	0	2
4-5	0	1	1		2	2
2-3	1	1	2			
0-1		1	1			
N	38	98	136	38	98	136
Mean	15.55 + .78	17.03 + .45	16.62 + .39	17.40 + .68	19.11 + .42	18.63 + .36
σ	4.78	4.50	4.63	4.63	4.18	4.22

The following histograms are plotted from the distributions for the Total Group, Table 9(a):-

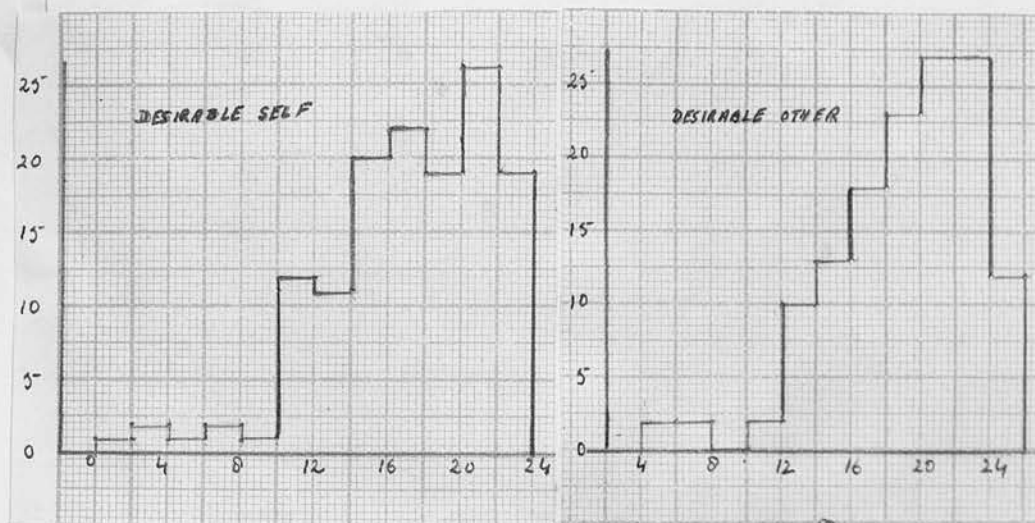
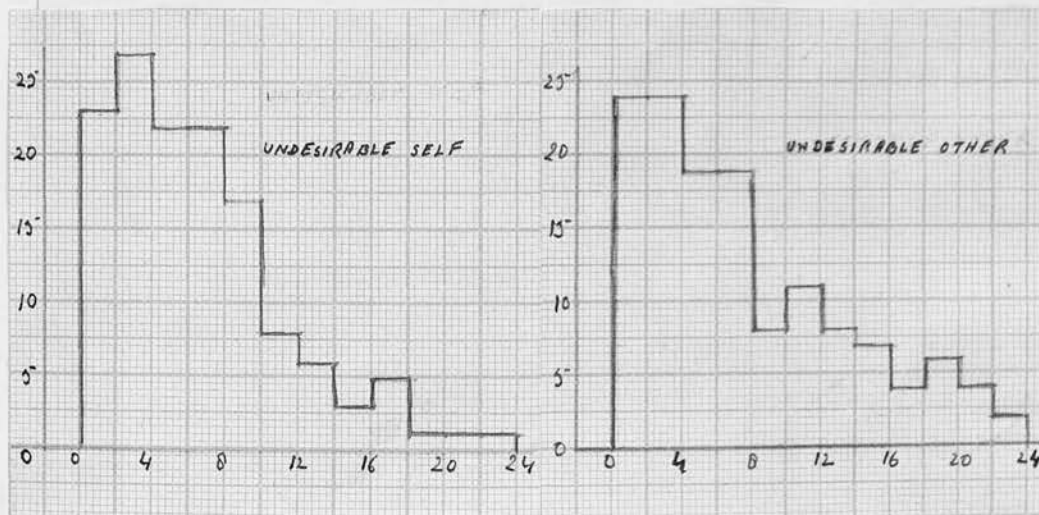


Table 9(b).

Undesirable Trait Names						
Score	3. Applied to Self Frequency			4. Applied to Others Frequency		
	Male	Female	Total Group	Male	Female	Total Group
22-23		1	1	1	1	2
20-21		1	1	2	2	4
18-19		1	1	3	3	6
16-17	1	4	5	2	2	4
14-15	2	1	3	2	5	7
12-13	1	5	6	4	4	8
10-11	2	6	8	2	9	11
8-9	5	12	17	1	7	8
6-7	7	15	22	2	17	19
4-5	10	12	22	8	11	19

Score	Male	Female	Total Group	Male	Female	Total Group
2- 3	7	20	27	7	17	24
0- 1	3	20	23	4	20	24
N	38	98	136	38	98	136
Mean	6.08	5.93	5.97	8.66	6.54	7.13
	\mp .63	\mp .50	\mp .40	\mp 1.08	\mp .55	\mp .51
σ	3.87	4.99	4.70	6.69	5.49	5.92

The following histograms are plotted from the distributions of the Total Group, Table 9(b):-



Both sexes tend to assign more desirable as well as undesirable traits to others than to themselves.

The following Table shows the significance of the differences between the Means and S.D's of the two sexes in each of the four variables:-

Table 10.

Variable		Obt. Diff.	Diff.	t
1. Desirable Self	Means	1.48	0.90	1.6
	S.D's	0.28	0.64	0.44
2. Undesirable Self	Means	0.15	0.80	0.19
	S.D's	1.12	0.57	1.9
3. Desirable Other	Means	1.72	0.79	2.2
	S.D's	0.01	0.57	0.02
4. Undesirable Other	Means	2.12	1.21	1.7
	S.D's	0.79	0.87	0.9

Table 10 shows no significant difference for variables 1, 2, and 4 between the Means or the Standard Deviations of the two sexes. The critical ratio amounts to less than 2 in every case. Table 10 shows a significant difference for Variable 3 between the means of the two sexes.

Analysis of the checkings on List 2 which consisted of 100 trait names, including 50 undesirable items from List 1, showed 25 trait names predominantly checked as desirable and the remaining 75 as undesirable or reprehensible. We scored the "undesirable" and "reprehensible" checkings separately for each subject and computed their arithmetical means, which were 48.88 and 24.98, respectively. We then subtracted the total number of "reprehensible" checkings made by each subject from his total number of "undesirable" checkings. Since about one third of the subjects had checked more traits as "reprehensible" than "undesir-

able", one third of the resulting differences also were expected to be negative. To make all scores positive, we added 50 to the differences, with their algebraic signs retained. Thus, those subjects who checked more traits as undesirable, about two thirds of the total number, scored above 50, while those who checked more traits as reprehensible, about one third of the total number, scored below 50. Subjects scoring high were taken to show lesser degree of repugnance to the undesirable traits. On the other hand, subjects scoring low were treated as giving evidence of greater degree of repugnance. In other words, the latter were presumed to exhibit a greater "sensitivity" to the "offensiveness" of an attitude, quality, or conduct, or psychoanalytically speaking, a "strong super ego formation". Table 11 gives the frequency distribution of the "repugnance scores" obtained by a group of 109 subjects. The distributions of the scores of the two sexes are also shown separately in the Table:-

Table 11.

Score	Frequency		Total Group
	Male	Female	
110-119	2	4	6
100-109	4	10	14
90-99	2	10	12
80-89	7	15	22
70-79	2	12	14
60-69	6	5	11
50-59	4	4	8
40-49	4	8	12
30-39	1	3	4
20-29	1	1	2
10-19	1	2	3
0-9		1	1
N	34	75	109
Mean	71.56 ±4.32	75.57 ±2.97	74.68 ±2.45
S.D.	25.16	25.70	25.59

The following histogram is plotted from the distribution of the total group:-

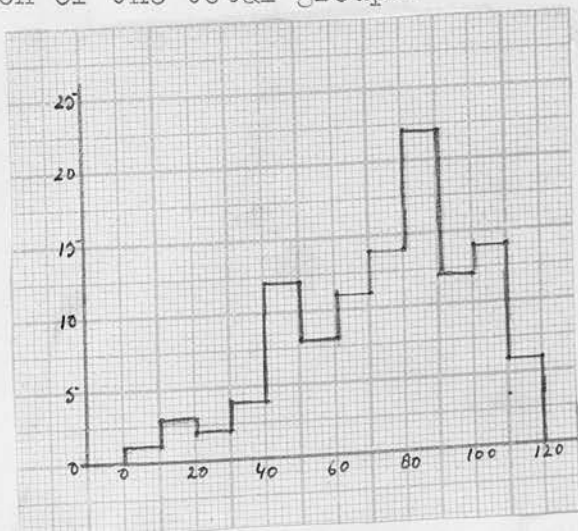


Table 12 shows that there is no significant difference between the Means or the S.D's of the two sexes.

Table 12.

	Obt. Diff.	Diff.	t
Means	4.01	5.34	0.75
S.D's	0.54	0.38	1.42

Reverting to Trait List 1, we applied the χ^2 test of association to determine the relations between checking self and others in the following combinations:-

Table 13.

	χ^2	df	P	Sign	N
1. Des. Self: } 2. Des. Others }	7.372	1	<.01	+	136
1. Des. Self: } 4. Undes. Others }	1.447	1	<.30>.20	+	136
3. Undes. Self: } 2. Des. Others }	4.112	1	<.05>.02	+	136
3. Undes. Self: } 4. Undes. Others }	10.657	1	<.005	+	136

Table 13 shows highly significant association between rating self and rating others on desirable traits as well as on undesirable traits. There is significant association also between rating self on undesirable traits and rating others on desirable

traits. The association in every case is positive. There is no significant association between rating self on desirable traits and rating others on undesirable traits.

Now, projection consists of the process of ascription of one's own "unacceptable" tendencies, thoughts, desires, and habits to outer persons and the failure to recognise them as belonging to oneself. In our testing situation, projection was expected to be revealed by the attribution of an undesirable trait to others and its disregard in oneself. And, since a sufficiently large and wide assortment of traits was presented for checking, it was further expected that a subject's liability to projection would be indicated by the predominance of his checkings on others, with respect to the undesirable traits, over his checkings on himself,-the larger his amount of checking on others, the lesser his amount of checking on himself. A reference to Table 9(b), p. 153, shows that the difference between the mean checkings on self and the mean checkings on others is in the expected direction; the subjects tend on the average to assign more undesirable traits to others than to themselves. But as shown by Table 14, the difference is significant for the desirable traits only.

Table 14.

	Obt. Diff.	^{s.e.} Diff.	t
Des. Other - Des. Self	2.01	.53	3.8
Undes. Other - Undes. Self	1.61	.65	1.8

The test of association (Table 13) also does not fulfil our expectation, for the association is positive in every case: the tendency to check more undesirable traits on others is accompanied by a tendency to check more of those traits on oneself also. But, the operation of projection demanded the association to be negative. Hence the group as a whole does not furnish any evidence of projection; our findings rather point in the opposite direction.

As we have noted above, Sears also failed to discover the operation of projection in his total group of subjects. He then split them into those who possessed insight and those who lacked insight, and noticed that projection characterised the latter group. The criterion of insight that he used was the agreement between one's admission of a trait in himself and its ascription to him by others. We have used this criterion as another measure of insight and its discussion will follow the account of projection. So, at this place, we proposed to employ our subjects' scores on Intelligence Test 33, assuming that those scoring in the upper half of the distribution possessed more insight, while those

scoring in the lower half possessed less insight. We, accordingly, divided our total group of subjects into two sub-groups: (1) the more intelligent or more insightful group - those falling in the upper half of the distribution of intelligence test scores; (2) the less intelligent or less insightful group - those falling in the lower half of the distribution of intelligence test scores. The total number of subjects who had checked Trait List 1 and whose scores on Test 33 were also available was 103. We dropped the last three, thus reducing the number to 100, for ease of calculation.

Table 15 shows the means, ranges, and standard deviations of the ratings made on the four variables by the sub-groups (Frequency Distribution Tables - Appendix B): (1) More insightful, and (2) less insightful.

Table 15.

	(1) More Insightful Group N.50			(2) Less Insightful Group N.50		
	Mean	Range	σ	Mean	Range	σ
1. Des. Self	16.74 \mp .67	2-23	4.71	16.62 \mp .66	0-23	4.69
2. Des. Others	19.26 \mp .47	12-25	3.30	18.58 \mp .62	4-25	4.40
3. Undes. Self	6.74 \mp .75	0-23	5.33	5.54 \mp .64	0-21	4.57
4. Undes. Others	7.66 \mp .80	0-19	5.67	7.14 \mp .85	0-23	6.01

Certain marked tendencies are reflected in Table 15. Though the less insightful group, like the more insightful, attributes, on the average, more desirable traits to others than to itself, the extent of the difference is larger for the more insightful group, so that it may be maintained that the more insightful group shows a preponderating tendency to assign more desirable traits to others as compared to the less insightful group. Similarly, though contrary to our expectation, the more insightful group also, like the less insightful, applies more undesirable traits to others than to itself, the extent of this difference is in the reverse direction, that is smaller for the more insightful group, so that the less insightful group may be presumed to show a preponderance of the tendency to assign more undesirable traits to others than to itself. We also note that the difference between the two groups with respect to the attribution of undesirable traits to others is much smaller as compared to the difference between them in the attribution of undesirable traits to self, which shows the greater tendency for the less insightful group to assign more undesirable traits to others and less undesirable traits to itself. Nevertheless, as is evident from Table 16, which shows the differences within the groups and those between the groups with respect to the various variables, the amounts of the differences, are not statistically significant

for the undesirable traits and, apart from indicating some general trends, do not, therefore, warrant any definite conclusion.

Table 16.

Difference Within Group N = 50				Difference Between Groups N = 50 Group(1)-Group(2)				
Des. Others minus Des. Self		Undes. Others minus Undes. Self		Des. Others	Des. Self	Undes. Others	Undes. Self	
Group (1)	Group (2)	Group (1)	Group (2)					
Obt. Diff.	2.52	1.96	0.92	1.60	0.68	0.12	0.52	1.20
S.E. Diff.	0.82	0.91	1.10	1.06	0.78	0.94	1.17	0.99
t	3	2.15	0.84	1.5	0.87	0.12	0.44	1.21

The differences in range and standard deviation also, generally speaking, consistently indicate the same trend. Thus the lower limit of desirable traits assigned to others (Table 15) is smaller in magnitude for the less insightful group than for the more insightful, though the upper limit is the same for both. There is no difference in this respect so far as the attribution of desirable traits to self is concerned. Similarly, the upper limit of undesirable traits applied to self is smaller in the less insightful group than in the more insightful group, but, conversely, the upper limit of undesirable attributes applied to others is larger for the less insightful, which, again, supports the tendency shown by the less insightful group to assign more undesir-

able traits to others than to itself.

We also classified for each sub-group, the ratings made on a pair of variables by each member of the sub-group concerned according as falling in: (1) the lower half of the distribution of ratings found for the total group in a given variable, and (2) the upper half of the distribution of ratings found for the total group in the same variable. This resulted, ultimately, in four classes: A. Those falling in upper half in both variables; B. Those falling in lower half in both variables; C. Those falling in lower half in the second variable and upper half in the first; and D. Those falling in upper half in the second variable and lower half in the first. The frequency of ratings in each class or category was also converted into percentages for comparison between the sub-groups, as shown in Table 17.

Table 17.

Class	N.50 (1) More Insightful				N.50 (2) Less Insightful			
	I	II	III	IV	I	II	III	IV
	Des. Self	Des. Self	Undes. Self	Undes. Self	Des. Self	Des. Self	Undes. Self	Undes. Self
	Des. Others	Undes. Others	Undes. Others	Des. Others	Des. Others	Undes. Others	Undes. Others	Des. Others
A	13 26%	12 24%	19 38%	13 26%	14 28%	16 32%	12 24%	13 26%
B	16 32%	13 26%	17 34%	13 26%	15 30%	14 28%	15 30%	18 36%
C	10 20%	11 22%	7 14%	11 22%	10 20%	9 18%	8 16%	12 24%
D	11 22%	14 28%	7 14%	13 26%	11 22%	11 22%	15 30%	7 14%

A = Upper half both variables.

B = Lower half both variables.

C = Upper half first and lower half second.

D = Lower half first and upper half second.

On comparing the pairs of variables in the corresponding columns for Group (1) and Group (2), we note some important indications which are consistent with our earlier findings. Column I does not show any remarkable difference between the two groups. In Column II, the highest percentage, 32%, of the less insightful group assign larger number of desirable traits to themselves and of undesirable traits to others, while in the corresponding column for the more insightful group we note about equal proportion under all four categories. In Column III, 30% of the less insightful group assign more undesirable traits to others and less to themselves, while only 16% assign more undesirable traits to themselves and less to others. Contrasted with this we find in the same column for the more insightful group 14% attributing more undesirable traits to others and less to themselves, and 14% attributing more undesirable traits to themselves and less to others. In Column IV for the less insightful group, we find quite consistently, the reverse of Column II for the same group, namely, that the highest percentage, 36%, attribute less undesirable traits to themselves and less desirable traits to others. The corresponding

column for the more insightful group shows about equal proportion under each category. Thus the incidence of percentages in the various columns consistently indicates a dominant tendency among the less insightful group to assign more undesirable traits to others and less to themselves. No such tendency is indicated for the more insightful group.

The following table shows, for the sub-groups, the incidence of percentages in the upper and lower halves of the distribution of checkings on each variable made by the total group:-

Table 18.

	(1) More Insightful Group		(2) Less Insightful Group	
	Upper Half	Lower Half	Upper Half	Lower Half
1. Des. Self	46%	54%	50%	50%
2. Des. Other	48%	52%	50%	50%
3. Undes. Self	52%	48%	40%	60%
4. Undes. Other	52%	48%	54%	46%

Table 18 shows that for the less insightful group, the differences between the percentages falling in the two halves of the distribution with respect to variables 3 (Undes. Self) and 4 (Undes. Other) are in the expected direction; more of the self-ratings on undesirable traits fall in the lower half, while, conversely, more of the ratings of others on those

traits fall in the upper half. In other words, we note, once again, in the less insightful group the expected tendency to assign more of the undesirable traits to others and less of those traits to themselves.

The following Table gives the result of the Chi² test of association applied to determine the relation between the four variables in the two subgroups.

Table 19.

N = 50 (1) More Insightful Group				N = 50 (2) Less Insightful Group				
Chi Sq.	df	P	Sign	Chi Sq.	df	P	Sign	
Des. Self: Des. Others	1.282	1	<.30>.20	+	1.291	1	<.30>.20	+
Undes. Self: Undes. Others	9.711	1	<.005>	+	0.080	1	<.30>.70	+
Des. Self: Undes. Others	0.080	1	<.80>.70	+	1.282	1	<.30>.20	+
Undes. Self: Des. Others	0.080	1	<.80>.70	+	2.000	1	<.20>.10	+

Table 19 shows a highly significant association in the more insightful group between assigning undesirable traits to others and acknowledging those

traits in oneself. The association is positive, that is, the members of this group give clear evidence of a definite tendency to place themselves as well as others in the same half of the distribution with respect to their ratings on the undesirable traits. No such tendency is manifested by the less insightful group as the Chi Sq. value amounts practically to zero. Besides this very significant difference between them, Table 19 indicates also other contrasting tendencies of the two groups, though these are not as conclusive. Thus, the less insightful group shows a positive association between attributing desirable traits to oneself and undesirable traits to others, while the more insightful group shows no such association, Chi Sq. amounting almost to zero. Further, the less insightful group shows positive association between attributing desirable traits to others and undesirable traits to self, without any corresponding association shown by the more insightful group.

The highly significant association demonstrated in the more insightful group between their extent of admission of undesirable traits in themselves and the amount of attribution of those traits to others, contradicts Sears' contention regarding a "contrast formation" between the amount of a trait known by the individual to be possessed by him and that of its attribution by him to others. As we have noted above, Sears has concluded from his results

that the more insightful group possesses a tendency to "perceive other personalities in contrast to their own". We have earlier expressed our surprise at this, on purely logical grounds (p.138-40), and now note that our logical conclusion has been supported by our statistical finding. As additional evidence in our favour, we may mention the uniformly higher average ratings made by the more insightful group on all variables as compared to the less insightful (Table 15, p. 161).

The above finding also leads us definitely to the conclusion that the more insightful group is uninfluenced by the tendency to projection. We expected projection to express itself through a negative relation between the attribution of undesirable traits to oneself and the ascription of these traits to others. But the more insightful group shows a highly positive association between these variables; hence, its freedom from liability to projection.

When we turn to the less insightful group, we find ourselves in a dubious situation. The group shows neither positive nor negative association between rating self and others on undesirable traits. We find, rather, a total lack of association which can warrant, at best, only the presumption that the possibility of projection is not precluded in this group, unlike the more insightful group which provides a positive proof to the contrary. We have earlier

marked certain tendencies in the less insightful group which point to the operation of projection, for instance, the general trend shown by this group to assign more undesirable traits to others, or to attribute less undesirable traits to itself (p 162, 166, 167) But in the absence of any definite evidence of a relation between these variables in the expected negative direction, these indications do not have much value.

Though we have rejected Sears' notion of a "contrast formation" operating in the persons possessing insight, our result has shown a somewhat similar process characteristic of the less insightful group only. As we noted above, the attribution of a given amount of desirable or undesirable qualities to the self is reflected in this group by the ascription of a similar amount of qualities of the opposite type to others. In other words, our result suggests that persons with less insight tend to (a) underestimate others while over-estimating themselves; or, (b) overestimate others while under-estimating themselves. We hinted at these processes while reviewing Sears' account of projection. But here again we need to remind ourselves that our result is not very conclusive and, therefore, shows only a general trend. Moreover, our criterion of insight differed from that used by Sears.

We turn next to the question proposed above: whether the degree of repugnance shown by an individual to unacceptable tendencies and habits, defined in our testing situation in terms of the number of trait-names rated as "reprehensible", has any relation to his tendency to assign desirable or undesirable traits to himself or to others. In order to answer this question, we tried to determine the relation between the "repugnance scores" (p.156) made by our subjects and their checking themselves or others on desirable or undesirable traits, as indicated in Table 20. The association, in every case, is negative.

Table 20.

N = 100 .	Chi ²	df	P	Sign
Repugnance: Des. Self	1.966	1	<.20>.10	-
Repugnance: Des. Others	1.442	1	<.30>.20	-
Repugnance: Undes. Self	0.040	1	<.90>.80	-
Repugnance: Undes. Others	4.026	1	<.05>.02	-

There is significant negative association between "repugnance score" and assigning undesirable traits to others, i.e., the lower the repugnance score made by a person, the larger the number of undesirable traits attributed by him to others and vice versa. As we have noted, a lower repugnance score implies a higher "reprehensible" checking, or, in other words, a greater sensitivity to the "offensiveness" of undesirable tendencies. Hence our result shows that

persons more highly sensitive to the reprehensibility of unacceptable characteristics tend more strongly to view others as qualified by those characteristics; no such tendency is shown with respect to their viewing themselves in regard to the unacceptable qualities, the Chi Sq. amounting almost to zero. The two other Chi. Sq. values are not statistically significant, being below the 5 per cent. level, but nonetheless they also indicate a general trend among persons who are highly sensitive to "obnoxious" traits to attribute more desirable qualities to themselves as well as to others.

As we have seen above, 109 subjects checked our Trait List 2. Of these 7 had not checked Trait List 1. Out of the remaining 102, we dropped the last 2, reducing the number to 100. These were split up into two sub-groups of 50 each, the first one falling within the upper half of the distribution of "repugnance score", the second in the lower half. In other words, the first group was characterised with a lesser sensitivity to the "obnoxiousness" of undesirable traits, while the second with a higher sensitivity to the "offensiveness" of those traits. We called the second the "sensitive" group, and the first the "non-sensitive" group, using the term "sensitive" as qualifying a person's attitude with regard to socially undesirable characteristics. The following Table represents the means, standard

deviations and ranges of the distributions of ratings of self or others on desirable or undesirable traits separately for the two sub-groups (Frequency Distribution Tables - Appendix C):-

Table 21.

	N.50 (1) Non-sensitive			N.50 (2) Sensitive		
	Mean	Range	σ	Mean	Range	σ
Desirable Self	15.78 + .74	0-23	5.15	17.42 + .55	6-23	3.88
Desirable Others	18.54 + .57	4-25	4.01	19.18 + .60	6-25	4.17
Undesirable Self	7.10 + .79	0-23	5.52	5.58 + .60	0-17	4.18
Undesirable Others	6.94 + .83	0-23	5.79	8.02 + .91	0-23	6.39

The above Table indicates some interesting points of differences between the two groups. Group (1) is less liberal than Group (2) in ascribing desirable qualities to self or to others, which is more conspicuously shown in the rating of self by Group (1) - the extent of the difference between Desirable-Self and Desirable-Other being larger for Group (1) than for Group (2). The same fact is revealed on comparing the ranges and the standard deviations for the two groups. The lowest number of desirable qualities attributed to self by Group (1) is 0, and that assigned to others is 4; contrasted with this, the minimum number assigned to others or

to self by Group (2) is 6. Passing on to the undesirable traits, we find the contrast between the two groups emerging more clearly. While Group (1) assigns almost equal number of undesirable traits, on the average, to itself and to others - the difference being only 0.16 - Group (2) assigns more of these traits to others than to itself - the difference being 2.44, which is also statistically significant as shown by Table 22, t being more than 2. Similarly, the highest number of undesirable traits acknowledged by the sensitive group, Group (2), is 17, as contrasted with 23 which is the maximum number of these traits applied to others. Group (1) shows no such difference. All these indications consistently point to the influence on the ratings made by the sensitive group, whether with regard to itself or to others, of its high sensitivity to the offensiveness of the undesirable traits, which determines the group to overestimate others on these traits and underestimate itself. This influence seems to be evidently absent in the case of Group (1), as expected; the ratings made on the undesirable traits by this group are thoroughly balanced with respect to self and others, t being only 0.1 (Table 22). We may presume, therefore, that one's sensitivity to the offensiveness of certain personality traits functions in disturbing his judgments regarding self or others.

Table 22.

Difference Within Group N = 50				Difference Between Groups Group (1) - Group (2) N = 50				
Des. Other - Des. Self		Undes. Other - Undes. Self		Des. Self	Des. Others	Un- des. Self	Undes. Others	
Group (1)	Group (2)	Group (1)	Group (2)					
Obt. Diff.	2.76	1.76	-0.16	2.44	-1.64	-0.64	1.52	-1.08
S.E. Diff.	.93	.81	1.14	1.09	0.92	0.83	0.99	1.23
t	3	2.16	0.1	2.24	1.7	0.8	1.5	0.9

We further tried to determine the relation in each group between rating self and rating others on the desirable and undesirable traits. Table 23 gives the result of the Chi Sq. test of association.

Table 23.

	N = 50 Group (1)				N = 50 Group (2)			
	Chi Sq.	df	P	Sign	Chi Sq.	df	P	Sign
Des. Self: Des. Others	0.876	1	<.50>.30	+	1.865	1	<.20>.10	+
Des. Self: Undes. Others	0.215	1	<.70>.50	+	0.722	1	<.50>.30	-
Undes. Self: Undes. Others	9.744	1	<.005	+	2.006	1	<.20>.10	+
Undes. Self: Des. Others	2.012	1	<.20>.10	+	0.080	1	<.80>.70	+

We note in the above Table a high positive association in the non-sensitive group between assigning undesirable traits to themselves and to others. As compared to this, the sensitive group shows no significant association between any of the four variables.

We have presumed that the tendency to projection is expected to be revealed in our testing situation by a negative association between rating self and others on undesirable traits. Since the non-sensitive group shows, on the other hand, a highly significant positive association, we feel justified in inferring for this group a comparative freedom from projection. In other words, our result suggests that a person who is not very sensitive about the "offensiveness" of the undesirable traits is on the average uninfluenced by projection while judging oneself and others with regard to these traits. The sensitive group shows a definite tendency to ascribe more undesirable traits to others than to itself and on this account we may presume that this group is liable to projection. But the more conclusive test, the test of significance of association, does not yield a decisive evidence on this point.

We may summarise our study of projection in the following manner:-

Our subjects were asked to check themselves and also others on a list of desirable and undesirable trait names. They also checked another list against desirability, undesirability and reprehensibility.

We expected "projection" to be indicated among our subjects by a negative relation between checking self and checking others on undesirable traits.

The total group gave no evidence of projection.

We divided the total group into those possessing more insight and those having less insight on the ground of scoring in the upper and lower halves, respectively, of the distribution of intelligence test scores. Positive evidence of freedom from projection was found for the group possessing more insight. Minor indications of liability to projection were noted for the group having less insight. A "contrast formation" resulting in the (a) over-estimation of self, accompanied by under-estimation of others, and (b) under-estimation of self, accompanied by over-estimation of others, was indicated for this group, and not for the group possessing more insight, as suggested by Sears.

The total group was also divided into sensitive and non-sensitive on the basis of the high and low degrees of repugnance to the undesirable

traits. Positive evidence of freedom from projection was found for the non-sensitive group. Clear, but not very conclusive, indications of liability to projection were noted for the sensitive group.

Self-Other Ratio.

As we mentioned above, Allport has suggested that insight as a variable of personality can be determined by the ratio between what a person thinks he is and what others think he is. In other words, the degree to which his judgment on himself approximates to the judgment of others on him is the index of a person's insight.

In order to measure insight in terms of the "self-other ratio", we proposed to have our subjects rate themselves and five other persons of their class on the traits of "ascendance-submission", "self-confidence-self-consciousness", and "sociability-solitariness". Accordingly, we prepared a five-point rating scale for each of the three traits. To devise suitable descriptions corresponding to the various points on the scale, we referred to the accounts of those traits in the work of Allport,²⁰ Bernreuter,²¹ and Flanagan.²² For the purpose of scoring, we assigned numerical values to the five descriptive points, ranging from 1 to 5, the lowest value being attached to the favourable end of the

²⁰ Allport, G.W., "A test for ascendance-submission." Journ. Abnorm. Soc. Psychol., 1928, 23, pp. 118-136.

²¹ Bernreuter, R., "The theory and construction of personality inventory." Journ. Soc. Psychol., 1933, 4, pp. 387-405.

²² Flanagan, J.C., Factor Analysis in the Study of Personality, pp. 46-47.

scale and the highest to the unfavourable end. The rating scales along with the directions for rating are reproduced in Appendix IV.

As will be noted in the direction for rating, in our rating device we made a slight departure from the usual practice. We did not present to our subjects a fore-determined list of persons and asked them to rate each person against the given traits, for we felt that such ratings are often forced and arbitrary so that the rater sometimes fits a person under a description without really being in a position to rate him at all. To obviate this defect we asked our subjects to indicate five persons in their class whom they knew well enough to judge their character. These persons were not to be their friends, since "a good rater of other people must be well acquainted with the ratees, but not too intimate with them".²³ The names were to be put down at the top of the rating blank and the subjects had to rate them along with themselves on the five-point scale. We expected that given an opportunity to choose their own ratees from among those whom they could judge about with confidence, the raters would be in a position to offer a more dependable estimate in their ratings.

After the ratings had been made, the names of

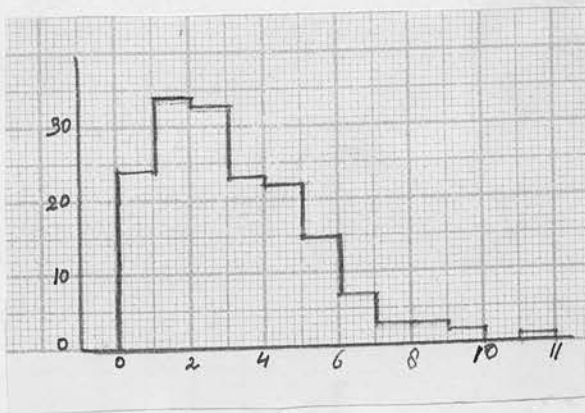
²³ Vernon, P.E., "Some characteristics of the good judges of personality." *Journ. Soc. Psychol.*, 4, 1933, pp. 43-57.

all persons who rated a given person were sorted out and ratings on the same person by a number of other persons were, thus, secured. The position determined for a person by the average rating of others on him was assumed to be his "true" position on the scale. For computing the average, we decided at first to use five ratings on **each** subject. But it transpired subsequently that many of our subjects were rated by none, their names having occurred to no other person; while some other persons were rated by nine or ten. In other words, we discovered quite a number of seclusive persons for whom we could secure no rating by others. Obviously such persons were useless for the purpose of computing the self-other ratio. Moreover among those who were rated by others, only a small percentage were rated by five or more persons, as indicated by Table 24. We were forced, therefore, to lower our standard from five to three ratings in computing the average. Out of the total number of 167 subjects, there were only 76 for whom we could obtain three or more ratings, the remaining 91 being rated by one or two persons only or by none. The following Table shows the frequency distribution of the number of ratings for each person in the group:-

Table 24.

Number of Ratings	Frequency		
	Female	Male	Both Sexes
11	1		1
10	0		0
9	2		2
8	3		3
7	3		3
6	5	2	7
5	13	2	15
4	19	3	22
3	18	5	23
2	21	12	33
1	18	16	34
0	14	10	24
N	117	50	167

The following histogram is plotted from the distribution of the total group.



The above distribution may be supposed to represent a continuum of sociability-seclusiveness,²⁴ if we presume that those who get the largest number of ratings, under the peculiar circumstance provided in our rating scheme, are the most sociable persons and those who fail to secure any rating are the most seclusive. But the term "sociability" has been found to be very ambiguous, as used in psychological literature, and some psychologists have felt the necessity of bringing out the various implications of sociability as separate personality variables. Therefore, only when we choose to define sociability in terms of the number of acquaintances of a person, can we maintain that a person reported by a larger number as their acquaintance, with a sufficient degree of intimacy to enable them to judge his character, excels others in the trait of sociability. Conversely, a person who is mentioned by none of his associates as their acquaintance falls in the class of the very seclusive. To verify this assumption, we compared with respect to each person the average position assigned to him on the sociability-solitariness scale and the number of persons by whom he was rated. The following Table shows that the association between the two variables is not highly significant, but it tends in the expected negative direction,

²⁴ Stagner, R., Psychology of Personality, p. 144.

i.e., a person occupying the higher position on the scale, and thus rated on the average as solitary, secures a smaller number of ratings than the person occupying a lower position, and thus rated sociable:-

Table 25.

N 75	Chi ²	df	P	Sign
No. Ratings: Av. Rating	2.573	1	<.10>.05	-

The following Table shows for the three rating scales the mean self-rating score and the mean others-rating score made by the subjects who were rated by three associates:-

Table 26.

	Female				Male			
	N	Self	Others	Diff.	N	Self	Others	Diff.
1. Ascend- ance - Submission	64	2.74	2.79	0.05	11	2.73	3.07	0.34
2. Self-con- fidence - Self-con- sciousness	63	3.21	2.54	0.67	11	3.09	2.77	0.32
3. Socia- bility - Solitari- ness	64	2.33	2.35	0.02	11	2.35	2.45	0.09

The above Table represents the arithmetical mean. It was not considered worth while to compute the standard deviations and the measures of significance

of difference, since the range of the scores was very narrow. It will be noted that the average ratings on ascendance-submission and self-confidence - self-consciousness approximate to the middle value, i.e., the third position, on the scale for both sexes, while the average rating on sociability-solitariness lies nearer to the second position. Further, the female group shows the tendency to rate itself and also others on ascendance-submission and sociability-solitariness as falling within the favourable halves of the scales. The male group manifests this tendency only in respect of sociability-solitariness, and rates itself lower than others on ascendance-submission, i.e., as more ascendant. The difference between the two sexes on "ascendance-submission" is, perhaps, due to the greater social emphasis put on "ascendance" as characteristic of masculinity and the consequent over-rating of itself by the male group on this quality. We find the reverse of this in the case of self-confidence - self-consciousness, where both sexes tend to underrate themselves, i.e., judge themselves as more self-conscious, in comparison to others.

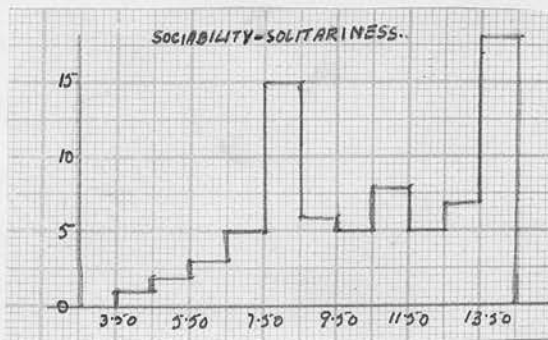
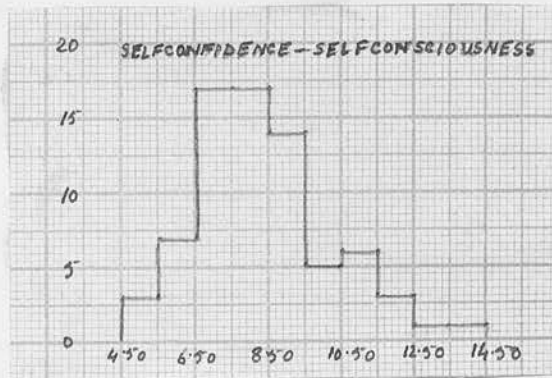
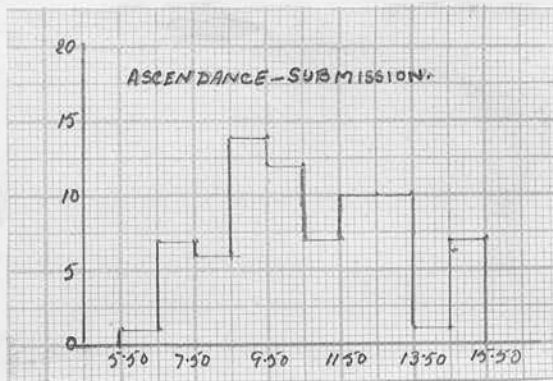
We computed the self-other ratio, as a measure of insight, for each of the 76 subjects - 65 women and 11 men, and, in order to avoid fractional scores, multiplied it by 10. One subject had omitted to rate himself on ascendance-submission and sociability-

solitariness, and two subjects had done so on self-confidence - self-consciousness. Hence we could compute the ratios for 75 subjects in two variables and of 74 in one. The following Table gives the frequency distribution of the self-other ratios for the total group, the male group being too small to merit separate treatment:-

Table 27.

Ascendance - Submission		Self-confidence - Self-consciousness		Sociability - Solitariness	
Self-other Ratio 1	Fre- quency	Self-other Ratio 2	Fre- quency	Self-other Ratio 3	Fre- quency
14.50-	7	13.50-	1	13.50-	18
13.50-14.49	1	12.50-13.49	1	12.50-13.49	7
12.50-13.49	10	11.50-12.49	3	11.50-12.49	5
11.50-12.49	10	10.50-11.49	6	10.50-11.49	8
10.50-11.49	7	9.50- 9.49	5	9.50-10.49	5
9.50-10.49	12	8.50- 8.49	14	8.50- 9.49	6
8.50- 9.49	14	7.50- 7.49	17	7.50- 8.49	15
7.50- 8.49	6	6.50- 6.49	17	6.50- 7.49	5
6.50- 7.49	7	5.50- 5.49	7	5.50- 6.49	3
5.50- 6.49	1	4.50- 4.49	3	4.50- 5.49	2
				3.50- 4.49	1
N	75	N	74	N	75
Mean=10.60, Med. = 10.28		Mean = 8.33, Med. = 8.08		Mean = 10.42, Med. = 10.55	

The following histograms are plotted for the above distributions.



Since the above sets of ratios obtained from the ratings on the three scales indicate in each case the same variable, viz., insight as indicated by the ratio between self-rating and others-rating, a fairly high agreement between them is expected. The following Table shows the result of the Chi^2 test of association:-

Table 28.

Sets of Measures Compared	N-74	Chi ²	df	Significance Level or P	Sign
1 : 2		6.227	1	<.02>.01	+
1 : 3		2.333	1	<.20>.10	+
2 : 3		0.218	1	<.70>.50	+

Table 28 shows a significant relation between the first and the second set of ratios, namely, those obtained by the self-other ratings on ascendance-submission and self-confidence - self-consciousness. The relation is also positive. The third set of ratios, yielded by the self-other ratings on sociability-solitariness, does not seem to be significantly associated either with the first or the second. Perhaps, this discrepancy may be due to the fact that this trait, viz., sociability-solitariness, is not amenable to accurate assessment by rating. This might also have made the ratios calculated from the ratings far from reliable. As Hollingworth²⁵ has observed, the ability to form an accurate estimate of oneself or of others does not vary only from individual to individual but also from trait to trait. In other words, some traits can be more accurately judged about than others. Our presumption is borne out, firstly, by the fact that the average self and others' ratings on the trait of sociability-solitari-

²⁵ Hollingworth, l. Op. cit., p. 56 and p. 79.

ness shows a sharp departure from the middle value of the scale. The average value, computed from the pooling of the individual ratings, is expected to approximate to the middle value or the third position on the scale. We find this to be true of the average values in the ascendance-submission and self-confidence - self-consciousness scales. Contrary to this, the average value falls near to the second position on the sociability-solitariness scale (Table 26, p. 184). Secondly, the distribution of the ratios derived from the self-other ratings on this scale is extremely irregular. Even apart from these considerations, our results in general are far from conclusive; our data are rather scanty, and, what is more important, our "true" measure, depending as it does upon three ratings only, can be hardly representative of the actual traits of the persons rated. Above all, the concept of a "true" measure determinable by rating is open to grave suspicion and extremely inconsistent with the methodological framework which we have tried to work under in other parts of our investigation.

In order to examine how far the "self-other" ratio really furnished us with a measure of insight, we compared it with the scores on Intelligence Test 33. We have noted that the self-other ratio is presumed to measure insight in terms of the distance

between the position a person assigns to himself on a rating scale and the position others ascribe to him on the same scale. It follows, then, that the wider the gulf between the two positions the less insightful the person, and the narrower the gulf, the more insightful he is. Rendered in terms of ratio, the more insightful person would be one whose self-other ratio borders on unity, or, with reference to our scoring method, approximates to 10. Since the middle fifty per cent. of the distribution of the obtained ratios would be nearer to this value, we assumed it to represent the area of insight; the upper and lower quartiles of the distribution, representing the extreme deviants of the ratios from the theoretical middle value, we took to cover the area of "lack of insight". It is important to note that according to this assumption the less insightful group would comprise persons who overrate themselves, i.e., whose self-rating exceeds others' rating on them, as well as those who underrate themselves, i.e., whose self-rating falls below others' rating. The more insightful group, on the other hand, would consist of those persons whose self-ratings converge with others' ratings upon them. If we divided the total group on this basis into the more insightful and the less insightful, then, intelligence being another measure of insight, we expected to get among the more insightful group a larger proportion of

persons scoring high on intelligence test as compared to the less insightful group. If we further divided the group as: (1) those scoring in the upper half of the distribution of intelligence test scores and (2) those scoring in the lower half, we ultimately get four groups: (a) more intelligent and more insightful, (b) more intelligent and less insightful, (c) less intelligent and more insightful and (d) less intelligent and less insightful. The following Tables, condensed from a 3 x 2 contingency table, show the various proportions of a group of 57 male and female subjects falling in the four sub-groups, with respect to each of the three rating scales:-

Table 29(a).

Ratio Self-Other 1	Intelligence				
	Upper Half		Lower Half		
More Insightful (Middle 50%)	13	23%	17	30%	30
Less Insightful (Upper and Lower Quartiles)	16	28%	11	19%	27
N = 57	29		28		57

Table 29(b).

Ratio Self-Other 2	Intelligence				
	Upper Half		Lower Half		
More Insightful (Middle 50%)	10	17%	18	32%	28
Less Insightful (Upper and Lower Quartiles)	19	33%	10	17%	29
N = 57	29		28		57

Table 29(c).

Ratio Self-Other 3	Intelligence				
	Upper Half		Lower Half		
More Insightful (Middle 50%)	13	23%	14	25%	27
Less Insightful (Upper and Lower Quartiles)	16	28%	14	25%	30
N = 57	29		28		57

According to our expectation, there should be a larger proportion in the upper left cells of the Tables as compared to the upper right ones; and similarly, a larger proportion in the lower right cells than in the lower left. But our results are just the reverse, so that in Tables 13(a) and 13(b) we find larger proportion of the more insightful persons among the less intelligent group and of the less insightful persons in the more intelligent group. Table 29(c) shows an about equal proportion in all the four sub-groups, which also is contrary to our

expectation. We feel called upon to conclude, therefore, that our measure of insight as determined by the ratio between self-rating and rating by others did not lead to a positive result. We have already expressed our suspicion regarding the efficacy of this measure (p.189), since the "true" estimate of a person's position on a rating scale is likely to be far from determinable by the average of three ratings only, apart from our methodological disfavour for the concept of a "true" measure based on expression of opinion on personality. Nevertheless, the significant association between the first and second sets of ratios (Table 27) which is also reflected in the similarity of the findings represented in Tables 29(a) and 29(b), suggests that the ratings used in computing the ratios were not determined altogether by random unsystematic influences, but were governed by some underlying systematic factor, which we could not succeed to fathom in this study.

Tendency to Compensation.

We have presumed that the tendency to imaginative compensation is one of the factors which bring about distortion of questionnaire responses (p III).

In order to explore this factor we used three kinds of measurements: (i) Self-rating on abilities,

(ii) Self-rating on desirable trait-names, (iii)

Expression of interest in occupations of high social standing. The first consisted of statements concerning those abilities and talents the possession of which contributes to one's sense of personal value and enhancement of social esteem. The second involved names of personality traits of diverse character which are given social approval and acceptance. The

materials used in the third were names of occupations which receive the stamp of social prestige and are assigned high status. A separate account of each type of measurement is presented which is followed

by the determination of its relation to the intelligence test scores. At the end is given the result of

the Chi Square Test of association between the measures under consideration, and an attempt is made at interpretation of the indicated relationships.

Self-Rating on Abilities.

The materials for this measurement consisted of twenty items related to abilities and personal prowess, taken from Part VIII of the Strong Vocational

Interest Blank. The subjects were required to rate themselves on each item by checking against 'Yes', 'No' or '?' as the case may be (Appendix V). 163 subjects, 119 women and 44 men took this test. The following Table shows the frequency and percentage of checkings on 'Yes', 'No' and '?' in respect of each item:-

Table 30.

Item	Yes				No				?			
	Fre- quency		Per- centage		Fre- quency		Per- centage		Fre- quency		Per- centage	
	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male
1	13	20	29.6	16.9	16	57	36.4	47.9	14	39	31.8	32.8
2	25	45	56.8	37.8	15	66	34.1	55.5	4	8	9.1	6.7
3	19	61	43.2	51.3	17	32	38.6	26.9	8	25	18.2	21.0
4	15	45	34.1	37.8	13	40	29.6	33.6	16	32	36.4	26.9
5	12	23	27.3	19.3	20	52	45.4	43.7	12	44	27.3	37.0
6	13	14	29.6	11.8	22	80	50.0	67.2	8	25	18.2	21.0
7	24	70	54.6	58.8	12	33	27.3	27.7	8	16	18.2	13.4
8	15	21	34.1	17.6	22	73	50.0	61.3	7	25	15.9	21.0
9	36	89	81.8	74.8	0	6	0	5.4	8	23	18.2	19.3
10	35	93	79.6	78.1	3	6	6.8	5.4	6	18	13.6	15.1
11	30	80	68.2	67.2	13	22	29.6	18.5	1	15	2.3	12.6
12	20	47	45.4	39.5	16	61	36.4	51.3	8	11	18.2	9.2
13	17	41	38.6	34.4	18	47	40.9	39.5	9	31	20.4	26.0
14	22	48	50.0	40.3	4	23	9.1	19.3	18	48	40.9	40.3
15	24	55	54.6	46.2	3	26	6.8	21.8	17	38	38.6	31.9

Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male	Male	Fe- male
16	19	42	43.2	35.3	9	38	20.4	31.9	16	37	36.4	31.1	
17	19	53	43.2	44.5	13	12	29.6	10.8	12	50	27.3	42.0	
18	20	39	45.4	32.8	21	65	47.7	54.6	3	15	6.8	12.6	
19	14	53	31.8	44.5	17	25	38.6	21.0	13	41	29.6	34.4	
20	23	70	52.3	58.8	17	38	38.6	31.9	4	11	9.1	9.2	
44 Men						119 Women							

Table 30 does not indicate any remarkable sex differences except for a few items. For example, more of the male group lay claim to initiative and leadership (Item 1), driving themselves steadily (Item 2), self-confidence (Item 6), mechanical ingenuity (Item 8), planning work in detail (Item 18), while more of the female group feel sure of their ability to 'smoothe out tangles and disagreement between people' (Item 19).

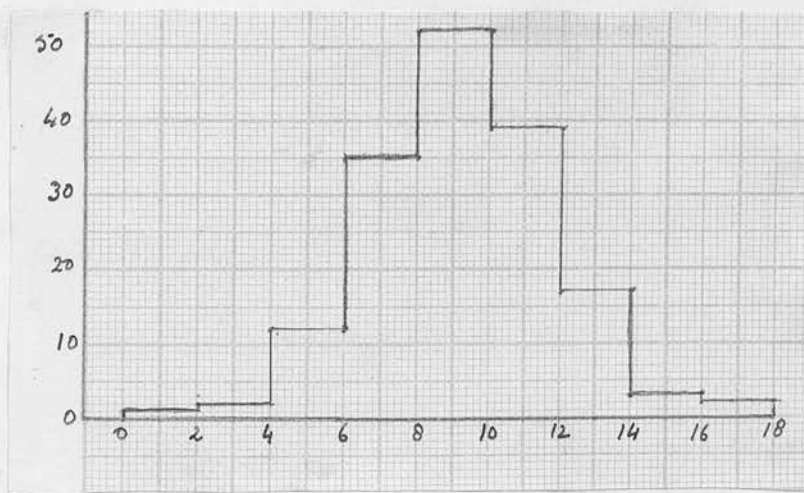
Table 31 shows the frequency distribution of checkings on 'yes':-

Table 31.

Score	Frequency		
	Male	Female	Total Group
16-17	1	1	2
14-15	2	1	3
12-13	5	12	17
10-11	12	27	39
8- 9	14	38	52

Score	Male	Female	Total Group
6-7	9	26	35
4-5	1	11	12
2-3		2	2
0-1		1	1
N	44	119	163
Mean	\bar{x} 9.45	\bar{x} 8.50	\bar{x} 8.76
	σ .38	σ .24	σ .21
σ	2.50	2.62	2.62

The following histogram is plotted from the distribution of the total group:-



There is no highly significant difference between the means of the two sexes and no significant difference between their standard deviations as indicated by Table 32:-

Table 32.

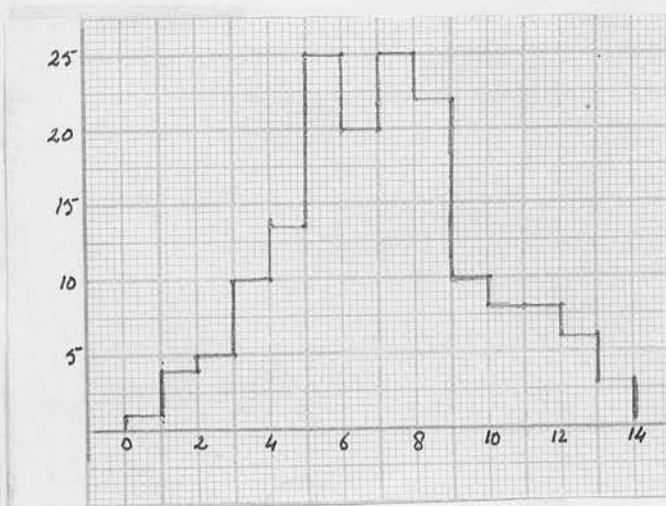
	Obt. Diff.	σ Diff.	t
Mean	0.95	0.45	2.1
S.D's	0.12	0.32	0.38

Table 33 shows the frequency distribution of checkings on 'No':-

Table 33.

Score	Frequency		
	Male	Female	Total Group
13	1	2	3
12	2	4	6
11	2	6	8
10	2	6	8
9	1	9	10
8	4	18	22
7	7	18	25
6	5	15	20
5	7	18	25
4	5	11	16
3	3	7	10
2	3	2	5
1	2	2	4
0		1	1
N	44	119	163
Mean	6.16	6.74	6.58
	\mp .45	\mp .24	\mp .22
σ	2.96	2.65	2.75

The following histogram is plotted from the distribution of the total group:-



The following Table shows the significance of the difference between mean checkings on 'yes' and mean checkings on 'no', for the male, female and the total groups:-

Table 34.

	Male	Female	Total Group
Obt. Diff.	3.29	1.76	2.18
σ Diff.	0.59	0.34	0.30
t	5.6	5.2	7.3

The difference is highly significant in every case, which clearly indicates the tendency of the group to overrate itself on abilities, and supports our hypothesis that the ratings are not determined merely by objective evaluation of one's capabilities and tact, but also fulfil, for some subjects, the demand for imaginative compensation. Murray reports similar results from his use of the same type of material.¹

The following Table shows lack of significant

¹ Murray, H.A., Explorations in Personality, p. 438.

association between self-rating on abilities and scores in Test 33:-

Table 35.

N	Chi Sq.	df	P	Sign
120	0.132	1	<.80>.70	-

A comparison between the sub-group falling in the upper half of the distribution of intelligence test scores and that falling in the lower half, showed no difference between their mean ratings on abilities, as indicated by the Frequency Distribution Tables for the sub-groups (Appendix D). We may presume, therefore, that intelligence played no part in the ratings. This was also expected, firstly, because few of the items involve superior intellectual functions; and, secondly, because the need for compensation may not arise necessarily from a sense of inferiority in the intellectual field.

Our result seems at first to be inconsistent with the finding reported by Wrenn, Ferguson and Kennedy.¹ These authors compared the checkings on the same items as we used for the group falling in the upper 5% and the group falling in the lower 15% of the distribution of intelligence test scores.

¹ Wrenn, C.G., Ferguson, L.W., and Kennedy, J.L., "Intelligence Level and Personality", Journ. Soc. Psychol., 7, 1936, pp. 301-308.

They found that "the critical ratio between the average number of checks in the 'Yes' column for the inferior male group and for the superior male group was 8.3. In other words, there was a well-defined tendency for the members of the inferior group to check more in the 'Yes' column than did the members of the superior group, thereby expressing a much greater confidence in their own ability". They further add "this is true only for the men students". But we find that there is no real discrepancy between the results reported by these authors and our own findings. Firstly, because they compared the extreme groups and consequently it may be argued that the inferior group made more checkings on the average because they arbitrarily checked majority of the first suggested answers (Yes) rather than considered over the alternative choices. Secondly, because of the very small number of our male group having scores in Test 33 also, further sub-division of the group was not considered worth while and, consequently, our result affords no verification of the finding of Wrenn, etc., which, as reported, is true only of the men students.

Self-Rating on Desirable Trait-Names.

The tendency to rate oneself higher on desirable trait-names has been consistently revealed in several investigations and interpreted as expression of the need for 'social approval', for making 'flattering responses', for putting up a 'favourable picture of oneself', and so on. We, consequently, presumed this measure to be a suitable index of the tendency to compensation and prepared a list of trait names, List 3, involving both desirable and undesirable characteristics (Appendix VI). The list originally contained 50 items. We selected, out of these, 15 trait names that appeared to possess definite desirable significance and 20 which seemed to have definite undesirable significance. These were again mixed up and presented to 25 post-graduate students of psychology to be rated as desirable or undesirable. The classification yielded by the ratings agreed very closely with that made by us.

158 subjects, 37 men and 121 women rated themselves on List 3. The following Table shows the frequency of self-rating on each of the 15 'desirable' items:-

Table 36.

Desirable Traits	Frequency		Percentage	
	Male	Female	Male	Female
1. Accommodating	30	102	81	84
2. Affable	20	81	54	67
3. Charitable	20	83	54	68
4. Conciliatory	16	58	43	48
5. Forgiving	21	79	57	65
6. Honest	31	106	84	88
7. Modest	14	49	38	40
8. Outspoken	13	53	35	44
9. Persevering	20	73	54	60
10. Philanthropic	8	45	22	37
11. Quick	16	46	43	38
12. Reasonable	28	89	76	74
13. Self-consistent	12	38	32	31
14. Self-sacrificing	7	30	19	25
15. Sympathetic	28	96	76	80

Table 36 shows no remarkable difference between the sexes.

The following Table shows the distribution of self-ratings on desirable traits:-

Table 37.

Score	Frequency		
	Male	Female	Total Group
14		4	4
13	1	3	4
12	2	9	11
11	5	15	20
10	3	19	22
9	2	16	18
8	6	12	18
7	4	16	20
6	7	8	15
5	2	9	11
4	2	4	6
3	2	1	3
2	1	1	2
1		4	4
N	37	121	158
Mean	7.68	8.50	8.30
	\bar{r} .45	\bar{r} .26	\bar{r} .23
σ	2.75	2.89	2.88

The following histogram is plotted from the frequency distribution of the total group:-

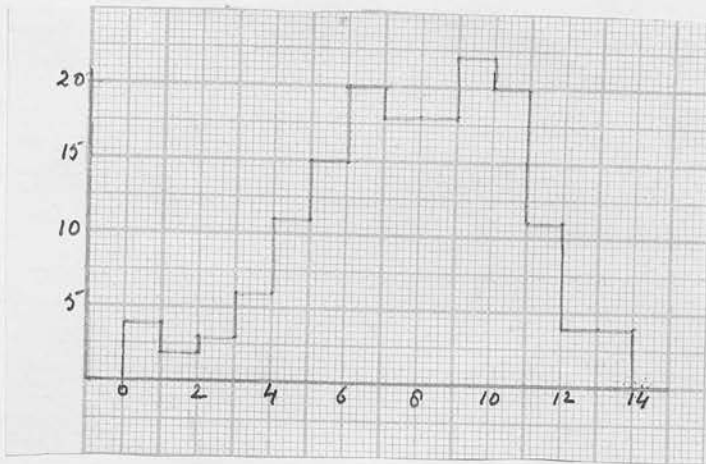


Table 38 shows that the differences between the means and standard deviations of the two sexes are not statistically significant.

Table 38.

	Obt. Diff.	S.E. Diff.	t
Means	0.82	0.52	1.6
S.D's	0.14	0.37	0.38

A comparison between self-ratings on desirable traits List 1 (p.142-143) and those of the present list, List 3, shows that there is very highly significant positive association between the two variables in spite of the dissimilarity between the component items of the two lists, as indicated by Table 39:-

Table 39.

N	Chi Sq.	df	P	Sign
120	38.641	1	<.001	+

Neither variable has a significant association with scores in intelligence test No. 33, as indicated by the following Table:-

Table 40.

	N	Chi Sq.	df	P	Sign
Des. Trait List 1	100	0.110	1	<.80>.70	+
Des. Trait List 3	116	0.136	1	<.80>.70	+

Comparison between the means of the sub-groups falling in the upper and lower halves, respectively, of the distribution of intelligence test scores also shows no significant difference for either variable as indicated in Table 41:-

Table 41.

	Obt. Diff.	S.E. Diff.	t
Des. Trait List 1	0.12	0.94	0.13
Des. Trait List 3	0.80	0.55	1.4

The frequency distribution for the two sub-groups are shown in Appendix E.

We can presume, as in the case of self-rating on abilities, that the difference in intelligence does not make for any variability in the tendency to assign desirable qualities to oneself.

Occupational Interest.

We presumed that the tendency to portray oneself in the favourable light would reveal itself also in the expression of one's interest in occupations possessing a high social standing. We prepared, accordingly, a list of occupations in respect of which our subjects were required to express their 'like', 'dislike' or 'indifference'. The occupations included in our list were selected from the lists made by Collins¹ and by Strong.² Since some occupations are meant only for men and some only for women, we prepared separate lists for the two sexes. The list for men comprised 56 occupations and the list for women 52 occupations. The two lists and the directions are reproduced in Appendix VII(a) and Appendix VII(b), respectively.

153 subjects, 111 women and 42 men, rated themselves on the above lists. Their responses were analysed in order to determine the frequency of the checkings under each of the three categories - like, dislike and indifferent - for each occupation. The frequencies, also converted into percentages, are shown in Appendix F (Tables 1 and 2).

The following Table shows for the female group the occupations: (1) which were liked by more than

¹ Collins, M., The list of occupations is reproduced in Allan Macdonald's Ph.D. Thesis, Edinburgh University, 1939, pp. 80-83.

² Strong, E.K., Jr., Vocational Interest of Blanks for Men and Women.

50% of the subjects and (2) those which were disliked by more than 50%, in rank order of frequency:-

Table 42.

Liked by more than 50%	Disliked by more than 50%
Musician	Factory-worker
Author	Cinema-attendant
Librarian	Waitress
{ Research-worker	Bank Clerk
{ Social-worker	Book-keeper
{ Dress Designer	Accountant
{ Psychologist	Shop-assistant
Doctor	Typist
{ Artist	Clerk
{ Book-seller	Film Star
Editor	Post Office-worker
Photographer	Telegraph-operator
Painter	
Broadcaster	
{ Dancer	
{ Florist	
Reporter	

We notice that the occupations which were more often liked by our subjects belonged mostly to the class of professions or highly skilled activities. On the other hand, most of the occupations that were more often disliked fell under the category of clerical, semi-skilled or unskilled jobs.

Table 43 shows for the male group the occupations (1) which were liked by more than 50 per cent. of the subjects and (2) those which were disliked by more than 50 per cent., arranged in order of frequency:-

Table 43.

Liked by more than 50%	Disliked by more than 50%
Author	Cinema-attendant
{ Musician	Clerk
{ Research-worker	Salesman
Psychologist	{ Tailor
{ Professor	{ Insurance Agent
{ Editor	Factory-worker
{ Scientist	Policeman
{ Artist	{ Clergyman
{ Photographer	{ Commercial Traveller
{ Broadcaster	{ Confectioner
{ Surgeon	{ Accountant
{ Aviator	{ Auctioneer
{ Doctor	{ Laboratory Assistant
{ Librarian	{ Civil Servant
{ Architect	
{ Cartoonist	
{ Reporter	
{ Social-worker	

Once again, we note that the occupations that belong to the class of professions or highly skilled work, and are thus attached greater social prestige,

were more often liked, while those coming under clerical, semi-skilled or unskilled jobs were more often disliked. The clergyman's occupation was more often disliked, which is consonant with the unpopularity of the church and the related vocations among modern youths. The Civil Service was also more often disliked, which is due to the fact that the name applies to a group of occupations with various ranks and denominations. Thus, Tables 42 and 43 indicate a general tendency for both the male and the female groups to express their interest in socially more 'desirable' occupations and dislike for socially less desirable occupations.

In order to determine which of the occupations were to be treated as of 'high' social standing and which as of 'low' social standing, we asked a control group of 30 women and 20 men students to rate each occupation as 'high', 'median', or 'low', with respect to the degree of social prestige generally attached to it (Appendix VIII). The frequency of the ratings under each category together with the percentage is given in Appendix G.

The following Table gives for the male group the lists of the occupations, which we finally selected as 'high' and 'low', respectively, on the basis of the ratings made by the control group. The frequency and percentage of the ratings are also shown against each occupation:-

Table 44.

High	Fre- quency		Per- centage		Low	Fre- quency		Per- centage	
	High	Low	High	Low		High	Low	High	Low
Author	11	1	55	5	Auctioneer	1	13	5	65
Architect	11	0	55	0	Builder	0	10	0	50
Army Officer	8	4	40	20	Carpenter	0	16	0	80
Clergyman	8	2	40	10	Cinema Attendant	0	20	0	100
Dentist	8	3	40	15	Clerk	1	14	5	70
Doctor	15	0	75	0	Commercial Traveller	0	13	0	65
Editor	12	1	60	5	Confect- ioner	1	12	5	60
Judge	20	0	100	0	Factory Worker	1	17	5	85
Lawyer	13	1	65	5	Insurance Agent	0	13	0	65
Musician	8	3	40	15	Laboratory Assistant	2	11	10	55
Poet	11	4	55	20	Painter	2	16	10	80
Professor	18	1	90	5	Photo- grapher	0	10	0	50
Research- worker	8	1	40	5	Policeman	1	13	5	65
Scientist	12	0	60	0	Sailor	4	12	20	60
Sculptor	9	3	45	15	Salesman	0	17	0	85
Surgeon	20	0	100	0	Tailor	0	14	0	70

Male Group N = 20.

As is evident from Table 44, occupations rated 'low' by 20 per cent. or less and 'high' by 40 per

cent. or more were treated as 'high', while occupations rated high by 20 per cent. or less and low by 50 per cent. or more were treated as 'low'. A comparison with Table 43 will show that eight or 50 per cent. of the occupations considered 'high' on the basis of rating were liked by more than 50 per cent. of our male subjects, while only one (clergyman) or 6 per cent. of such occupations was disliked by more than 50 per cent. of the subjects. On the other hand, ten or 60 per cent. of the occupations treated as 'low' were disliked by more than 50 per cent. of the subjects, while only one (photographer) or 6 per cent. of these was liked by more than 50 per cent. of the subjects. These differences reveal the general tendency for the group to show interest in the socially more desirable occupations and dislike for the socially less desirable ones.

The following Table gives for the female group the lists of occupations which were finally treated as 'high' and 'low', respectively, on the results of the ratings made by the control group. The frequency and the percentage of the ratings for each occupation are also shown:-

Table 45.

High	Fre- quency		Per- centage		Low	Fre- quency	Per- centage		
	High	Low	High	Low			High	Low	
Artist	24	0	80.00	0	Book- keeper	0	12	0	40.00
Author	26	0	86.66	0	Cinema Attend- ant	0	28	0	93.33
Broad- caster	17	0	56.66	0	Confect- ioner	0	19	0	63.33
Doctor	29	0	96.66	0	Clerk	0	18	0	60.00
Dress Designer	14	1	46.66	3.33	Cook	0	22	0	73.33
Editor	27	0	90.00	0	Dancer	1	14	3.33	46.66
Lawyer	28	0	93.33	0	Dress- maker	0	14	0	46.66
Musician	24	0	80.00	0	Factory Worker	0	28	0	93.33
Poetess	23	1	76.66	3.33	Florist	1	17	3.33	56.66
Opera Singer	25	0	83.33	0	Fruiterer	0	19	0	63.33
Politi- cian	26	1	86.66	3.33	Milliner	0	12	0	40.00
Professor	29	0	96.66	0	Post Office Worker	0	17	0	56.66
Psycho- logist	25	0	83.33	0	Shop Ass- istant	0	28	0	93.33
Research Worker	24	0	80.00	0	Telegraph Operator	0	18	0	60.33
Scientist	27	0	90.00	0	Typist	0	19	0	63.33
Surgeon	30	0	100.00	0	Waitress	0	30	0	100.00

Female Group N = 30.

Table 45 shows that occupations rated low by 3.33 per cent. or less and high by 46.66 per cent. or more were treated 'high', while those rated high by 3.33 per cent. or less and low by 40 per cent. or more were considered 'low'. A comparison with Table 43 shows that 9 or 54 per cent. of the occupations considered 'high' on the basis of rating by the control group were liked by more than 50 per cent. of our female subjects, while none of these was disliked by more than 50 per cent. On the other hand, 9 or 54 per cent. of the occupations rated 'low' were disliked by more than 50 per cent., while only 2 ('Dancer' and 'Florist'), i.e. 12 per cent. of these occupations, were liked by more than 50 per cent. of our female subjects. This result supports the tendency we have marked for the male group as well, namely, the general trend shown by the group to express interest in the socially more desirable and dislike for the socially less desirable occupations.

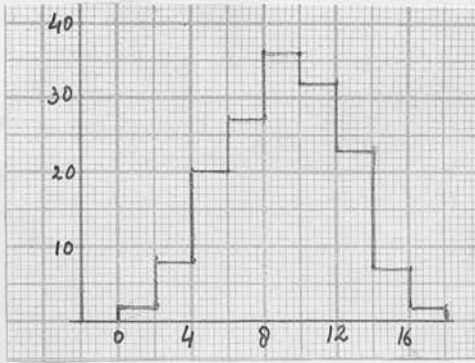
Having determined the lists of 'high' and 'low' occupations for the male and the female groups, we counted the total number of checkings against 'like' made by the two sexes in the two lists. We are presenting here the frequency distribution of the checkings on the 'higher' or more desirable occupations, leaving that on the 'lower' or less desirable occupations to be presented subsequently under the 'tendency to repudiation'. As will be seen in

Table 46, we have added the frequencies for the two sex groups to yield those for the total group. We feel justified in doing so in view of the statistically negligible differences between the means and the S.D's of the two sex groups, as indicated in Table 47:-

Table 46.

Score	Higher Occupations		
	Frequency		
	Male	Female	Total Group
16		2	2
14-15	3	4	7
12-13	4	19	23
10-11	10	22	32
8- 9	9	27	36
6- 7	9	18	27
4- 5	4	16	20
2- 3	1	7	8
0- 1	2		2
N	42	115	157
Mean	8.45	8.66	8.60
	± .52	± .31	± .26
σ	3.37	3.29	3.31

The following histogram is plotted from the frequency distribution for the total group:-



Though the lists of occupations contain some items which are different for the two sexes, we find, as also pointed out above, no significant difference between the means or S.D's of the two sexes, as shown by Table 47.

Table 47.

	Obt. Diff.	Diff.	t
Means	0.21	0.61	0.35
S.D's	0.08	0.43	0.19

Table 48 shows that there is no significant association between expressed interest for the 'higher' occupations and intelligence test scores:-

Table 48.

N	Chi ²	df	P	N
122	0.032	1	<.90>.80	+

A comparison between the checkings of those who score in the upper half of the distribution of intelligence test and of those who score in the lower half, shows

no significant difference between the means as indicated in Table 49. The frequency distribution of the two sub-groups is given in Appendix H.

Table 49.

Obt. Diff.	Diff.	t
0.02	0.57	.04

Thus, we find no association between expressed occupational interest and intelligence, so that we can not presume that the less intelligent show a greater liking for the more desirable occupations than the more intelligent.

We applied the Chi^2 test of association to determine the interrelationship of the measures we employed as indices of the tendency to imaginative compensation. The results are represented in Table 50.

Table 50.

Measures Compared	N	Chi^2	df	P	Sign
Ability vs Des. Trait ₁	112	7.247	1	<.005	+
Ability vs Des. Trait ₃	132	7.599	1	<.005	+
Ability vs Des. Occup.	133	2.921	1	<.10>.05	+

Measures Compared	N	Chi ²	df	p	Sign
Des. Trait ₁ vs Des. Trait ₃	120	38.641	1	<.001	+
Des. Trait ₁ vs Des. Occup.	117	0.066	1	<.80>.70	+
Des. Trait ₃ vs Des. Occup.	137	2.163	1	<.20>.10	+

Table 50 shows a highly significant association between self-rating on abilities, self-rating on desirable traits List 1, and self-rating on desirable traits List 3. Since the components of these measures involve disparate aspects of personality, without any underlying basis of connection between them as actual characteristics of individuals, our statistical finding regarding their relationship can not be accounted for if we suppose that the self-ratings made by our subjects represent their objective evaluations of themselves with regard to the actual possession or lack of possession of the traits and abilities concerned. The relationship can only be explained if we presume that the ratings made by some of our subjects were determined by their general tendency to 'imaginative compensation' which made them overrate themselves in all the three measures, since by so doing they could present to others as well as to themselves a more 'acceptable' picture of their personality. Beside the fact of

the highly significant association between these measures, the tendency to overrate themselves is evidenced also by the high self-ratings made by our subjects in regard to the three measures. As we have noted, our subjects showed on the average a greater tendency to affirm their possession of the abilities and accomplishments than to deny it (cf. p.199). Had they been uninfluenced by any factor other than the objective assessment of themselves, they should have, on the average, as often denied as affirmed their possession of those abilities. Similarly, we would note that in spite of the greater number of undesirable traits offered for self-rating, as compared to the desirable ones, the ratings in respect of the latter are, on the average, twice as large as those in the former, in case of Trait List 3, and about three times as large in case of Trait List 1, as indicated in the following Table:-

Table 51.

	Av. Self-rating	
	Desirable	Undesirable
Trait List ₃	8.30	3.92
Trait List ₁	16.62	5.97

Here again, the traits presented for self-rating, being of extremely diverse character, were as likely to be actually possessed by a person as not, and consequently an objective evaluation of oneself in

respect of them should have yielded a comparatively larger average for the group in the undesirable traits than the desirable traits. But the case is just the reverse.

Contrary to our expectation, Table 50 shows a uniform lack of significant association between the expression of interest in more desirable occupations and the three other measures of compensation. We feel justified in inferring, therefore, that expression of occupational interest is not influenced in the case of our subjects by the tendency to compensation. The reason is not far to seek. Our subjects belonged to a class of undergraduate students of the university. University education is a preparation for the professions and the highly skilled vocations. Hence if a group of university students express a liking for the socio-economically higher class of occupations, they do so not to fulfil their need for compensation, but because by virtue of their training, they are ear-marked for them and for no inferior class of jobs. The situation is different with respect to the other three variables. When a random sample of abilities, mostly non-scholastic, and of character traits of an extremely wide variety, are presented to these students, they are as likely to acknowledge them in themselves as not, since they may or may not be actually possessing them. But when we notice a wide variability among them with respect to their affirma-

tion of these abilities and traits as belonging to themselves, we feel called upon to presume the operation of some determinant of their judgment, other than their actual possession of the traits or abilities. When we notice, further, a significant relation between the affirmation of the abilities and that of the traits, which are very diverse in character, we find a reinforcement of our presumption regarding the operation of this additional determinant, or factor. But when from a list of occupations, of a wide variety, our subjects show greater interest in the socially more desirable ones, they do so because in virtue of their higher training they should have greater preference for them. Therefore, the expressed interest is determined by the objective factors provided by the environment and the higher training available to the students, and not by the tendency to compensation, for one seeks compensation, on the level of imagination and fantasy, in a position to which he has no title in reality. Only he builds castles in the air who can not build one on sand.

Summary and conclusion:- (1) Self-rating on abilities, (2) self-rating on desirable trait-names, and (3) expression of interest in occupations of high socio-economic status, were used as indices of the tendency to imaginative compensation; (4) self-rating on desirable trait-names, employed in our measurement

of projection, was also used.

A definite tendency to overrate oneself was clearly evidenced in respect of all the four variables.

Measures on all the variables showed a consistent lack of association with intelligence test scores. It was inferred that the tendency to imaginative compensation is not at work only in less intelligent persons as compared to the more intelligent, since the need for compensation may not be aroused merely by a relative inadequacy in the intellectual realm.

Highly significant association in the expected positive direction was found between (1), (2) and (4). It was presumed, therefore, that the ratings in these cases were not determined only by the objective appraisal of real abilities and traits. They were also influenced by the tendency to portray an acceptable picture of oneself, what we have decided to call the tendency to 'imaginative compensation'.

Expression of interest in occupations of high social standing showed no significant association with any of the other three variables. It was supposed, therefore, that the subjects expressed greater liking for the professions or highly skilled vocations, because, in virtue of their higher training and scholastic attainment, they had earned a title to an occupation of this class. Their expressed interests were not determined by the need for

imaginative compensation, but by their actual preferences for such occupations determined by opportunity and training.

Tendency to Repudiation.

The tendency to repudiation has been treated by us as another factor which is responsible for the falsification of questionnaire responses. To determine this factor we used four different types of measures: (a) self-rating on occasional lapses of conduct, (b) self-rating on undesirable trait-names, (c) self-rating on interest in occupations having a low social standing, and (d) self-rating on belief in superstitions. All of these variables were presumed to involve situations which expose the individual to the danger of loss of social prestige and lowering of self-esteem. They were considered, therefore, to be likely to call for, in defence, the operation of the tendency to repudiation or denial. A detailed description of each variable is given under a separate heading. The order of presentation is the same as adopted in our treatment of the measures of the tendency to compensation.

Self-Rating on Lapse of Conduct.

The items for this measure were taken from the Minnesota Multiphasic Personality Inventory.¹ The authors of the inventory have used these items as a check on the truthfulness of the respondents with regard to the rest of the inventory. Each question

¹ Hathaway, S.R., and McKinley, J.C., Manual for the Minnesota Multiphasic Personality Inventory.

relates to a very common laxity in every day conduct from which no one can, strictly speaking, claim perfect immunity. As the authors observe, "The items are all stated in a way that tends to make even the most socialized subject who answers honestly confess to deviations from what is usually considered socially desirable conduct." Apart from the special use they made of these items, they also suggest that the score in these items "may be of interest in its own right as a measure of a special personality trend". We, accordingly, included these items among our measures of the tendency to repudiation. The list of questions with direction for checking are reproduced in Appendix IX.

Table 52 shows for the two sexes and the total group the frequencies of checkings on 'true' and 'untrue', with respect to each item, together with the percentages of the checkings:-

Table 52.

37 Men. 122 Women.

	True						Untrue					
	Frequency			Percentage			Frequency			Percentage		
	M	F	T	M	F	T	M	F	T	M	F	T
1	25	61	86	67.6	50.0	54.1	8	46	54	21.6	33.6	34.0
2	32	93	125	86.5	76.2	78.6	2	19	21	5.4	13.9	13.2
3	36	114	150	97.3	93.4	94.3	1	5	6	2.7	3.6	3.8
4	31	112	143	83.8	91.8	89.9	4	7	11	10.8	5.1	6.9
5	11	30	41	29.7	24.6	25.8	18	76	94	48.6	55.5	59.1

	M	F	T	M	F	T	M	F	T	M	F	T
6	15	45	60	40.5	37.7	37.7	15	56	71	40.5	40.9	44.7
7	34	114	148	91.9	93.4	93.1	0	1	1	0	0.7	0.6
8	26	108	134	70.3	88.5	84.3	7	9	16	18.9	6.6	10.1
9	13	41	54	35.1	33.6	34.0	18	46	64	48.6	33.6	40.2
10	32	93	125	86.5	76.2	78.6	3	21	24	8.1	15.3	15.1
11	34	106	140	91.9	86.9	88.1	2	14	16	5.4	10.2	10.1
12	34	115	149	91.9	94.3	93.7	3	6	9	8.1	4.4	5.7
13	36	117	153	97.3	95.9	96.2	0	4	4	0	2.9	2.5
14	22	57	79	59.5	46.7	49.7	13	58	71	35.1	42.3	44.7
15	31	79	110	83.8	64.8	69.2	3	23	26	8.1	16.8	16.4

Table 52 shows that men confess more often than women to 'thinking things too bad to talk about (1)', 'not telling truth always (2)', 'laughing once in a while at a dirty joke (10)', 'having inferior table manners at home than when out in company (14)', and 'being disconcerted at losing a game (15)'; while women admit more often than men 'gossiping a little at times (8)', though the extent of the differences in terms of percentages is not large, ranging from 10.16% - 19.03%. The four items most often admitted by both sexes are the following, stated in rank order:-

(13) Once in a while I put off until tomorrow what I ought to do today.

(12) I do not read every editorial in the newspaper every day.

(3) I get angry sometimes.

(7) I do not like every one I know.

We note that each of these items refers to less consequential personal failings. The four items least often acknowledged by both sexes are the following, occupying the last four positions:-

(5) If I could get into a movie without paying and be sure I was not seen, I would probably do it.

(9) Sometimes at elections I vote for men about whom I know very little.

(6) I like to know some important people because it makes me feel important.

(14) My table manners are not quite as good at home as when I am out in company.

The total group seems to be more sensitive about these items than others because, perhaps, they involve a greater amount of social pressure.

The following Table shows the frequency distribution of the number of checkings on 'True':-

Table 53.

Score	Frequency		
	Male	Female	Total Group
15	1		1
14	4	4	8
13	1	19	20
12	11	16	27
11	9	27	36
10	7	23	30

	Male	Female	Total Group
9	1	12	13
8	0	12	12
7	1	6	7
6	1	2	3
5	1	1	2
N	37	122	159
Mean	11.14	10.53	10.67
	\bar{r} .34	\bar{r} .18	\bar{r} .16
σ	2.04	1.95	1.99

The following histogram is plotted from the frequency distribution for the total group:-

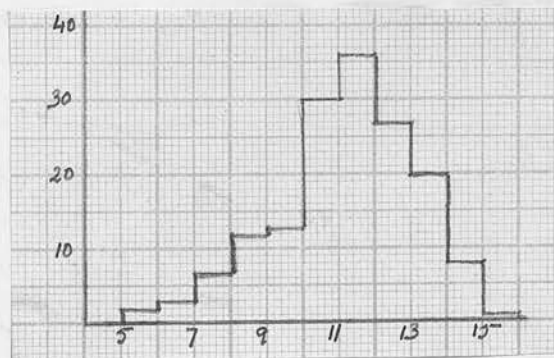


Table 54 shows that there is no significant difference between the means and S.D's of the two sexes:-

Table 54.

	Obt. Diff.	Diff.	t
Means	0.60	0.38	1.6
S.D's	0.095	0.27	0.4

Table 55 shows that there is no association between admission of personal failings and intelligence level.

Table 55.

N	Chi ²	df	P	Sign
119	0.288	1	<.70>.50	+

Comparison between the means of the sub-groups falling in upper and lower halves of the distribution of intelligence test scores also reveals lack of any highly significant difference as indicated in Table 56.

Table 56.

Obt. Diff.	Diff.	t
0.75	0.36	2.1

Thus, it does not seem very probable that less intelligent persons are more hesitant about admitting occasional lapses in conduct. Frequency distribution tables for the sub-groups are given in Appendix K.

Self-rating on Undesirable Trait-Names.

As has been noted above, we found 20 trait-names in List 3 that had definite 'undesirable' character (p.202). The following Table shows the frequency of self-rating on each of the 20 'undesirable' items:-

Table 57.

	158 Women		Frequency		Percentage	
	37 Men		Male	Female	Male	Female
1. Avoiding company			10	22	27	18
2. Deceitful			3	5	8	4
3. Dogmatic			6	35	16	29
4. Egoistic			12	42	32	35
5. Exacting			5	28	14	23
6. Excitable			10	66	27	54
7. Extortionate			0	1	0	1
8. Fitful			12	33	32	27
9. Hard-hearted			2	8	5	7
10. Indecisive			15	49	40	40
11. Malicious			0	2	0	2
12. Overbearing			1	8	3	7
13. Miserly			0	1	0	1
14. Pretentious			2	4	5	3
15. Self-distrusting			11	41	30	34
16. Sly			16	62	43	51
17. Sluggish			4	11	11	9
18. Stubborn			15	49	40	40
19. Submissive			4	15	11	12
20. Vindictive			2	7	5	6

Table 57 shows no remarkable sex differences. The traits of shyness, stubbornness, indecisiveness, egoism, self-distrust, receive the top rank ratings in both groups besides excitability in the female group and fitfulness in the male group. On the other hand, among the traits most often repudiated by both groups are: Miserliness, Extortion and Malice.

The following Table shows the distribution of self-ratings on the undesirable traits:-

Table 58.

Score	Frequency		
	Male	Female	Total Group
12		1	1
11		2	2
10		1	1
9	2	3	5
8	1	6	7
7	2	8	10
6	2	11	13
5	1	15	16
4	9	15	24
3	8	24	32
2	5	13	18
1	3	15	18
0	4	7	11
N	37	121	158
Mean	3.51	4.04	3.92
	\mp .38	\mp .24	\mp .20
σ	2.34	2.61	2.56

The following histogram is plotted from the distribution of the total group:-

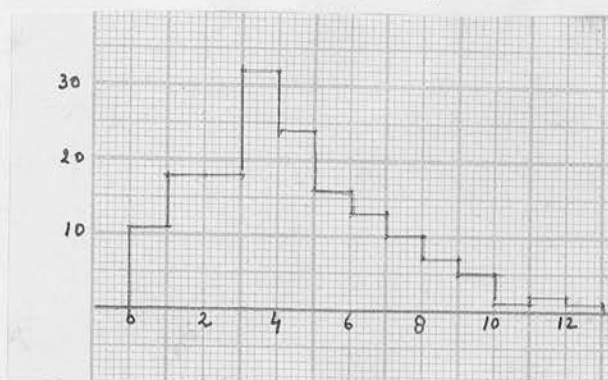


Table 59 shows that the differences between the means and the S.D.'s of the two sexes are not significant:-

Table 59.

	Obt. Diff.	Diff.	t
Means	0.53	0.45	1.2
S.D.'s	0.27	0.32	0.84

A comparison between self-ratings on undesirable traits of List 1 (p.144-46) and those of the present List (List 3), shows that there is very highly significant association between the two variables, in spite of the dissimilarity between the component items of the two lists:-

Table 60.

N	Chi ²	df	P	Sign
120	43.901	1	<.001	+

Neither variable has a significant association with scores in Intelligence Test No. 33, as indicated by

Table 61:-

Table 61.

	Chi ²	df	P	N	Sign
Undes. Trait List 1	1.448	1	<.30>.20	100	+
Undes. Trait List 3	3.452	1	<.10>.05	116	+

Comparison between the means of the sub-groups falling in upper and lower halves of the distribution of intelligence test scores also reveals lack of significant difference for either variable as indicated in Table 62:-

Table 62.

	Obt. Diff.	Diff.	t
Undes. Trait List 1	1.20	0.99	1.2
Undes. Trait List 3	0.45	0.50	0.9

The frequency distributions for the two sub-groups are given in Appendix L.

Self-rating on Interest in Occupations
of Low Social Standing.

We have given earlier (p.211) the lists of occupations for men and women, respectively, which we decided to treat, on the ground of rating by a control group, as having low social standing. The following Table shows the frequency distribution of checkings on 'Like' with respect to those occupations:-

Table 63.

Score	Frequency		
	Male	Female	Total Group
14-15		1	1
12-13		2	2
10-11	1	2	3
8-9	2	5	7
6-7	5	13	18
4-5	11	24	35
2-3	11	36	47
0-1	12	32	44
N	42	115	157
Mean	3.38	3.49	3.47
	\mp .39	\mp .27	\mp .22
σ	2.53	2.91	2.28

The following histogram is plotted from the distribution of the total group.

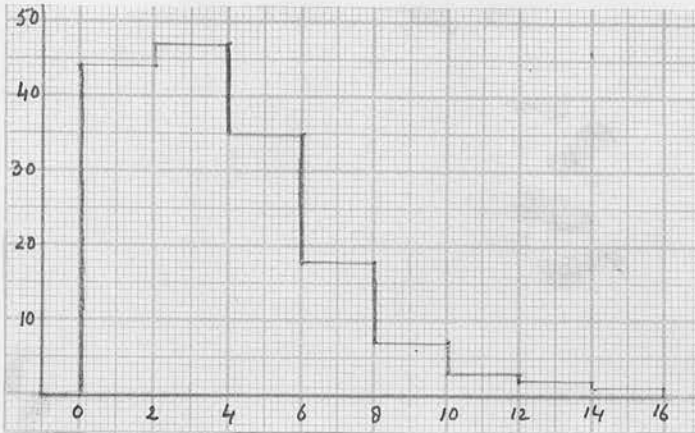


Table 64 shows no significant difference between the means and standard deviations of the two sexes. This fact gave us justification to treat the scores of the two sexes together under the total group:-

Table 64.

	Obt. Diff.	S.E. Diff.	t
Means	0.11	0.47	0.23
S.D's	0.38	0.34	1.1

Table 65 shows a significant negative relation between expressed interest in less desirable occupations and intelligence test scores:-

Table 65.

N	Chi Sq.	df	P	Sign
122	5.552	1	<.02>.01	-

A comparison between the means of the sub-groups that fall in the upper and lower halves of the distribution of intelligence test scores also shows highly significant difference, as indicated by Table 66.

The frequency distribution for the sub-groups is given in Appendix M.

Table 66.

Obt. Diff.	S.E. Diff.	t
1.50	0.50	3

The difference is on the debit side for the more intelligent sub-group, as indicated in the association test also. In other words, the less intelligent persons showed greater liking for occupations of lower social standing than the more intelligent. It is difficult to account for this. Perhaps, a sense of inferior ability, brought home in the various spheres of their academic life, led in the less intelligent subjects to an extension of interest in the callings which make less demands on ability. Bradley¹ has concluded from his review of various studies that "the higher the intelligence of the individual, the more likely he is to choose a professional vocation, and the lower the mental ability, the more likely he is to choose a vocation from the semi-skilled or unskilled groups". His own investigation resulted in the findings that "The higher the pupil's mental ability, the 'higher' is his choice of vocation." But Bradley's observations

¹ Bradley, W.A., Jr., "Correlates of vocational preference," Genetic Psychol. Monog., Nov. 1943, Vol. 28.

are concerned with occupational choice, and not with occupational interest. In fact, expressed occupational interest has been repeatedly found to have little relation to ability or even to measured occupational interest.² Our interpretation, suggested above, is, therefore, not supported by previous investigations. Perhaps, the negative association found by us between intelligence test scores and interest in socially less desirable occupations is indicative of a greater range of interest among the less intelligent persons which is more clearly brought out in respect of the activities which lie below the level of those for which they are specially preparing.

² Berdie, R.E., "Factors related to vocational interest," *Psychol. Bull.*, 1944, 41, pp. 137-158; Beddel, R., "The relationship between self-estimated and measured interest," *Journ. Apply Psychol.*, 1941, 25, pp. 59-66; and Moffie, D.J., "The validity of self-estimated interest," *Journ. Appl. Psychol.*, 1942, 26, pp. 606-613.

Self-rating on Superstition.

Primitiveness and superstition often go together. It is not meant that the more civilized groups are free from the influence of superstition. We intend only to emphasise that among the qualities which are manifested by an individual who is reared up in a civilized society, one of the most remarkable is his comparative freedom from beliefs which are not substantiated by or run counter to common day experiences. In other words, the capacity for 'reality testing' or objective evaluation of ideas and beliefs, does not only grow with the age of a child, but also with the progress of civilization; or, it is not only bound with ontogenetic, but also with phylogenetic development. It is not unreasonable, therefore, to expect of a civilized and enlightened adult to blush, or to rationalize, if another person points to his susceptibility to superstition. We presumed, accordingly, that though one may unwittingly manifest the influence of superstitions belief on his conduct and attitude, he would be more likely to repudiate than admit this influence. We thought, therefore, that if we could prepare a list of some common local superstitions and ask our subjects to express their attitude with regard to them, that would provide us with still another index of the variable we are considering in this section, namely, the tendency to repudiation. We expected

that subjects who are strongly under the influence of this tendency would show less readiness to confess to a belief in those superstitions and that this fact would be revealed by the relationship between the number of superstitious beliefs repudiated by them and their scores in the other measures we used as indices of the tendency to repudiation.

For our choice of the superstitions used by us, we are indebted to Dr. Wedeck. He had asked his subjects, in connection with the administration of some diagnostic tests of personality, to mention the superstitions which had influenced them from time to time. A wide variety of superstitions were indicated. From among those, Dr. Wedeck provided the writer a list of 10 superstitions which were most often reported. These are reproduced in Appendix X along with the direction. Dr. Wedeck's subjects had mentioned superstitions having identical content, in different languages. Hence, for using them for our purpose, we had to translate them in the most appropriate language. For this we are grateful to Dr. Collins who gave to each superstition the most suitable expression.

It will be noted in the 'direction' that the subjects had to choose between three alternative responses: 'Always', 'Sometimes' and 'Never' (Appendix X). Since 'always' and 'sometimes' were equivalent for our purpose, we summated the checkings

under these categories and treated them as the same. Table 67 shows for the male and the female groups the frequency of checkings on 'never' and 'sometimes or always', with respect to each item, together with the percentage of checkings:-

Table 67.

	Never				Always or Sometimes			
	Frequency		Percentage		Frequency		Percentage	
	Male	Female	Male	Female	Male	Female	Male	Female
1	39	79	97.50	70.54	1	33	2.50	29.46
2	29	37	72.50	33.04	11	75	27.50	66.96
3	32	76	80.00	67.86	8	35	20.00	31.25
4	35	90	87.50	80.36	5	22	12.50	19.64
5	37	73	92.50	65.18	3	39	7.50	34.82
6	39	101	97.50	90.18	1	11	2.50	9.82
7	37	103	92.50	91.96	3	9	7.50	8.04
8	30	86	75.00	76.79	10	26	25.00	23.21
9	38	110	95.00	98.21	2	2	5.00	1.79
10	23	55	57.50	49.11	17	57	42.50	50.89

N = 40 Men and 112 Women.

The above Table shows remarkable sex differences in respect of items 1, 2 and 5, that is, a relatively much larger percentage of women admit that they are 'bothered to see the new moon through glass' (1); that they expect 'good luck if a black cat crosses their path' (2), and that they are inclined 'to pick up a pin as it brings good luck' (5). The

largest percentage in either sex confesses to its uneasiness 'when required to walk under a ladder' (10). 20 per cent. of the male and 31.25 per cent. of the female think that 'it is unlucky to spill salt' (3), and 25 per cent. of the male and 23.21 per cent. of the female think that '13' at a table is unlucky' (8). On the whole the female group admits more often the influence of superstitions than the male, perhaps, because of the greater credulity and suggestibility of women, and, conversely, the conventional attribution of more of the critical faculties to man. We can not decide at this stage how far the denial of the influence is factual and how far it is a self-defence, for it may be true as a matter of fact that women are more given to superstitious beliefs than men, or that men have to put up a stronger defence because being superstitious is socially more uncomplimentary to them than to women.

The following Table gives the frequency distribution of checkings against 'never' for the two sexes and the total group:-

Table 68.

Score	Frequency		
	Male	Female	Total Group
10	15	21	36
9	8	15	23
8	8	21	29
7	5	16	21
6	1	16	17
5	2	9	11
4	0	6	6
3	0	6	6
2	1	1	2
1		0	0
0		1	1
N	40	112	152
Mean	8.48	7.23	7.56
	\mp .28	\mp .21	\mp .18
σ	1.75	2.20	2.16

The following histogram represents the distribution for the total group:-

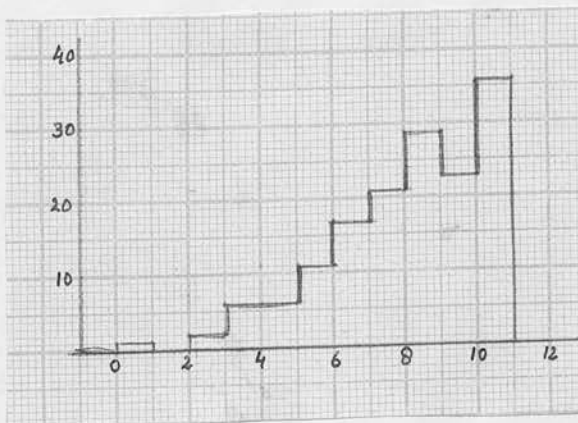


Table 69.

	Obt. Diff.	S.E. Diff.	t
Means	1.25	.35	3.6
S.D's	0.45	.24	1.9

Table 69 shows that the difference between the means of the two sexes is highly significant, the female groups admits susceptibility to more superstitions than the male group. There is no significant difference between the standard deviations for the two groups. In view of the highly significant difference between the means of the two sexes, we did not think it proper to combine them under one total group for the purpose of comparison with the other variables. We have accordingly treated them separately, using only the female group, as the number comprising the male group was rather small.

The following Table shows no significant relation between intelligence test scores and denial of belief in superstition.

Table 70.

N	Chi Sq.	df	P	Sign
85	2.580	1	<.20>.10	-

85 Women.

Comparison between those who scored in the upper half of the distribution of intelligence test and those who scored in the lower half, shows no significant

difference between the mean checkings on 'never', as shown in Table 80.

Table 80.

Obt. Diff.	S.E. Diff.	t
0.98	0.52	1.9

Table 81 gives the result of the Chi^2 test of association used to determine the mutual relationship of the measures employed by us as indices of the tendency to repudiation:-

Table 81.

Measures Compared	N	Chi Sq.	df	P	Sign
Conduct-Lapse vs Undes. Trait ₁	119	1.033	1	<.50>.30	+
Conduct-Lapse vs Undes. Trait ₃	151	2.834	1	<.10>.05	+
Conduct-Lapse vs Int. in 'Low' Occ.	135	1.691	1	<.20>.10	+
Conduct-Lapse vs Superstition	103	1.142	1	<.30>.20	-
Undes. Trait ₁ vs Undes. Trait ₃	120	43.901	1	<.001	+
Undes. Trait ₁ vs 'Low' Occupation	118	0.788	1	<.50>.30	-
Undes. Trait ₁ vs Superstition	86	0.019	1	<.90>.80	-
Undes. Trait ₃ vs 'Low' Occupation	137	0.199	1	<.70>.50	-
Undes. Trait ₃ vs Superstition	104	2.476	1	<.20>.10	-
'Low' Occup. vs Superstition	112	0.117	1	<.80>.70	+

Table 81 shows a highly significant positive association between self-rating on undesirable trait list 1 and self-rating on undesirable trait list 3. In other words, persons who underrate themselves on trait list 1, also underrate themselves on trait list 3. The association may also suggest that those who overrate themselves on list 1 also overrate themselves on list 3. But since the general tendency to underrate oneself on undesirable traits has been clearly revealed by the large difference between the average self-ratings on the undesirable traits and the average self-ratings on the desirable traits (p. 219), the association is more likely due to underrating on both lists, than to overrating. The association can not be interpreted except on the assumption that the self-ratings are not determined merely by objective evaluation of one's traits but also by the tendency to repudiation which influences some subjects to underrate themselves on both lists, for the components of the two lists are entirely dissimilar in content.

Table 81 shows that none of the three other measures, viz. self-rating on conduct-lapse, self-rating on superstitions, or self-rating on interest in 'lower' occupations, has significant association with any other measure. This may be interpreted on the ground that either these measures are not suitable for revealing the tendency to repudiation

among our subjects, or our hypothesis regarding the existence of such a tendency has no basis in fact. The second possibility may be set aside in view of the very high positive association between self-rating on undesirable traits List 1 and self-rating on undesirable traits List 3. Our conclusion is supported by numerous other investigations also to some of which we have already referred. These consistently point in the direction of the general tendency to underrate oneself on undesirable traits, which can be treated as another expression for the tendency to withhold the admission of these traits - the tendency to repudiation.

The first possibility, namely, the unsuitability of these measures to indicate the tendency to repudiation seems, on closer scrutiny, to be strongly plausible. Turning to self-rating on lapses of conduct, we notice that the items used involve such common failings that a highly sophisticated and enlightened group like our subjects could not be easily motivated to deny them. Accordingly, we find that majority of the items were checked as 'True', by most of our subjects and 'Untrue' by very few of them. Thus, Table 52 shows that 10 out of the 15 items have been denied only by 16.4 per cent. or less (p.225-26). Quite obviously these items have little to contribute to the variance of the total scores made by our subjects. And since, these form two-thirds of the

total number of items, a comparison of the total scores with scores in any other variable is under the circumstances very unlikely to show a significant relationship.

The same is true of the self-ratings on superstitions. We find that our subjects consisted of a highly enlightened group of psychology students who were much more likely to be unaffected by superstitious belief than to be influenced by them. Their denial of susceptibility to superstition may have been actuated by fact than by any emotional consideration. That being so, the self-ratings could not serve as a suitable measure for the tendency to repudiation. Only if the subjects were actually influenced by the superstitions but refused to admit this, could the self-ratings indicate the operation of the tendency. Our assumption that the self-ratings were based largely on fact is supported by the highly significant difference between the average ratings of the two sexes which is shown only in respect of this variable. Women being in fact more liable to superstitious beliefs than men, admit, accordingly, a larger number of these than men.

Expression of interest in occupations of low social standing also provided no suitable situation for evoking the tendency to repudiation in our subjects. As the instruction for rating will show (Appendix VIII (a) and VII (b)), we asked our subjects

to indicate their like, dislike or indifference with regard to the activity involved in the occupations concerned, disregarding the possibility of their taking them up. In other words, we explicitly instructed them not to indicate their occupational choices, but interest in the sort of activity comprising an occupation. Hence, when, working under this set, some subjects expressed greater liking for the 'lower' occupations than others, this did not amount to their confession of something unacceptable in them, as was the case with the self-rating on undesirable traits. It only showed the extension of their interest beyond those lines of activities for which they were preparing themselves. That the interest might have been determined by 'curiosity', or by the association of the occupation concerned with a hobby, or any other trivial matter, is shown by the fact that among the 'lower' occupations 'photographer' was liked by more than fifty per cent. of our male subjects, and 'dancer' and 'florist' were liked by more than fifty per cent. of our female subjects. All the three involve highly interesting activities, though as occupations they may stand on a lower level.

It seems reasonable, on above considerations, to conclude that neither of the three measures, namely, self-rating on conduct-lapse, self-rating on superstitions and interest in 'lower' occupations, was sufficiently potent to provoke, for one reason or

other, the tendency to repudiation in our subjects. The ratings are then not to be supposed as determined by this tendency and that is why they fail to show a significant relationship to any other measure.

Summary and conclusion:- (1) Self-rating on undesirable traits, List 1; (2) Self-rating on undesirable traits, List 3; (3) Self-rating on common lapses of conduct; (4) Self-rating on superstitions; and (5) Interest in occupations of low social standing, were used as indices of the tendency to repudiation.

Highly significant positive association was found between the first two. It was concluded that the ratings were not determined merely by objective evaluation of personal characteristics, but also by the tendency to repudiation as a defence against lowering of self-esteem.

No statistically significant association was found between the last three variables. An examination of the contents of the measures showed that they were unfit to evoke the looked for tendency in our subjects. They could be used with advantage on a random sample of less sophisticated persons.

There was no significant relationship between intelligence test scores and the other measures, except for interest in the 'lower' occupations. The latter could not be successfully interpreted.

CHAPTER 5.

FACTOR ANALYSIS.

In applying the factorial method of analysis, it is necessary that the same group of subjects should have taken all the tests. We found that 89 subjects had taken all of our tests. Of these we left out the last four to keep the number at 85 - 62 women and 23 men. Since the distributions of scores in some of our tests were badly skewed and irregular (p.125) we preferred to calculate Tetrachoric correlations, rather than using the Product Moment method.¹ In computing tetrachoric correlations we used Thurstone's diagrams.² Table 82 shows the t_r between the scores of the 85 subjects in eleven tests. We did not include the 'superstition test' scores, since the latter showed highly significant difference between the means of the two sexes. Neither did we include the 'self-others ratios' (p.186) as the number there was much smaller. Correlation co-efficients indicating significant association (5% level) according to the Chi² test are marked with an asterisk in Table 82.

-
1. Vernon, P.E. Notes on Statistical Methods in Common Use in Vocational and Educational Research, III, Correlation Methods, para. 40.
 2. Thurstone, L.L., Chesire, L., Saffir, M., Computing Diagrams for the Tetrachoric correlation co-efficient.

TABLE 82.

	1	2	3	4	5	6	7	8	9	10	11
1. Intelligence Test.		-.100	.116	-.070	-.500	.000	-.070	.186	-.105	-.160	.274
2. Abilities.	-.100		-.100	.279	.030	.434	-.040	-.158	-.198	.428	-.255
3. Conduct Lapse.	.116	-.100		.045	.300	-.165	-.026	.305	.000	.048	.150
4. High Occupation.	-.070	.279	.045		.243	.168	.190	.435	.158	.281	.150
5. Low Occupation.	-.500	0.30	.300	.243		.166	.000	.166	.000	-.245	-.165
6. Des. Self 1.	.000	.434	-.165	.168	.166		.221	.221	-.221	.070	.736
7. Des. other.	-.070	-.040	-.026	.190	.000	.221		.195	-.100	.344	.400
8. Undes. self 1.	.186	-.158	.305	.435	-.245	-.221	.195		.463	-.221	.804
9. Undes. other.	-.105	-.198	.000	.158	-.163	.070	-.100	.463		.195	.185
10. Des. self 3.	-.160	.428	.048	.281	.339	.736	.344	-.221	.195		.000
11. Undes. self 3.	.274	-.255	.150	.150	-.165	-.244	.400	.804	.185	.000	

1. Vernon P.E. Notes on Statistical Methods in common uses in Vocational & Educational Research.
 III. Correlation Methods. Para. 40.

2. Thurstone, L. L., Chesire, L., Saffir, M., Computing Diagrams for the Tetrachoric correlation coefficient.

(The above refs. apply to page 250.)

In analysing the above correlation table, we applied Thurstone's Centroid Method, which has been designated by Burt as the 'simple summation Method'. For the details of the calculation, we referred to the accounts given by Vernon³ and Guilford.⁴ As will be noted, in guessing the 'communalities' of the various tests, we used the highest correlation coefficient in each column, which was inserted in the diagonal cell at each stage of the factorisation (Appendix. R.). In view of the comparatively small size of our sample and the purely theoretical nature of our enquiry, we did not consider it worth while to use the method of 'successive approximation', which calls for repeated revisions of the complete process of the analysis in order to make the guessed communalities approximate to the true values.

As will be noted, in our analysis we have included only those measures which involved the process of rating, and, thus, left out Test 33. The analysis was carried to three factors. Table 83 shows the factor loadings:-

3 Op. cit., Factor Analysis, paras. 1-27.

4 Guilford, J.P., Psychometric Methods, pp. 457-496.

Table 83.

Test.	Factor.		
	I.	II.	III
2. Abilities.	.211	-.549	-.266
6. Des. Self 1	.470	-.582	-.110
10 Des. Self 3	.713	-.560	.196
4. 'High' Occup.	.589	-.072	-.229
5. 'Low' Occup.	.208	-.337	.390
8. Undes. Self 1	.534	.794	-.352
11 Undes. Self 3	.452	.727	.204
3. Conduct Lapse	.213	.167	.292
7. Des. Other.	.391	.063	.250
9. Undes. Other.	.265	.236	-.291
		<u>-2.100,</u>	<u>-1.248</u>
		<u>+1.987</u>	<u>+1.332</u>
		<u>-.113*</u>	<u>+.084*</u>

* The sum of the minus loadings is not equal to the sum of the plus loadings, as required.¹ Since our calculations have satisfied the other checks suggested by Vernon² or Guilford³ (Appendix B Tables 1 - 5), perhaps, this discrepancy is due to the fact that the guessed communalities do not make close approximation to the true values. We notice, accordingly, that the square of the loading of Factor II in Test 8 is not less than the guessed communality of that test used for the calculation of the second factor (Appendix B Table III), as it should be.⁴

1. Vernon. op. cit. Para. 17.

2. op. cit.

4. Vernon. op. cit. Para. 6.

3. op. cit.

Similarly, Table 84 shows that the obtained communality for that test exceeds 1, which is theoretically not possible. But as we have stated above, in view of the small size of our sample on which Table 82 (p.151) was based, and starting with only a few significant correlation coefficients, we did not consider it worth while to repeat the process of analysis with revised communalities and were content with interpreting the results given in the very first analysis.

Table 84 shows the squares of the loadings for each of the three factors and their sums.

Table 84.

Test	K_1^2	K_2^2	K_3^2	h^2
2. Abilities.	.044	.301	.071	.416
6. Des. Self 1	.221	.339	.012	.572
10 Des. Self 3	.508	.314	.038	.860
4. High Occup.	.347	.005	.052	.404
5. Low Occup.	.043	.114	.152	.309
8. Undes. Self 1	.285	.630	.124	1.039*
11 Undes. Self 3	.204	.528	.042	.774
3. Conduct lapse	.045	.028	.085	.158
7. Des. Other.	.153	.004	.062	.219
9. Undes. Other	.070	.056	.085	.211
Total	1.920	2.319	.723	4.962
Average.	.192	.232	.072	.496

For testing the significance of the factor loadings we used the method suggested by Vernon,⁵ namely, to see whether a certain loading exceeds 3 times the standard error of zero correlation, which is .109 when N is 85. We note that six loadings in Factor I and six loadings in Factor II exceed this amount. Only two loadings in Factor III exceed 3 x .109 (Table 83). Hence we may conclude that the third factor is not significant.

5. Op. cit., para. 20.

* Footnote p. 253.

Table 84 shows that the first factor accounts for 19.2 per cent. of the variance of the tests, the second factor for 23.2 per cent., and the third factor for 7.2 per cent. Together they account for 49.6 per cent. of the variance.

We next pass on to the interpretation of the factors. Table 83 shows that the first factor has positive loadings for all tests. Its loadings are significant for six tests, and non-significant, though not very low for the remaining four. This factor may be interpreted as representing the 'tendency to make arbitrary and lavish ratings' with regard to oneself as well as others. It seems at first sight, to be identifiable with what has been called the 'halo effect'. Symond⁶ discusses the nature of 'halo effect' and quotes, among others, Webb's observation regarding this process: Webb remarks " - - - that the observers in estimating the intelligence qualities are biased in the direction of marking subjects who possess other desirable qualities too highly and vice versa." Hollingworth⁷ defines 'halo effect' as "the tendency for the strong impression of one trait to bias the estimates of all others". It seems, then, that the 'halo effect' is manifested in overrating a person on

6 Symond, P., Diagnosing Personality and Conduct, pp. 111-113.

7. Hollingworth, H.L., Judging Human Character, p.96.

desirable traits and underrating him on undesirable traits, or, conversely, in overrating him on undesirable traits and underrating him on desirable traits, under the influence of some qualities which are conspicuously and definitely indicated in him. But the factor which our analysis has revealed expresses the tendency to rate either oneself or another person in the same direction on both desirable and undesirable qualities. It would not be proper to identify it, then, with 'halo effect'. In fact, it seems to us that the 'halo effect' is more akin to our second factor which, as will be seen presently, represents the tendency to overrate oneself on desirable traits and underrate oneself on undesirable traits.

The second factor has significant negative loadings for tests 2, 6, 10, and 5 and significant positive loadings for tests 8 and 11 (Table 83). It has no significant loadings for tests 7 and 9, which involve rating others. It is thus a bipolar factor contrasting two groups of self ratings, namely, (1) those involving desirable traits and abilities, and (2) those involving undesirable qualities and attitudes. We find, at first, that interest in 'low' occupations presents an exception, since it falls under the same group with the desirable traits and abilities. But, in fact, this measure does really belong to the group under which it falls. As we have noted above (p. 248), expression of interest in

occupations of low socio-economic level is not the same as expression of choice with regard to those occupations. It does not, therefore, expose the individual concerned to loss of social prestige and lowering of self-esteem, as we thought earlier.

As a matter of fact it works in the reverse direction. It enhances one's sense of personal value and fulfils the need for social acceptance as it affords the opportunity for giving evidence of one's catholicity of outlook, extolment of the dignity of labour, interest in the lowly and the humble, and disdain for the 'high brow' foppishness of the 'bourgeois' - qualities on which high premium is being put according to the modern standards of social values. We can, therefore, safely interpret the second factor as a bipolar factor of 'over-estimation - under-estimation', manifested in the overrating of oneself on acceptable qualities and underrating of oneself on unacceptable qualities. That this tendency is definitely indicated in regard to self-estimation only is shown by the non-significant loadings for tests 7 and 9 (Table 83), which involve the rating of others on desirable and undesirable traits respectively.

We can conclude from the above that our analysis affords clear indication of a bipolar factor of "over-estimation - under-estimation" which affects the reliability of self-estimates quite appreciably; this factor accounts for 23.2 per cent of the variance of our total tests. It is now clear to us that the tendency to compensation and the tendency to repudiation which we presumed to influence self-rating on desirable and undesirable traits or activities, respectively, are not really separate mechanisms. Our analysis has shown them to be complementary processes. They serve the same need for the individual, viz. to win social approval and preserve one's self-regard.

The first factor that our analysis reveals is also no less important, though we did not anticipate it in the earlier part of our work. It seems to exert quite a potent influence on the reliability of self-rating; it accounts for 19.2 per cent of the variance of all tests. It appears quite legitimate to presume that the questionnaire responses lose their validity also because some testees make lavish, presumptuous or unsubstantiated ratings. Some check quite arbitrarily many items on 'yes', others, many items on 'no' without duly considering their actual possession or lack of possession of the attitude or

behaviour suggested in the item. Lorge reports a similar finding. He administered a number of personality and interest inventories to a group of adults. He found a positive correlation between the number of checkings on 'yes', or its equivalent, for the various inventories. Similar positive correlations were found with respect to the checkings on 'no', as well as on '?'. The scoring of the tests used in our investigation, and included in correlation table (p.251), involved the affirmation or acceptance of traits, attitudes, abilities and interests. The positive loading of all the tests in the first factor supports the finding of Lorge.

Summary and conclusion:- Tetrachoric correlation coefficients calculated between 10 of the measures used by us were subjected to factor analysis.

Two factors were indicated:-

The first factor represented the general tendency to make 'uncritical and lavish ratings'.

The second factor represented the tendency to 'overrate oneself on desirable and underrate oneself on undesirable characteristics'.

10. Lorge, I., "Gen-Like: Halo or reality,"
Psychol. Bull., 1937, 34, pp. 545-546.

CHAPTER 6.

SUMMARY and CONCLUSION.

We noted a striking contrast between the reliability and validity of personality questionnaires; their reliability has been consistently reported to be fairly high, but their validity has been generally found to be poor. We traced this divergence to the errors of self-estimate on which the questionnaire responses ordinarily depend. A tendency to make flattering and fictitious responses was found to have been frequently suggested in previous investigations. It was presumed to account for the errors of self-estimate.

We noted that the tendency to fake responses was not of necessity conscious and deliberate. It also seemed to influence a self-rater sometimes without his knowledge. This suggested the operation of some persistent factors of distortion which affect the questionnaire responses in a uniform manner and thus account for their high self-consistency.

A survey of the allied literature suggested two probable factors of distortion: (1) Lack of insight or the capacity for self-knowledge; and (2) The need for conforming to the social standards of attitude and behaviour.

We failed to determine the nature of insight. We could, however, find indications of the correlates of insight from previous work. Those generally indicated are abstract intelligence, liability to projection and sense of humour.

The need for social conformity appeared to put into operation, when not fulfilled directly in overt activities, certain mechanisms of defence. Of these (1) repudiation or denial, and (2) imaginative compensation seemed chiefly at work in the questionnaire situation.

Repudiation was presumed to blot the memory of one's own 'unacceptable' thoughts and behaviour while responding to the questionnaire items. The term 'repudiation', which may be both conscious as well as unconscious, was preferred to 'repression' since the latter always implies an unconscious process.

Compensation was supposed to bring about a transformation of the memory of one's past attitudes and behaviour and, thus, work in putting up a socially, and also personally, acceptable picture of oneself.

The need for social conformity was, thus, reduced to two factors: (1) Tendency to repudiation; and (2) Tendency to compensation. These two, in addition to (3) lack of insight, were finally adopted as the probable factors of distortion.

Three groups of measures were assembled for

determining each of the three factors. The presence of a factor was presumed to be indicated by the inter-relationships between the measures under each group.

For testing insight we used: (1) Intelligence Test 33, which is a test of abstract intelligence; (2) A test of projection which involved rating oneself and other persons on a set of desirable and undesirable traits; and (3) Determination of the ratio between rating self and the average rating by others on a five point scale.

The projection test showed some clear trends. A relation was indicated between abstract intelligence and liability to projection to the extent that those who fell in the upper half of the distribution of Test 33 were clearly found to be free from projection. But those who scored in the lower half showed only a general trend toward liability to projection.

We also examined, incidentally, the relation between liability to projection and sensitivity to the offensiveness of an attitude or character quality. The less sensitive group was definitely found to be free from projection. But the more sensitive group showed only a general trend to liability to projection.

Determination of the 'self-other ratio' did not yield any conclusive result. The reason was a defect in the measurement. The average of ratings by others was based upon three ratings alone, since

many persons were rated either by none or by one or two other persons only.

On the whole, our measures of insight did not offer any clear and direct indication of insight as a variable of personality.

The two other sets of measures yielded more definite results.

For measuring the tendency to compensation we used: (1) and (2) Self-ratings on two dissimilar lists of desirable traits; (3) Self-ratings on abilities; and (4) Expression of interest in occupations of high social standing. Highly significant positive association was noted between the first three, which was interpreted as expression of the tendency to over-estimate oneself on desirable traits and abilities. The last measure did not prove, on closer scrutiny, a suitable index of the tendency to compensation. Its lack of association with the other measures in this group thus seemed well warranted.

For measuring the tendency to repudiation we used: (1) and (2) Self-ratings on two dissimilar lists of undesirable traits; (3) Self-ratings on some common deviations from socialised behaviour; (4) Self-ratings on belief in superstitions; and (5) Expression of interest in occupations of low social standing. Highly significant association was found between the ratings on the two lists of undesirable traits, in spite of their dissimilar components.

We interpreted this as due to the tendency to underestimate oneself on socially unacceptable traits. The last three showed lack of significant association to any other measure in this group. A critical examination of these measures showed that they were not suitable for the purpose of evoking the tendency to repudiation in the group to which the measures were applied.

Results of the two groups of measures revealed definite tendency among our subjects to over-estimate themselves on 'acceptable' traits and behaviour, and under-estimate themselves on the unacceptable ones.

Besides determining the interrelationship between the measures within each group, which was more directly related to our enquiry, we also tried to determine sex differences with respect to each of the measures. Highly significant difference was found only in self-rating on belief in superstition. We presumed that this difference was due to the greater credulity of women.

Results of each of the measures of repudiation and compensation were compared to scores in intelligence test, Test 33. No significant association was found in any case, except for the expression of interest in occupations of low social standing. The association was negative, i.e., those whose scores fell in the lower half of the distribution of Test 33 expressed a wider range of interest in the unskilled or semi-skilled occupations than those

whose scores fell in the upper half.

Comparison between sub-groups classified on the basis of scores in Test 33, showed highly significant difference only for interest in occupations of low standing.

Tetrachoric correlations were run between all the measures, except self-rating on belief in superstition, and the 'self-other ratios'. Significant correlations were found, in some cases, between measures placed by us within different groups. The resulting inter-correlation table was factor-analysed by the Centroid Method.

The analysis yielded two factors. The first factor loaded all tests in the same direction. It was interpreted as representing the 'tendency to make arbitrary and lavish ratings', while estimating either oneself or others and with regard to desirable or undesirable characteristics.

The second factor was a bipolar one since its loadings contrasted two groups of measurements: (1) those involving desirable qualities, and (2) those involving undesirable qualities. Expression of interest in occupations of low socio-economic level fell in the first group. It also, like the rest of the group, fulfilled the need for putting up an

acceptable picture of oneself. We realised, therefore, that its inclusion under the measures of repudiation was not justified.

The second factor had no significant loading for measures involving the rating of others. We interpreted it as expressing the tendency to over-estimate oneself on desirable and under-estimate oneself on undesirable traits and qualities, or, conversely, to under-estimate oneself on desirable and over-estimate oneself on undesirable traits and qualities. In this sense, this factor resembled 'halo effect' influencing self-estimation of one's own characteristics. However, our earlier results had confirmed the preponderance of the tendency to over-estimate oneself on the desirable and under-estimate oneself on the undesirable. The second factor was, accordingly, presumed to manifest itself more conspicuously in this tendency than in the opposite trend to under-estimate oneself on the desirable and over-estimate oneself on the undesirable.

The discovery of the second factor supported our hypothesis regarding the tendencies to repudiation and compensation. But instead of setting them apart, it showed them as functions of the same tendency adopting complementary modes of expression.

We can draw some general conclusions from our results.

There are definite factors of distortion which act in a consistent manner in vitiating the reliability of self-estimate in answering personality questionnaires.

The most important factor is the tendency to make an acceptable impression of oneself, expressed in 'over-estimation - under-estimation', with reference to desirable and undesirable traits, respectively. Questionnaire items involve reference to both desirable as well as undesirable attitudes and patterns of reaction, providing dichotomous choice responses like 'yes', 'no', etc., for checking. If a person is strongly influenced by the tendency to 'self-overestimation - self-underestimation', he is likely to check 'yes' against the desirable items and 'no' against the undesirable items, and thus make a high score in the favourable direction.

The ~~other~~ factor also accounts for much of the distortion. Persons influenced by this factor are likely to check quite arbitrarily most items as 'yes', or most items as 'no', or even as '?', if question responses are also provided, as usually done. The writer has compared, in the course of another investigation, the numbers of checkings on '?' in various sets of questionnaire items, and noticed a highly significant association. The result is not included here, as it opens up another problem, namely,

why some persons are more prone to check on 'yes', others on 'no', and still others on '?'. It is possible that this enquiry might reveal some personality traits like 'confidence', 'diffidence', and so on, to account for the differential checking.

The factor of insight which we expected to form one of the influences affecting the accuracy of questionnaire responses did not come out very clearly. The reason is, perhaps, that the nature of insight is very dubious. If it means the capacity for accurate self-knowledge, a meaning which is akin to its usage in psychopathology, then insight would involve a very complex phenomenon embracing all factors which affect the accuracy of self-knowledge. In this case the factors which we determined above would also come under insight, for a person with strong influence of those factors is likely to suffer from the inaccuracy of self-knowledge and therefore to lack insight. It, then, seems to be no factor over and above those involving 'arbitrary rating' and 'tendency to over-estimation - under-estimation of oneself'.

We have reiterated many times that our aim in this research was purely theoretical. The success of our endeavour can be judged from the fact that we have been able to isolate two persistent tendencies which are at work in lowering the validity of personality questionnaires. We have been able to describe some of

their characteristics also and give them a rough operational definition. We have also devised some tentative tests for measuring these tendencies, some of which have proved quite suitable. There is no doubt that they need reformulation and a thorough refinement. Nevertheless, they may serve as a useful starting point.

BIBLIOGRAPHY:

BOOKS:

1. Angyal, A., Foundations for a Science of Personality. New York: Humphrey Milford, Oxford University Press, 1941.
2. Allport, G.W., Personality: A Psychological Interpretation. New York: Henry Holt and Company, 1937.
3. Bartlett, F.C., Remembering, A Study in Experimental and Social Psychology. Cambridge Psychological Library, Cambridge University Press, 1932.
4. Cattell, R. B. Description and Measurement of Personality. London: George Harrap & Co. Ltd., 1946.
5. Eysenck, H. J. Dimensions of Personality, London, Kegan Paul, Trench, Trubner & Co., Ltd., 1947.
6. Ferguson, G. A., The Reliability of Mental Tests. University of London Press, Ltd., 1941.
7. Flanagan, J. C. Factor Analysis in the study of Personality, Stanford University Press, 1935.
8. Freud, S., Ego and the Id. Hogarth Press, London. The Institute of Psychoanalysis, 1942.
9. Freud, S., New Introductory Lectures, on Psycho-analysis. Hogarth Press, London, 1933.
10. Freud, S., Interpretation of Dreams, London: George Allen & Unwin, Ltd., 1937.
11. Freud, S., Psychopathologies of Everyday Life. Macmillan & Co. Ltd., 1914.
12. Freud, S., Collected Papers, Vols. 2 - 4. The Hogarth Press. London; Vols 2 and 3. Fourth Edition, Vol. 4 Third Edition.
13. Freud, S., Inhibitions, Symptoms and Anxiety, London: The Hogarth Press and the Institute of Psycho-analysis, 1936.
14. Garrett, H. E. Statistics in Psychology and Education Longmans, Green & Co., New York, London, Toronto, 1947.
15. Guilford, J. P., Psychometric Methods, McGraw-Hill Book Company, Inc., New York and London, 1936.
16. Hathaway, S. R., and McKinley, J. C. Manual for the Minnesota Multiphasic Personality. The Psychological Corporation, New York, Rev. Edition, 1943.
17. Hollingworth, H. L., The Psychology of Functional Neurosis. D. Appleton and Co., London, New York, 1920.
18. Hollingworth, H. L., Judging Human Characters. D. Appleton & Co. London, New York, 1922.

BIBLIOGRAPHY (continued).

19. Hull, C. L., Aptitude Testing. George G. Harrap & Co. Ltd.
 20. Kelley, T. L. Interpretation of Educational Measurement. World Book Co., New York, 1927.
 21. Kretschmer, E., Physique and Character, Kegan Paul, Trench, Trubner & Co. Ltd., 1936.
 22. Lindquist, E. F., Statistical Analysis in Educational Research, Houghton & Mifflin Company, New York, 1940.
 23. MacDonald, A., A Scheme of Vocational Guidance for Use in an Educational Area. Ph. D., Thesis, 1939, Edinburgh University.
 24. McDougall, W. The Energies of Man. Methven & Co. Ltd., London, 1932.
 25. Murphy, G. Murphy, L., and Newcomb, T., Experimental Social Psychology, Harper & Brothers, 1931.
 26. Murray, H. A. Explorations in Personality. New York: Oxford University Press, 1938.
 27. Rugg, H. O., Statistical Methods Applied to Education. Houghton Mifflin & Co., 1917.
 28. Spearman, C. The Abilities of Man. Macmillan & Co. Ltd., London, 1927.
 29. Stagner, R. Psychology of Personality. McGraw - Hill Book Co. Inc. New York and London, 1937.
 30. Strong, E. K. Jr. Vocational Interests of Men and Women. London: Humphrey Milford Oxford University Press, 1945.
 31. Symond, P. M. Diagnosing Personality and Conduct. A. Appleton - Century Company Incorp. New York, 1931.
 32. Taxler, A. E. Technique of Guidance.
 33. Thurstone, L. L. Computing Diagrams for the Tetrachoric Correlation coefficient University of Chicago Book Store, Chicago, Illinois, 1933.
 34. Vernon, P. E. The Measurement of Abilities. University of London, Press Ltd., 1946.
 35. Vernon, P. E. Notes on Statistical Methods in Common Use in Vocational and Educational Research.
 36. Wyatt, H. G. Psychology of Intelligence and Will. Kegan Paul, Trench, Trubner & Co. Ltd., 1932.
-

BIBLIOGRAPHY (continued)

JOURNALS :

- | | | |
|-----|--|----------------|
| | | 21. |
| 1. | The Journal of Abnormal and Social Psychology. ... | 1926, Vol |
| 2. | The Journal of Abnormal and Social Psychology, ... | 1928, Vol 23. |
| 3. | The Journal of Abnormal and Social Psychology, ... | 1930, Vol. 25 |
| 4. | The Journal of Abnormal and Social Psychology, ... | 1931, Vol. 26 |
| 5. | The Journal of Abnormal and Social Psychology, ... | 1933, Vol. 28 |
| 6. | The Journal of Abnormal and Social Psychology, ... | 1936, Vol. 31 |
| 7. | The Journal of Abnormal and Social Psychology, ... | 1937, Vol. 32. |
| 8. | The Journal of Abnormal and Social Psychology, ... | 1939, Vol. 34. |
| 9. | The Journal of Social Psychology..... | 1930, Vol. 1 |
| 10. | The Journal of Social Psychology..... | 1933, Vol. 4 |
| 11. | The Journal of Social Psychology..... | 1934. Vol. 5 |
| 12. | The Journal of Social Psychology..... | 1935. Vol. 6 |
| 13. | The Journal of Social Psychology..... | 1936 Vol. 7 |
| 14. | The Journal of Social Psychology..... | 1940 Vol. 11. |
| 15. | The Journal of Social Psychology..... | 1946 Vol. 24 |
| 16. | The Journal of Educational Psychology | 1922 Vol. 13 |
| 17. | The Journal of Educational Psychology | 1925 Vol. 16 |
| 18. | The Journal of Educational Psychology | 1938, Vol 29 |
| 19. | The Journal of Educational Psychology | 1944 Vol 35 |
| 20. | Journal of Applied Psychology | 1936 Vol 20. |
| 21. | Journal of Applied Psychology | 1941 Vol. 25 |
| 22. | Journal of Applied Psychology | 1942 Vol. 26 |
| 23. | Journal of Applied Psychology | 1944 Vol. 28 |
| 24. | Journal of Applied Psychology | 1945 Vol. 29 |
| 25. | Psychological Bulletin | 1932, Vol. 29 |
| 26. | Psychological Bulletin | 1934, Vol. 31 |
| 27. | Psychological Bulletin | 1937. Vol. 34 |
| 28. | Psychological Bulletin | 1942. Vol. 39 |
| 29. | Psychological Bulletin | 1944. Vol. 41. |
| 30. | Psychological Bulletin | 1946. Vol. 43. |
| 31. | The British Journal of Psychology | 1947, Vol. 37. |
| 32. | Psychological Monographs | 1936 Vol 47. |
| 33. | Genetic Psychology Monographs | 1943. Vol 28. |
-

APPENDIX I.

TRAIT LIST I.

Name _____ Christian Name _____ Date _____

Think of 2 persons of your own sex whom you know well enough to judge the peculiarities of their character. They should not be your friends. (A friend is one with whom you are very intimate, whom you desire to meet very often and whose company is a source of pleasure to you.) Write their names in the space below against numbers 1 and 2. Write your own name against number 3.

1. _____ }
 2. _____ } O (other)
 3. _____ S (self)

Below is a list of character traits with 'S' and 'O' printed against each. Judge with respect to each trait whether you think it to be possessed by any of the persons listed by you above, including yourself. If a trait belongs to one or both of the persons, other than yourself, encircle 'O' (other). If it belongs also to yourself, encircle also 'S' (self). If it belongs only to yourself, encircle only 'S' (self). For example, if 'Distrustful' is true of one or both of the other persons, and also of yourself, encircle 'S' and 'O' in the following manner:-

Distrustful O S

If 'Distrustful' is true of one or both of the other persons and is true of yourself, encircle only 'O', as:-

Distrustful O S

If 'Distrustful' is true only of yourself and is not true of the other persons, encircle only 'S', as:-

Distrustful O S

Read the above instructions very carefully and make sure that you have thoroughly understood them.

Your answers will be held strictly confidential.

List of Traits.

Affectionate	S	O	2. Applause-seeking	S	O
Arrogant	S	O	4. Avoiding-company	S	O
Benevolent	S	O	6. Broad-minded	S	O
Cliquish	S	O	8. Cold-hearted	S	O
Conceited	S	O	10. Congenial	S	O
Considerate	S	O	12. Courageous	S	O
Courteous	S	O	14. Credulous	S	O
Cowardly	S	O	16. Degenerate	S	O
Dependable	S	O	18. Distrustful	S	O

Turn over

Dogmatic	S	0	20. Energetic	S	0
Envious	S	0	22. Erratic	S	0
Excitable	S	0	24. Fault-finding	S	0
Fickle	S	0	26. Frank	S	0
Garrulous	S	0	28. Generous	S	0
Good-humored	S	0	30. Good-tempered	S	0
Hasty	S	0	32. Heartless	S	0
Hospitable	S	0	34. Hot-tempered	S	0
Ill-mannered	S	0	36. Improvident	S	0
Insincere	S	0	38. Irritable	S	0
Just	S	0	40. Kind-hearted	S	0
Lethargic	S	0	42. Level-headed	S	0
Malevolent	S	0	44. Mercenary	S	0
Miserly	S	0	46. Moody	S	0
Obstinate	S	0	48. Open-minded	S	0
Over-critical	S	0	50. Panicky	S	0
Prudent	S	0	52. Public-spirited	S	0
Quarrelsome	S	0	54. Reckless	S	0
Secretive	S	0	56. Self-absorbed	S	0
Self-assertive	S	0	58. Self-centred	S	0
Self-confident	S	0	60. Self-depreciative	S	0
Self-distrustful	S	0	62. Self-seeking	S	0
Self-reliant	S	0	64. Self-possessed	S	0
Sentimental	S	0	66. Shy	S	0
Sincere	S	0	68. Sociable	S	0
Spiteful	S	0	70. Tactless	S	0
Talented	S	0	72. Timid	S	0
Tolerant	S	0	74. Treacherous	S	0
Trustworthy	S	0	76. Unassuming	S	0
Unsympathetic	S	0	78. Unpractical	S	0
Dishonest	S	0	80. Unambitious	S	0

APPENDIX II.

Name _____ Christian Name _____

Kindly rate the following trait-names as:-

1. Commonly treated as strongly reprehensible (R).
2. Commonly treated as undesirable but not strongly reprehensible (U)
3. Commonly treated as desirable (D).

Please indicate your rating by encircling 'R', 'U', or 'D', printed against each name, omitting that about which you are doubtful.

If any name lacks uniqueness of significance, that is, is equivocal or ambiguous, please encircle 'A'.

Affectionate	R	U	D	A	2. Applause-seeking	R	U	D	A
Arrogant	R	U	D	A	4. Avoiding-company	R	U	D	A
Benevolent	R	U	D	A	6. Broad-minded	R	U	D	A
Cliquish	R	U	D	A	8. Cold-hearted	R	U	D	A
Conceited	R	U	D	A	10. Congenial	R	U	D	A
Considerate	R	U	D	A	12. Courageous	R	U	D	A
Courteous	R	U	D	A	14. Credulous	R	U	D	A
Cowardly	R	U	D	A	16. Degenerate	R	U	D	A
Dependable	R	U	D	A	18. Distrustful	R	U	D	A
Dogmatic	R	U	D	A	20. Energetic	R	U	D	A
Envious	R	U	D	A	22. Erratic	R	U	D	A
Excitable	R	U	D	A	24. Fault-finding	R	U	D	A
Fickle	R	U	D	A	26. Frank	R	U	D	A
Garrulous	R	U	D	A	28. Generous	R	U	D	A
Good-humored	R	U	D	A	30. Good-tempered	R	U	D	A
Hasty	R	U	D	A	32. Heartless	R	U	D	A
Hospitable	R	U	D	A	34. Hot-tempered	R	U	D	A
Ill-mannered	R	U	D	A	36. Improvident	R	U	D	A
Insincere	R	U	D	A	38. Irritable	R	U	D	A
Just	R	U	D	A	40. Kind-hearted	R	U	D	A
Lethargic	R	U	D	A	42. Level-headed	R	U	D	A
Malevolent	R	U	D	A	44. Mercenary	R	U	D	A
Miserly	R	U	D	A	46. Moody	R	U	D	A
Obstinate	R	U	D	A	48. Open-minded	R	U	D	A
Over-critical	R	U	D	A	50. Panicky	R	U	D	A
Prudent	R	U	D	A	52. Public-spirited	R	U	D	A
Quarrelsome	R	U	D	A	54. Reckless	R	U	D	A
Secretive	R	U	D	A	56. Self-absorbed	R	U	D	A
Self-assertive	R	U	D	A	58. Self-centred	R	U	D	A
Self-confident	R	U	D	A	60. Self-depreciative	R	U	D	A
Self-distrustful	R	U	D	A	62. Self-seeking	R	U	D	A
Self-reliant	R	U	D	A	64. Self-possessed	R	U	D	A
Sentimental	R	U	D	A	66. Shy	R	U	D	A
Sincere	R	U	D	A	68. Sociable	R	U	D	A
Spiteful	R	U	D	A	70. Tactless	R	U	D	A
Talented	R	U	D	A	72. Timid	R	U	D	A
Tolerant	R	U	D	A	74. Treacherous	R	U	D	A
Trustworthy	R	U	D	A	76. Unassuming	R	U	D	A
Unsympathetic	R	U	D	A	78. Unpractical	R	U	D	A
Dishonest	R	U	D	A	80. Unambitious	R	U	D	A

APPENDIX III.

TRAIT LIST 2.

Name _____ Christian Name _____ Date _____

Below is a list of words some of which express desirable characteristics, that is, those about which you will be glad if you know that you possess them, for example, 'truthful'. Some express undesirable characteristics, that is, those about which you will be sorry if you think that they belong to you and which you would desire to relinquish, for example, 'absent-minded'. Others express strongly reprehensible characteristics, that is, those which would occasion strong feelings of disgust and shame in you if you realise that you possess them, or, expressions of strong protest if somebody wrongly attributes them to you, for example, 'deceitful'.

You are asked to indicate which of the following words express, according to you, desirable (D), undesirable (U), or strongly reprehensible (R) characteristics, by encircling D, U, or R, printed against each word.

Amicable	D	U	R	2. Accommodating	D	U	R
Applause-seeking	D	U	R	4. Arrogant	D	U	R
Avaricious	D	U	R	6. Avoiding-company	D	U	R
Careless	D	U	R	8. Chivalrous	D	U	R
Cliquish	D	U	R	10. Cold-hearted	D	U	R
Cool-headed	D	U	R	12. Conceited	D	U	R
Conscientious	D	U	R	14. Cowardly	D	U	R
Credulous	D	U	R	16. Cultured	D	U	R
Cunning	D	U	R	18. Degenerate	D	U	R
Dishonest	D	U	R	20. Distrustful	D	U	R
Dogmatic	D	U	R	22. Eccentric	D	U	R
Emotionally-stable	D	U	R	24. Enterprising	D	U	R
Envious	D	U	R	26. Erratic	D	U	R
Excitable	D	U	R	28. Extortionate	D	U	R
Fair-minded	D	U	R	30. Fault-finding	D	U	R
Fickle	D	U	R	32. Forgetful	D	U	R
Frivolous	D	U	R	34. Garrulous	D	U	R
Gentle	D	U	R	36. Hasty	D	U	R
Heartless	D	U	R	38. Hot-tempered	D	U	R
Humorous	D	U	R	40. Ill-mannered	D	U	R
Improvident	D	U	R	42. Insincere	D	U	R
Intemperate	D	U	R	44. Intolerant	D	U	R
Irritable	D	U	R	46. Large-hearted	D	U	R
Lascivious	D	U	R	47. Lethargic	D	U	R
Malevolent	D	U	R	50. Mercenary	D	U	R
Miserly	D	U	R	52. Modest	D	U	R
Moody	D	U	R	54. Obstinate	D	U	R
Overbearing	D	U	R	56. Over-critical	D	U	R
Panicky	D	U	R	58. Philanthropic	D	U	R
Profligate	D	U	R	60. Quarrelsome	D	U	R
Reasonable	D	U	R	62. Reckless	D	U	R
Reliable	D	U	R	64. Rude	D	U	R
Sagacious	D	U	R	66. Secretive	D	U	R
Self-absorbed	D	U	R	68. Self-admiring	D	U	R
Self-centred	D	U	R	70. Self-consistent	D	U	R
Self-controlled	D	U	R	72. Self-deceiving	D	U	R

Turn over

Self-depreciating	D	U	R	74.	Self-distrustful	D	U	R
Selfish	D	U	R	76.	Self-seeking	D	U	R R
Sentimental	D	U	R	78.	Shy	D	U	R R
Short-tempered	D	U	R	80.	Slanderous	D	U	R R
Sober-minded	D	U	R	82.	Spiteful	D	U	R A
Straight-forward	D	U	R	84.	Suspicious	D	U	R
Sympathetic	D	U	R	86.	Tactless	D	U	R R
Timid	D	U	R	88.	Treacherous	D	U	R R
Unambitious	D	U	R	90.	Undependable	D	U	R R
Unjust	D	U	R	92.	Unpractical	D	U	R R
Unscrupulous	D	U	R	94.	Unsympathetic	D	U	R R
Untidy	D	U	R	96.	Untruthful	D	U	R R
Upright	D	U	R	98.	Versatile	D	U	R R
Vindictive	D	U	R	100.	Well-mannered	D	U	R

- 0 - 0 - 0 - 0 - 0 -

APPENDIX IV.

Name _____ Christian Name _____ Date _____

Think of 5 persons of your own sex in the Psychology Class with whom you are well acquainted. They should not be your friends. (A friend is one with whom you are very intimate, whom you desire to meet very often, whose company is a source of great pleasure to you. An acquaintance is a person whom you know very well because you happen to meet him very often in the class, club or other places.) Write the names of these persons (surname and christian name) in the space below against each of A, B, C, D and E. Write your own name against F. Remember that you have to write the names of those persons only in the Psychology Class whom you know very well.

- A _____
- B _____
- C _____
- D _____
- E _____
- F _____

Below is a list of 6 types of descriptions with A, B, C, D, E and F printed under each description. Assign to each person listed by you the description which you judge on the ground of your personal knowledge to characterise him most adequately, including yourself. Express your judgment by encircling the letter, or letters, which correspond to the person, or persons, to whom the description usually applies. For example, if description W under Type 3 (page 2) applies to A, C and F (yourself), circle these letters in the following manner:-

W Liking for contact with others. (A) B (C) D E (F)

Give your honest judgment. Weigh your judgment very carefully before you express it.

Rest assured that your answers will be held strictly confidential.

Read the above instructions carefully and make sure that you have thoroughly understood them.

DESCRIPTIONS.

Under each type one description should be assigned to each person. Read all descriptions under a type before you express your judgment.)

TYPE 1.

Strong tendency to dominate, lead, organise in dealing with his (her) fellows.

- A B C D E F

Turn over

Tendency to dominate, lead, organise.

A B C D E F

Average: neither distinctly dominant nor submissive.

A B C D E F

Tendency to be passive in contact with his (her) fellows.

A B C D E F

Strong tendency to be passive in contact with his (her) fellows.

A B C D E F

TYPE 2.

Highly self-confident and exceptionally well adjusted to the environment; possessing unusual ability to face facts objectively and deal with them without internal conflict.

A B C D E F

Self-confident; well adjusted to the environment.

A B C D E F

Average: neither distinctly self-confident nor self-conscious.

A B C D E F

Self-conscious, shy. May have emotional difficulties.

A B C D E F

Extremely self-conscious, shy and emotionally unstable.

A B C D E F

TYPE 3.

Strong liking for contact with others in the environment. Preferring company both while working and during leisure hours. Showing a strong tendency to talk problems over and consult others before executing decisions.

A B C D E F

Liking for contact with others.

A B C D E F

Average: neither distinctly social nor solitary.

A B C D E F

Turn over

Liking for freedom from contact from others in the environment.
Preferring to be alone both while working and during leisure hours.
Showing a tendency to be contented with own judgment in reaching
decisions and formulating plans.

A B C D E F

Strong liking for freedom from contact.

A B C D E F

- 0 - 0 - 0 - 0 - 0 -

APPENDIX V.

Name _____ Christian Name _____ Date _____

Indicate below what kind of a person you are now and what you have been. Encircle 'Yes' if the item really describes you. Encircle 'No' if it does not describe you. Encircle '?' if you are not sure.

Be frank and honest and do not hesitate in pointing out your weaknesses. Rest assured that your answers will be held strictly confidential.

- | | | | |
|-----|----|---|---|
| Yes | No | ? | Usually start activities of my group. |
| Yes | No | ? | Usually drive myself steadily (do not work by fits and starts). |
| Yes | No | ? | Win friends easily. |
| Yes | No | ? | Usually get other people do what I want done. |
| Yes | No | ? | Usually liven up the group on a dull day. |
| Yes | No | ? | Am quite sure of myself. |
| Yes | No | ? | Accept just criticism without getting cross. |
| Yes | No | ? | Have mechanical ingenuity. |
| Yes | No | ? | Can carry out plans assigned by other people. |
| Yes | No | ? | Can discriminate between more or less important matters. |
| Yes | No | ? | Am inclined to be reticent in confidential and semi-confidential matters. |
| Yes | No | ? | Am always on time with my work. |
| Yes | No | ? | Remember faces, names and incidents better than the average person. |
| Yes | No | ? | Can correct others without giving offence. |
| Yes | No | ? | Am able to meet emergencies quickly and effectively. |
| Yes | No | ? | Can write a concise well organised report. |
| Yes | No | ? | Have good judgment in appraising values. |
| Yes | No | ? | Plan my work in detail. |
| Yes | No | ? | Smooth out tangles and disagreements between people. |
| Yes | No | ? | Discuss my ideals with others. |

- 0 - 0 - 0 - 0 - 0 - 0 -

APPENDIX VI.

TRAIT LIST 3.

Below is a list of adjectives. Judge with respect to each adjective whether you think it to be true of yourself. Express your judgment by drawing a circle around the letter 'S', printed against each adjective.

Give your honest judgment. Rest assured that your answers will remain strictly confidential.

Accommodating	S	2. Affable	S
Artful	S	4. Avoiding-company	S
Calculating	S	6. Charitable	S
Conciliatory	S	8. Conventional	S
Over-critical	S	10. Dauntless	S
Deceitful	S	12. Dogmatic	S
Egoistic	S	14. Exacting	S
Excitable	S	16. Extortionate	S
Fitful	S	18. Flexible	S
Forgiving	S	20. Formal	S
Hard-hearted	S	22. Honest	S
Indecisive	S	24. Independent	S
Introverted	S	26. Logical	S
Malicious	S	28. Modest	S
Outspoken	S	30. Overbearing	S
Parsimonious	S	32. Miserly	S
Persevering	S	34. Philanthropic	S
Presumptuous	S	36. Pretentious	S
Quick	S	38. Reasonable	S
Reticent	S	40. Self-consistent	S
Self-distrusting	S	42. Self-sacrificing	S
Sensitive	S	44. Shy	S
Sluggish	S	46. Stubborn	S
Submissive	S	48. Suggestible	S
Sympathetic	S	50. Vindictive	S

APPENDIX VII(a).

Name _____ Christian Name _____ Date _____

Indicate after each occupation listed below whether you would like that kind of work. Disregard conditions of salary, social standing, future prospect, etc. Consider only whether you would like to do what is involved in the occupation. You are not asked if you would take up the occupation permanently, but merely whether you would enjoy that kind of work, regardless of any skills, abilities, or training which you may or may not possess.

Draw a circle around 'L' if you like that kind of work.
 Draw a circle around 'I' if you are indifferent to that kind of work.
 Draw a circle around 'D' if you dislike that kind of work.

Work rapidly. Your first impressions are desired. Answer all the items

List of Occupations.
 (Men).

Accountant	L	I	D	29. Farmer	L.	I	D
Actor	L	I	D	30. Hotel manager	L	I	D
Advertiser	L	I	D	31. Insurance agent	L	I	D
Artist	L	I	D	32. Jeweller	L	I	D
Auctioneer	L	I	D	33. Judge	L	I	D
Author	L	I	D	34. Laboratory assistant	L	I	D
Aviator	L	I	D	35. Lawyer	L	I	D
Architect	L	I	D	36. Librarian	L	I	D
Army officer	L	I	D	37. Manufacturer	L	I	D
Book seller	L	I	D	38. Musician	L	I	D
Botanist	L	I	D	39. Painter	L	I	D
Broadcaster	L	I	D	40. Photographer	L	I	D
Builder	L	I	D	41. Poet	L	I	D
Carpenter	L	I	D	42. Policeman	L	I	D
Cartoonist	L	I	D	43. Politician	L	I	D
Chemist	L	I	D	44. Psychologist	L	I	D
Cinema attendant	L	I	D	45. Printer	L	I	D
Civil servant	L	I	D	46. Professor	L	I	D
Clergyman	L	I	D	47. Reporter	L	I	D
Clerk	L	I	D	48. Research worker	L	I	D
Commercial traveller	L	I	D	49. Sailor	L	I	D
Confectioner	L	I	D	50. Salesman	L	I	D
Dentist	L	I	D	51. Scientist	L	I	D
Doctor	L	I	D	52. Sculptor	L	I	D
Editor	L	I	D	53. Social worker	L	I	D
Engineer	L	I	D	54. Surgeon	L	I	D
Factory worker	L	I	D	55. Tailor	L	I	D
Factory manager	L	I	D	56. Zoologist	L	I	D

APPENDIX VII(b).

Name _____ Christian Name _____ Date _____

Indicate after each occupation listed below whether you would like that kind of work. Disregard conditions of salary, social standing, future prospect, etc. Consider only whether you would like to do what is involved in the occupation. You are not asked if you would take up the occupation permanently, but merely whether you would enjoy that kind of work, regardless of any necessary skills, abilities, or training which you may or not possess.

Draw a circle around 'L' if you like that kind of work.
 Draw a circle around 'I' if you are indifferent to that kind of work.
 Draw a circle around 'D' if you dislike that kind of work.

Work rapidly. Your first impressions are desired. Answer all the items

List of Occupations.
 (Women).

Accountant	L	I	D	27. Fruiterer	L	I	D
Actress	L	I	D	28. Lawyer	L	I	D
Advertiser	L	I	D	29. Librarian	L	I	D
Artist	L	I	D	30. Milliner	L	I	D
Author	L	I	D	31. Musician	L	I	D
Bank clerk	L	I	D	32. Nurse	L	I	D
Book keeper	L	I	D	33. Poetess	L	I	D
Book seller	L	I	D	34. Opera singer	L	I	D
Broadcaster	L	I	D	35. Painter	L	I	D
Cartoonist	L	I	D	36. Photographer	L	I	D
Caterer	L	I	D	37. Politician	L	I	D
Chemist	L	I	D	38. Post office worker	L	I	D
Cinema attendant	L	I	D	39. Professor	L	I	D
Civil servant	L	I	D	40. Psychologist	L	I	D
Confectioner	L	I	D	41. Reporter	L	I	D
Clerk	L	I	D	42. Research worker	L	I	D
Cook	L	I	D	43. Scientist	L	I	D
Dancer	L	I	D	44. Secretary	L	I	D
Doctor	L	I	D	45. Shop assistant	L	I	D
Dressmaker	L	I	D	46. Social worker	L	I	D
Dress designer	L	I	D	47. Surgeon	L	I	D
Editor	L	I	D	48. Teacher	L	I	D
Factory worker	L	I	D	49. Telegraph operator	L	I	D
Farmer	L	I	D	50. Typist	L	I	D
Film star	L	I	D	51. Waitress	L	I	D
Florist	L	I	D	52. Wireless operator	L	I	D

APPENDIX VIII(a).

Psychology Department, Edinburgh University.

Below is a list of occupations with the letters H, M, and L, standing for 'high', 'median', and 'low', printed against each. You are requested to indicate the order of social standing, i.e., high, median, or low, to which an occupation belongs with respect to the degree of social prestige generally attached to it. If an occupation is of high social standing, please draw a circle around H; if it is of median - neither high nor low - social standing, draw a circle around M; and if it is of low social standing, draw a circle around L.

Check each item.

List of Occupations.
(Women).

Accountant	H	M	L	27. Fruiterer	H	M	L
Actress	H	M	L	28. Lawyer	H	M	L
Advertiser	H	M	L	29. Librarian	H	M	L
Artist	H	M	L	30. Milliner	H	M	L
Author	H	M	L	31. Musician	H	M	L
Bank clerk	H	M	L	32. Nurse	H	M	L
Book keeper	H	M	L	33. Poetess	H	M	L
Book seller	H	M	L	34. Opera singer	H	M	L
Broadcaster	H	M	L	35. Painter	H	M	L
Cartoonist	H	M	L	36. Photographer	H	M	L
Caterer	H	M	L	37. Politician	H	M	L
Chemist	H	M	L	38. Post office worker	H	M	L
Cinema attendant	H	M	L	39. Professor	H	M	L
Civil servant	H	M	L	40. Psychologist	H	M	L
Confectioner	H	M	L	41. Reporter	H	M	L
Clerk	H	M	L	42. Research worker	H	M	L
Cook	H	M	L	43. Scientist	H	M	L
Dancer	H	M	L	44. Secretary	H	M	L
Doctor	H	M	L	45. Shop assistant	H	M	L
Dressmaker	H	M	L	46. Social worker	H	M	L
Dress designer	H	M	L	47. Surgeon	H	M	L
Editor	H	M	L	48. Teacher	H	M	L
Factory worker	H	M	L	49. Telegraph operator	H	M	L
Farmer	H	M	L	50. Typist	H	M	L
Film star	H	M	L	51. Waitress	H	M	L
Florist	H	M	L	52. Wireless operator	H	M	L

APPENDIX VIII(b).

Psychology Department, Edinburgh University.

Below is a list of occupations with the letters H, M, and L, standing for 'high', 'median', and 'low', printed against each. You are requested to indicate the order of social standing, i.e., high, median, or low, to which an occupation belongs with respect to the degree of social prestige generally attached to it. If an occupation is of high social standing, please draw a circle around 'H'; if it is of median - neither high nor low - social standing, draw a circle around 'M', and if it is of low social standing, draw a circle around 'L'.

Check each item.

List of Occupations.
(Men).

Accountant	H	M	L	29. Farmer	H	M	L
Actor	H	M	L	30. Hotel manager	H	M	L
Advertiser	H	M	L	31. Insurance agent	H	M	L
Artist	H	M	L	32. Jeweller	H	M	L
Auctioneer	H	M	L	33. Judge	H	M	L
Author	H	M	L	34. Laboratory assistant	H	M	L
Aviator	H	M	L	35. Lawyer	H	M	L
Architect	H	M	L	36. Librarian	H	M	L
Army officer	H	M	L	37. Manufacturer	H	M	L
Book seller	H	M	L	38. Musician	H	M	L
Botanist	H	M	L	39. Painter	H	M	L
Broadcaster	H	M	L	40. Photographer	H	M	L
Builder	H	M	L	41. Poet	H	M	L
Carpenter	H	M	L	42. Policeman	H	M	L
Cartoonist	H	M	L	43. Politician	H	M	L
Chemist	H	M	L	44. Psychologist	H	M	L
Cinema attendant	H	M	L	45. Printer	H	M	L
Civil servant	H	M	L	46. Professor	H	M	L
Clergyman	H	M	L	47. Reporter	H	M	L
Clerk	H	M	L	48. Research worker	H	M	L
Commercial traveller	H	M	L	49. Sailor	H	M	L
Confectioner	H	M	L	50. Salesman	H	M	L
Dentist	H	M	L	51. Scientist	H	M	L
Doctor	H	M	L	52. Sculptor	H	M	L
Editor	H	M	L	53. Social worker	H	M	L
Engineer	H	M	L	54. Surgeon	H	M	L
Factory worker	H	M	L	55. Tailor	H	M	L
Factory manager	H	M	L	56. Zoologist	H	M	L

APPENDIX IX.

Name _____ Christian Name _____ Date _____

Country or Town. _____ Married or unmarried. _____
 (Cross whichever not applicable.)

Below you find a number of statements about some transitory attitudes and activities. Encircle 'T' if a statement is true of yourself. Encircle 'U' (untrue), if it is untrue of yourself. Encircle '?', if you are not sure whether it is true or untrue of yourself.

Be frank and honest and do not hesitate in pointing out your defects. Be assured that your answers will be held strictly confidential.

Once in a while I think of things too bad to talk about.	T	U	?
I do not always tell the truth.	T	U	?
I get angry sometimes.	T	U	?
Sometimes when I am not feeling well I am cross.	T	U	?
If I could get into a movie without paying and be sure I was not seen I would probably do it.	T	U	?
I like to know some important people because it makes me feel important.	T	U	?
I do not like every one I know.	T	U	?
I gossip a little at times.	T	U	?
Sometimes at elections I vote for men about whom I know very little.	T	U	?
Once in a while I laugh at a dirty joke.	T	U	?
At times I feel like swearing.	T	U	?
I do not read every editorial in the newspaper every day.	T	U	?
Once in a while I put off until tomorrow what I ought to do today.	T	U	?
My table manners are not quite as good at home as when I am out in company.	T	U	?
I would rather win than lose in a game.	T	U	?

APPENDIX X.

Name _____ Christian Name _____ Date _____

Address _____

(Town)

(Country)

There are some common beliefs which influence most of us. They relate to some of the every day occurrences of life. A list is given below with 'Always', 'Sometimes' and 'Never' printed against each item. You are to indicate in each case how have you been affected by it. If you are always affected by it, underline 'Always'. If sometimes you have been affected by it and sometimes not, underline 'Sometimes'. If you have never been affected by it, underline 'Never'.

Before indicating your reactions, make sure that you have made an accurate estimate.

- | | | | |
|---|--------|-----------|-------|
| Does it bother you to see the new moon through glass? | Always | Sometimes | Never |
| If a black cat crosses your path, do you think that it might bring good luck? | Always | Sometimes | Never |
| Do you think it is unlucky to spill salt? | Always | Sometimes | Never |
| If a mirror falls and breaks, would you expect 'seven years' bad luck' or a misfortune of some kind? | Always | Sometimes | Never |
| Are you influenced by the rhyme:
"See a pin and pick it up
All day long you'll have good luck" ? | Always | Sometimes | Never |
| Does the seeing of a solitary magpie suggest misfortune to you? | Always | Sometimes | Never |
| If on returning home you find that your umbrella is wet, would you have scruples about opening it? | Always | Sometimes | Never |
| Do you think 13 at table unlucky? | Always | Sometimes | Never |
| When ordering or buying something new to wear, would you be reluctant to choose material of a green colour? | Always | Sometimes | Never |
| Are you uneasy when required to walk under a ladder which is in your path? | Always | Sometimes | Never |

APPENDIX A.

Trait Names	Frequency						Percentage					
	Des.		Undes.		Repre- hens.		Des.		Undes.		Repre- hens.	
	M	F	M	F	M	F	M	F	M	F	M	F
1. Amicable	34	74		1			100	99		1		
2. Accommodating	30	72	4	3			88	96	12	4		
3. Applause-seeking	1	1	29	60	4	14	3	1	85	80	12	19
4. Arrogant		1	13	44	21	30		1	38	59	64	40
5. Avaricious		1	7	21	27	53		1	21	28	79	71
6. Avoiding-company	1	5	30	62	3	7	3	7	88	83	9	9
7. Careless		1	31	71	3	3		1	91	95	9	4
8. Chivalrous	33	75	1				97	100	3			
9. Cliquish			29	61	5	14			85	81	15	19
10. Cold-hearted	1	2	18	42	15	31	3	3	53	56	44	41
11. Cool-headed	34	75					100	100				
12. Conceited		1	18	42	16	32		1	53	56	47	43
13. Conscientious	31	73	2	2			91	97	6	3		
14. Cowardly			11	32	23	43			32	43	68	57
15. Credulous	3	9	28	61	3	5	9	12	82	81	9	7
16. Cultured	34	74		1			100	99		1		
17. Cunning		4	15	26	19	45		5	44	35	56	60
18. Degenerate			16	25	18	50			47	33	53	67
19. Dishonest			5	9	29	65			15	12	85	87
20. Distrustful		1	20	42	14	32		1	59	56	41	43
21. Dogmatic	3	4	24	65	7	6	9	5	70	87	21	8
22. Eccentric	2	2	28	66	2	7	6	3	82	88	6	9
23. Emotionally stable	30	61	4	13		1	88	81	12	17		1
24. Enterprising	34	75					100	100				
25. Envious		1	21	54	13	20		1	62	72	38	27
26. Erratic	1	3	31	68	2	4	3	4	91	91	6	5
27. Excitable	2	6	31	67		2	6	8	91	89		3
28. Extortionate			4	29	30	44			12	39	88	59
29. Fair-minded	34	75					100	100				
30. Fault-finding			25	54	9	21			73	72	26	28
31. Fickle			29	58	5	17			85	77	15	23
32. Forgetful			34	74		1			100	99		1
33. Frivolous	2	5	28	65	2	5	6	7	82	87	6	7
34. Garrulous	1	1	26	62	7	12	3	1	76	83	21	16
35. Gentle	30	72	4	3			88	96	12	4		
36. Hasty	2		31	70	1	5	6		91	93	3	7
37. Heartless		1	14	30	20	44		1	41	40	59	59
38. Hot-tempered	1		22	64	11	11	3		65	85	32	15
39. Humorous	33	75	1				97	100	3			
40. Ill-mannered			12	27	22	48			35	36	64	64
41. Improvident			29	63	4	9			85	84	12	12
42. Insincere			12	32	22	43			35	43	65	57
43. Intemperate		2	23	46	11	26		3	68	61	32	35
44. Intolerant		1	14	48	20	26		1	41	64	59	35
45. Irritable			27	59	7	16			79	79	21	21
46. Large-hearted	30	74	4	1			88	99	12	1		
47. Lascivious			8	16	21	51			23	21	62	68
48. Lethargic			25	68	8	6			73	91	23	8

Trait Names	Frequency						Percentage					
	Des.		Undes.		Repre- hens.		Des.		Undes.		Repre- hens.	
	M	F	M	F	M	F	M	F	M	F	M	F
49. Malevolent		1	5	20	29	54		1	15	27	85	72
50. Mercenary	1		18	36	15	39	3		53	48	44	52
51. Miserly			12	26	22	49			35	35	65	65
52. Modest	28	66	5	8			82	88	15	11		
53. Moody		3	30	66	4	6		4	88	88	12	8
54. Obstinate	3	6	28	61	2	7	9	8	82	81	6	9
55. Overbearing			17	46	17	29			50	61	50	39
56. Over-critical			29	58	5	17			85	77	15	23
57. Panicky			20	62	14	13			59	83	41	17
58. Philanthropic	30	62	4	12		1	88	83	12	16		1
59. Profligate	1		13	31	19	41	3		38	41	56	55
60. Quarrelsome			21	57	13	18			62	76	38	24
61. Reasonable	34	75					100	100				
62. Reckless	4	5	27	63	3	6	12	5	79	84	9	8
63. Reliable	34	74		1			100	99		1		
64. Rude			15	24	19	51			44	32	56	68
65. Sagacious	34	70		5			100	93		7		
66. Secretive	1	2	31	59	2	13	3	3	91	79	6	17
67. Self-absorbed	1	1	31	65	2	8	3	1	91	87	6	11
68. Self-admiring	2	2	22	48	10	25	6	3	65	64	29	33
69. Self-centred	1		23	48	10	27	3		68	64	29	36
70. Self-consistent	33	73	1	2			97	97	3	3		
71. Self-controlled	33	75	1				97	100	3			
72. Self-deceiving			26	66	8	9			76	88	23	12
73. Self-depreciating	3	10	30	62	1	3	9	13	88	83	3	4
74. Self-distrustful		4	28	67	6	4		5	82	89	18	5
75. Selfish			14	38	20	36			41	51	59	48
76. Self-seeking	1	2	17	47	16	26	3	3	50	63	47	35
77. Sentimental	11	25	23	46		1	32	33	68	61		1
78. Shy	1	7	32	64	1	2	3	9	94	85	3	3
79. Short-tempered	1		24	66	9	9	3		70	88	26	12
80. Slanderous			5	18	29	56			15	24	85	75
81. Sober-minded	28	56	6	15		1	82	77	18	20		1
82. Spiteful			5	21	29	54			15	28	85	72
83. Straightforward	33	75	1				97	100	3			
84. Suspicious			25	48	9	27			73	64	26	36
85. Sympathetic	33	75	1				97	100	3			
86. Tactless			30	65	4	10			88	87	12	13
87. Timid		1	28	70	6	4		1	82	93	18	5
88. Treacherous			3	8	31	67			9	11	91	89
89. Unambitious	3	5	23	60	8	8	9	7	68	80	23	11
90. Undependable			22	51	12	23			65	68	35	31
91. Unjust			15	39	19	36			44	52	56	48
92. Unpractical	1	1	31	69	2	5	3	1	91	92	6	7
93. Unscrupulous			5	18	29	57			15	24	85	76
94. Unsympathetic			25	53	9	22			73	71	26	29
95. Untidy	1		29	68	4	7	3		85	91	12	9
96. Untruthful			12	20	22	55			35	27	65	73

Trait Names	Frequency						Percentage					
	Des.		Undes.		Repre- hens.		Des.		Undes.		Repre- hens.	
	M	F	M	F	M	F	M	F	M	F	M	F
97. Upright	33	74	1	1			97	99	3	1		
98. Versatile	34	72		3			100	96		4		
99. Vindictive			16	26	18	47			47	35	53	63
100. Well-mannered	34	75					100	100				

N = 34 Men.
75 Women.

Trait-names taken from List 1 are marked with an asterisk.

APPENDIX B.

(1)

Self-rating on Desirable Traits, List 1.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
22 - 23	9	22 - 23	5
20 - 21	8	20 - 21	12
18 - 19	6	18 - 19	8
16 - 17	11	16 - 17	7
14 - 15	6	14 - 15	7
12 - 13	0	12 - 13	6
10 - 11	7	10 - 11	2
8 - 9	1	8 - 9	0
6 - 7	1	6 - 7	1
4 - 5	0	4 - 5	1
2 - 3	1	2 - 3	0
		0 - 1	1
N	50	N	50
Mean	16.74 \mp .67	Mean	16.62 \mp .66
S.D.	4.71	S.D.	4.69

(2)

Rating Others on Desirable Traits, List 1.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
24 - 25	5	24 - 25	5
22 - 23	10	22 - 23	9
20 - 21	9	20 - 21	10
18 - 19	10	18 - 19	10
16 - 17	10	16 - 17	4
14 - 15	3	14 - 15	7
12 - 13	3	12 - 13	2
		10 - 11	1
		8 - 9	0
		6 - 7	1
		4 - 5	1
N	50	N	50
Mean	19.26 \mp .47	Mean	18.58 \mp .62
S.D.	3.30	S.D.	4.40

(3)

Self-rating on Undesirable Traits, List 1.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
22 - 23	1	20 - 21	1
20 - 21	0	18 - 19	1
18 - 19	0	16 - 17	0
16 - 17	4	14 - 15	1
14 - 15	2	12 - 13	3
12 - 13	2	10 - 11	2
10 - 11	4	8 - 9	4
8 - 9	6	6 - 7	8
6 - 7	7	4 - 5	11
4 - 5	7	2 - 3	10
2 - 3	8	0 - 1	9
0 - 1	9		
N	50	N	50
Mean	6.74 \mp .75	Mean	5.54 \mp .64
S.D.	5.33	S.D.	4.57

(4)

Rating Others on Undesirable Traits, List 1.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
		22 - 23	1
		20 - 21	3
18 - 19	4	18 - 19	1
16 - 17	2	16 - 17	1
14 - 15	4	14 - 15	1
12 - 13	4	12 - 13	3
10 - 11	5	10 - 11	4
8 - 9	3	8 - 9	4
6 - 7	4	6 - 7	9
4 - 5	8	4 - 5	7
2 - 3	10	2 - 3	6
0 - 1	6	0 - 1	10
N	50	N	50
Mean	7.66 \mp .80	Mean	7.14 \mp .85
S.D.	5.67	S.D.	6.01

APPENDIX C.

(1)

Self-rating on Desirable Traits, List 1.

Group 1 (Upper Half Repugnance Test)		Group 2 (Lower Half Repugnance Test)	
Score	Frequency	Score	Frequency
22 - 23	6	22 - 23	7
20 - 21	8	20 - 21	11
18 - 19	6	18 - 19	9
16 - 17	9	16 - 17	9
14 - 15	7	14 - 15	7
12 - 13	5	12 - 13	2
10 - 11	5	10 - 11	3
8 - 9	0	8 - 9	1
6 - 7	1	6 - 7	1
4 - 5	1		
2 - 3	1		
0 - 1	1		
N	50	N	50
Mean	15.78 \mp .74	Mean	17.42 \mp .55
S.D.	5.15	S.D.	3.88

(2)

Rating Others on Desirable Traits, List 1.

Group 1 (Upper Half Repugnance Test)		Group 2 (Lower Half Repugnance Test)	
Score	Frequency	Score	Frequency
24 - 25	4	24 - 25	6
22 - 23	10	22 - 23	11
20 - 21	7	20 - 21	10
18 - 19	10	18 - 19	9
16 - 17	10	16 - 17	5
14 - 15	4	14 - 15	5
12 - 13	3	12 - 13	2
10 - 11	1	10 - 11	0
8 - 9	0	8 - 9	0
6 - 7	0	6 - 7	2
4 - 5	1		
N	50	N	50
Mean	18.54 \mp .57	Mean	19.18 \mp .60
S.D.	4.01	S.D.	4.17

(3)

Self-rating on Undesirable Traits, List 1.

Group 1 (Upper Half Repugnance Test)		Group 2 (Lower Half Repugnance Test)	
Score	Frequency	Score	Frequency
22 - 23	1		
20 - 21	1		
18 - 19	1		
16 - 17	2	16 - 17	2
14 - 15	2	14 - 15	1
12 - 13	4	12 - 13	1
10 - 11	3	10 - 11	3
8 - 9	4	8 - 9	8
6 - 7	7	6 - 7	11
4 - 5	11	4 - 5	4
2 - 3	7	2 - 3	10
0 - 1	7	0 - 1	10
N	50	N	50
Mean	7.10 \mp .79	Mean	5.58 \mp .60
S.D.	5.52	S.D.	4.18

(4)

Rating Others on Undesirable Traits, List 1.

Group 1 (Upper Half Repugnance Test)		Group 2 (Lower Half Repugnance Test)	
Score	Frequency	Score	Frequency
22 - 23	1	22 - 23	1
20 - 21	1	20 - 21	2
18 - 19	2	18 - 19	4
16 - 17	1	16 - 17	2
14 - 15	2	14 - 15	1
12 - 13	3	12 - 13	4
10 - 11	6	10 - 11	4
8 - 9	4	8 - 9	2
6 - 7	3	6 - 7	11
4 - 5	8	4 - 5	4
2 - 3	11	2 - 3	5
0 - 1	8	0 - 1	10
N	50	N	50
Mean	6.94 \mp .83	Mean	8.02 \mp .91
S.D.	5.79	S.D.	6.39

APPENDIX D.

Self-rating on Abilities.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
16 - 17	1	14 - 15	1
14 - 15	1	12 - 13	7
12 - 13	4	10 - 11	16
10 - 11	15	8 - 9	14
8 - 9	20	6 - 7	18
6 - 7	12	4 - 5	2
4 - 5	7	2 - 3	1
		0 - 1	1
N	60	N	60
Mean	8.63 \mp .34	Mean	8.63 \mp .33
S.D.	2.63	S.D.	2.53

APPENDIX E.

Self-rating on Desirable Traits, List 3.

Group 1 (Upper Half Test 33)		Group 2 (Lower Half Test 33)	
Score	Frequency	Score	Frequency
14 - 15	1	14 - 15	2
12 - 13	5	12 - 13	6
10 - 11	21	10 - 11	13
8 - 9	14	8 - 9	10
6 - 7	11	6 - 7	14
4 - 5	3	4 - 5	10
2 - 3	3	2 - 3	0
		0 - 1	3
N	58	N	58
Mean	7.98 \mp .43	Mean	8.78 \mp .34
S.D.		S.D.	

APPENDIX F.

(1)

Occupation	Frequency			Percentage		
	L	D	I	L	D	I
N = 115 Women						
1. Accountant	14	81	20	12.18	70.47	17.40
2. Actress	49	46	20	42.63	40.00	17.40
3. Advertiser	29	40	46	25.23	34.80	40.02
4. Artist	72	22	21	62.64	19.14	18.27
5. Author	88	11	16	76.56	9.57	13.92
6. Bank clerk	5	85	25	4.35	73.95	21.75
7. Book keeper	11	84	20	9.57	73.08	17.40
8. Book seller	72	16	27	62.64	13.92	23.49
9. Broadcaster	65	20	30	56.55	17.40	26.10
10. Cartoonist	54	21	40	46.98	18.27	34.80
11. Caterer	39	40	36	33.93	34.80	31.32
12. Chemist	46	32	37	40.02	27.84	32.19
13. Cinema Attendant	10	89	16	8.70	77.43	13.92
14. Civil servant	20	51	44	17.40	44.37	38.28
15. Confectioner	34	37	44	29.58	32.19	38.28
16. Clerk	8	72	35	6.96	62.64	30.45
17. Cook	52	40	23	45.27	34.80	20.01
18. Dancer	60	33	22	52.20	28.71	19.14
19. Doctor	73	23	19	63.51	20.01	16.53
20. Dressmaker	41	40	34	35.67	30.45	29.58
21. Dress designer	76	14	25	66.12	12.18	21.75
22. Editor	71	18	26	61.77	15.66	22.62
23. Factory worker	8	91	16	6.96	79.17	13.92
24. Farmer	60	29	26	52.20	25.23	22.62
25. Film star	19	69	27	16.53	60.03	23.49
26. Florist	60	16	39	52.20	13.92	33.93
27. Fruiterer	24	38	53	20.88	33.06	46.11
28. Lawyer	44	40	31	38.28	34.80	26.97
29. Librarian	78	16	21	67.86	13.92	17.40
30. Milliner	27	39	49	23.49	33.93	42.63
31. Musician	89	9	17	77.43	7.83	14.79
32. Nurse	50	45	20	43.50	39.15	17.40
33. Poetess	46	30	39	40.02	26.10	33.93
34. Opera Singer	41	40	34	35.67	34.80	29.58
35. Painter	65	20	30	58.29	17.40	26.10
36. Photographer	70	14	31	60.90	12.18	26.90
37. Politician	39	57	19	33.93	49.59	16.53
38. Post office worker	14	70	31	12.18	60.90	26.97
39. Professor	41	33	41	35.67	28.71	35.67
40. Psychologist	76	15	24	66.12	13.05	20.88
41. Reporter	59	22	34	51.33	19.14	29.58
42. Research worker	77	9	29	66.99	7.83	25.23
43. Scientist	50	23	42	43.50	20.01	36.54
44. Secretary	47	22	46	40.89	19.14	40.02
45. Shop assistant	16	80	19	13.92	69.60	16.53
46. Social worker	77	21	17	66.99	18.27	14.79
47. Surgeon	57	38	20	49.59	33.06	17.40
48. Teacher	52	39	24	45.24	33.93	20.88
49. Telegraph Operator	15	66	34	13.05	57.42	29.58

Occupation	Frequency			Percentage		
	L	D	I	L	D	I
50. Typist	12	76	27	10.44	66.12	23.49
51. Waitress	13	87	15	11.31	75.69	13.05
52. Wireless operator	24	44	47	20.88	38.28	40.89

APPENDIX F.

(2)

Occupation	Frequency			Percentage		
	L	D	I	L	D	I
N = 42						
1. Accountant	7	24	11	16.67	57.14	26.19
2. Actor	18	14	10	42.86	33.33	23.81
3. Advertiser	10	17	15	23.81	40.48	35.71
4. Artist	25	11	6	59.52	26.19	14.29
5. Auctioneer	5	24	13	11.90	57.14	30.95
6. Author	37	0	5	88.10	0	11.90
7. Aviator	28	9	9	57.14	21.43	21.43
8. Architect	23	8	11	54.76	19.05	26.19
9. Army officer	15	19	8	35.71	45.24	19.05
10. Book seller	16	13	13	38.10	30.95	30.95
11. Botanist	11	20	11	26.19	47.62	26.19
12. Broadcaster	25	7	10	59.52	16.67	23.81
13. Builder	15	16	11	35.71	38.10	26.19
14. Carpenter	18	12	12	42.86	28.57	28.57
15. Cartoonist	23	10	9	54.76	23.81	21.43
16. Chemist	10	17	15	23.81	40.48	35.71
17. Cinema attendant	2	36	4	4.76	85.71	9.52
18. Civil servant	2	23	17	4.76	54.76	40.48
19. Clergyman	8	25	9	19.05	59.52	21.43
20. Clerk	3	33	6	7.14	78.57	14.29
21. Commercial traveller	8	25	9	19.05	59.52	21.43
22. Confectioner	7	24	11	16.67	57.14	26.19
23. Dentist	7	21	14	16.67	50.00	33.33
24. Doctor	24	11	7	57.14	26.19	16.67
25. Editor	27	7	8	64.29	16.67	19.05
26. Engineer	17	15	10	40.48	35.71	23.81
27. Factory worker	3	30	9	7.14	71.43	21.43
28. Factory manager	10	15	17	23.81	35.71	40.48
29. Farmer	19	10	13	45.24	23.81	30.95
30. Hotel manager	16	17	9	38.10	40.48	21.43
31. Insurance agent	2	31	9	4.76	73.81	21.43
32. Jeweller	6	20	16	14.29	47.62	38.10
33. Judge	18	10	14	42.86	23.81	33.33
34. Laboratory assistant	8	23	11	19.05	54.76	26.19
35. Lawyer	15	16	11	35.71	38.10	26.19
36. Librarian	24	9	9	57.14	21.43	21.43
37. Manufacturer	10	16	16	23.81	38.10	38.10
38. Musician	30	3	9	71.43	7.14	21.43
39. Painter	18	13	11	42.86	30.95	26.19
40. Photographer	25	6	11	59.52	14.29	26.19
41. Poet	19	15	8	45.24	35.71	19.05
42. Policeman	8	27	7	19.05	64.29	16.67
43. Politician	20	17	5	47.62	40.48	11.90
44. Psychologist	29	3	10	69.05	7.14	23.81
45. Printer	8	15	19	19.05	35.71	45.24
46. Professor	27	4	11	64.29	9.52	26.19
47. Reporter	22	7	13	52.38	16.67	30.95
48. Research worker	30	8	4	71.43	19.05	9.52

Occupation	Frequency			Percentage		
	L	D	I	L	D	I
49. Sailor	18	13	11	42.86	30.95	26.19
50. Salesman	6	32	4	14.29	76.19	9.52
51. Scientist	27	9	6	64.29	21.43	14.29
52. Sculptor	21	12	9	50.00	28.57	21.43
53. Social worker	22	4	16	52.38	9.52	38.10
54. Surgeon	25	11	6	59.52	26.19	14.29
55. Tailor	1	31	10	2.38	73.81	23.81
56. Zoologist	13	15	14	30.95	35.71	33.33

APPENDIX G.

(1)

Rating of Occupations on Social Prestige Scale (Appendix VIII (b)).
20 Men Students.

Occupation	High	%	Low	%	Med.	%
1. Accountant	5	25	1	5	14	70
2. Actor	4	20	1	5	15	75
3. Advertiser	3	15	6	30	11	55
4. Artist	6	30	2	10	12	60
5. Auctioneer	1	5	13	65	6	30
6. Author	11	55	1	5	8	40
7. Aviator	7	35	3	15	10	50
8. Architect	11	55	0	0	9	45
9. Army officer	8	40	4	20	8	40
10. Book seller	1	5	8	40	11	55
11. Botanist	3	15	1	5	16	80
12. Broadcaster	6	30	1	5	13	65
13. Builder	0	0	10	50	10	50
14. Carpenter	0	0	16	80	4	20
15. Cartoonist	3	15	7	35	10	50
16. Chemist	3	15	2	10	15	75
17. Cinema attendant	0	0	20	100	0	0
18. Civil servant	1	5	8	40	11	55
19. Clergyman	8	40	2	10	10	50
20. Clerk	1	5	14	70	5	25
21. Commercial traveller	0	0	13	65	7	35
22. Confectioner	1	5	12	60	7	35
23. Dentist	8	40	3	15	9	45
24. Doctor	15	75	0	0	5	25
25. Editor	12	60	1	5	7	35
26. Engineer	5	25	3	15	12	60
27. Factory worker	1	5	17	85	2	10
28. Factory manager	5	25	2	10	13	65
29. Farmer	6	30	4	20	10	50
30. Hotel manager	2	10	5	25	13	65
31. Insurance agent	0	0	13	65	7	35
32. Jeweller	1	5	5	25	14	70
33. Judge	20	100	0	0	0	0
34. Laboratory assistant	2	10	11	55	7	35
35. Lawyer	13	65	1	5	6	30
36. Librarian	0	0	3	15	17	85
37. Manufacturer	7	35	2	10	11	55
38. Musician	8	40	3	15	9	45
39. Painter	2	10	16	80	2	10
40. Photographer	0	0	10	50	10	50
41. Poet	11	55	4	20	5	25
42. Policeman	1	5	13	65	6	30
43. Politician	7	35	6	30	7	35
44. Psychologist	5	25	6	30	9	45
45. Printer	1	5	9	45	10	50
46. Professor	18	90	1	5	1	5
47. Reporter	0	0	4	20	16	80

Occupation	High	%	Low	%	Med.	%
48. Research worker	8	40	1	5	11	55
49. Sailor	4	20	12	60	4	20
50. Salesman	0	0	17	85	3	15
51. Scientist	12	60	0	0	8	40
52. Sculptor	9	45	3	15	8	40
53. Social worker	3	15	2	10	15	75
54. Surgeon	20	100	0	0	0	0
55. Tailor	0	0	14	70	6	30
56. Zoologist	5	25	2	10	13	65

Rating of Occupations on Social Prestige Scale (Appendix VIII(a)).
30 Women Students.

Occupation	High	%	Low	%	Med.	%
1. Accountant	7	25.33	2	6.66	21	70.00
2. Actress	10	33.33	2	6.66	18	60.00
3. Advertiser	3	10.00	3	10.00	24	80.00
4. Artist	24	80.00	0	0	6	20.00
5. Author	26	86.66	0	0	4	13.33
6. Bank clerk	0	0	8	26.66	22	73.33
7. Book keeper	0	0	12	40.00	18	60.00
8. Book seller	0	0	8	26.66	22	73.33
9. Broadcaster	17	56.66	0	0	13	43.33
10. Cartoonist	8	26.66	5	16.66	17	56.66
11. Caterer	0	0	8	26.66	22	73.33
12. Chemist	5	16.66	0	0	25	83.33
13. Cinema attendant	0	0	28	93.33	2	6.66
14. Civil servant	3	10.00	4	13.33	23	76.66
15. Confectioner	0	0	19	63.33	11	36.66
16. Clerk	0	0	18	60.00	12	40.00
17. Cook	0	0	22	73.33	8	26.66
18. Dancer	1	3.33	14	46.66	15	50.00
19. Doctor	29	96.66	0	0	1	3.33
20. Dressmaker	0	0	14	46.66	16	53.33
21. Dress designer	14	46.66	1	3.33	15	50.00
22. Editor	27	90.00	0	0	3	10.00
23. Factory worker	0	0	28	93.33	2	6.66
24. Farmer	8	26.66	3	10.00	19	63.33
25. Film star	12	40.00	1	3.33	17	56.66
26. Florist	1	3.33	17	56.66	12	40.00
27. Fruiterer	0	0	19	63.33	11	36.66
28. Lawyer	28	93.33	0	0	2	6.66
29. Librarian	5	16.66	1	3.33	24	80.00
30. Milliner	0	0	12	40.00	18	60.00
31. Musician	24	80.00	0	0	6	20.00
32. Nurse	6	20.00	3	10.00	21	70.00
33. Poetess	23	76.66	1	3.33	6	20.00
34. Opera singer	25	83.33	0	0	5	16.66
35. Painter	12	40.00	10	33.33	8	26.66
36. Photographer	0	0	2	6.66	28	93.33
37. Politician	26	86.66	1	3.33	3	10.00
38. Post office worker	0	0	17	56.66	13	43.00
39. Professor	29	96.66	0	0	1	3.33
40. Psychologist	25	83.33	0	0	5	16.66
41. Reporter	1	3.33	1	3.33	28	93.33
42. Research worker	24	80.00	0	0	6	20.00
43. Scientist	27	90.00	0	0	3	10.00
44. Secretary	1	3.33	2	6.33	27	90.00
45. Shop assistant	0	0	28	93.33	2	6.66
46. Social worker	6	20.00			24	80.00
47. Surgeon	30	100.00	0	0	0	0
48. Teacher	12	40.00	0	0	18	60.00
49. Telegraph operator	0	0	18	60.00	12	40.00
50. Typist	0	0	19	63.33	11	36.66
51. Waitress	0	0	30	100.00	0	0
52. Wireless operator	1	3.33	3	10.00	26	86.66

APPENDIX H.

Interest in Occupations of High Social Standing.

Group 1 (Lower Half Test 33)		Group 2 (Upper Half Test 33)	
Score	Frequency	Score	Frequency
16 - 17	1	14 - 15	2
14 - 15	2	12 - 13	12
12 - 13	9	10 - 11	12
10 - 11	14	8 - 9	13
8 - 9	14	6 - 7	16
6 - 7	6	4 - 5	5
4 - 5	10	2 - 3	3
2 - 3	3	N	63
N	59	Mean	8.72 \mp .38
Mean	8.74 \mp .42	S.D.	2.98
S.D.	3.25		

APPENDIX K.

Self-rating on Lapses of Conduct.

Group 1 (Lower Half Test 33)		Group 2 (Upper Half Test 33)	
Score	Frequency	Score	Frequency
14	3	15	1
13	9	14	4
12	9	13	10
11	10	12	11
10	11	11	15
9	5	10	10
8	8	9	3
7	3	8	2
6	1	7	3
5	1		
N	60	N	59
Mean	10.47 \mp .27	Mean	11.22 \mp .23
S.D.	2.11	S.D.	1.79

APPENDIX L.

Self-rating on Undesirable Traits, List 3.

Group 1 (Lower Half Test 33)		Group 2 (Upper Half Test 33)	
Score	Frequency	Score	Frequency
10 - 11	2	12 - 13	1
8 - 9	6	10 - 11	1
6 - 7	7	8 - 9	4
4 - 5	10	6 - 7	13
2 - 3	23	4 - 5	16
0 - 1	10	2 - 3	13
		0 - 1	10
N	58	N	58
Mean	3.88 \mp .36	Mean	4.33 \mp .36
S.D.	2.71	S.D.	2.71

APPENDIX M.

Interest in Occupations of Low Social Standing.

Group 1 (Lower Half Test 33)		Group 2 (Upper Half Test 33)	
Score	Frequency	Score	Frequency
14 - 15	1		
12 - 13	1		
10 - 11	1	10 - 11	2
8 - 9	4	8 - 9	3
6 - 7	14	6 - 7	4
4 - 5	14	4 - 5	15
2 - 3	16	2 - 3	17
0 - 1	8	0 - 1	22
N	59	N	63
Mean	4.57 \mp .38	Mean	3.07 \mp .33
S.D.	2.94	S.D.	2.60

APPENDIX N.

Self-rating on Belief in Superstition.

Group 1 (Lower Half Test 33)		Group 2 (Upper Half Test 33)	
Score	Frequency	Score	Frequency
10	11	10	5
9	6	9	5
8	10	8	7
7	4	7	7
6	3	6	5
5	4	5	3
4	2	4	5
3	2	3	4
2	1	2	0
		1	0
		0	1
N	43	N	42
Mean	7.58 \mp .35	Mean	6.60 \mp .38
S.D.	2.29	S.D.	2.46

TABLE I.

CORRELATION MATRIX.....FIRST FACTOR LOADINGSGROSS PRODUCTS OF LOADINGS.

Test.	2	6	10	5	8	11	9	4	3	7
2	(.434) .044	.434 .099	.428 .150	.030 .044	-.158 .113	-.255 .095	-.198 .056	.279 .124	-.100 .045	-.040 .082
6	.434 .099	(.736) .221	.736 .335	.166 .098	-.221 .251	-.244 .212	.070 .124	.168 .277	-.165 .100	.221 .184
10	.428 .150	.736 .335	(.736) 508	.339 .149	-.221 .381	.000 .322	.195 .189	.281 .420	.048 .152	.344 .279
5	.030 .044	.166 .098	.339 .149	(.339) .043	-.245 .111	-.165 .094	-.163 .055	.243 .123	.300 .044	.000 .082
8	-.158 .113	-.221 .251	-.221 .381	-.245 .111	(.804) .285	.804 .241	.463 .142	.435 .314	.305 .114	.195 .209
11	-.255 .095	-.244 .212	.000 .322	.165 .094	(.804) .241	.185 .120	.150 .266	.150 .096	.150 .400	.177
9	-.198 .056	.070 .124	.195 .189	.158 .070	(.463) .156	.158 .056	.000 .056	.000 .056	-.100 .104	
4	.279 .124	.168 .277	.281 .420	.435 .314	(.435) .347	.045 .125	.045 .125	.045 .125	.190 .230	
3	-.100 .045	-.165 .100	.048 .152	.300 .044	.114 .096	.150 .096	.000 .056	.045 .045	(.305) .045	-.026 .083
7	-.040 .082	.221 .184	.344 .279	.000 .082	.195 .209	.400 .177	-.100 .104	.190 .230	-.026 .083	(.400) .153
Er.	.854	1.901	2.886	.844	2.161	1.829	1.073	2.384	.862	1.584
K ₁₂	.211	.470	.713	.208	.534	.452	.265	.589	.213	.391
K ₁	.044	.221	.508	.043	.285	.204	.070	.347	.045	.153

$16.378 = \frac{Er}{4.046} = \sqrt{Er}$
 $4.046 = \frac{Er}{16.378} = \sqrt{Er}$

First Residual Matrix.

Test.	x 2	x 6	x 10	x 5	8	11	9	x 4	3	*
x2	.390	.335	.278	-.014	(±).271	(±).350	(+).254	.155	(±).145	(+).120
x6	.335	.515	.401	.068	(+).472	(+).456	(+).054	-.109	(+).265	(-).037
x10	.278	.401	.228	.190	(+).602	(+).322	(-).006	-.109	(+).104	(-).065
x5	-.014	.068	.190	.296	(+).356	(+).259	(+).218	.120	(-).256	(+).082
8	(+).271	(+).472	(+).602	(+).356	.519	.563	.321	(+).121	.191	-.014
11	(+).360	(+).456	(+).322	(+).259	.563	.600	.065	(+).116	.054	.223
9	(+).254	(+).054	(+).006	(+).218	.321	.065	.393	(-).002	-.056	-.204
x4	.155	-.109	-.139	.120	(-).121	(+).116	(-).002	.088	(+).080	(+).040
3	(+).145	(+).265	(+).104	(+).256	.191	.054	-.056	(+).080	.260	+.109
*7	(+).120	(-).037	(-).065	(+).082	-.014	.223	-.204	(+).040	-.109	.247
E+	1.158	1.356	1.168	.930	1.715	1.505	787	486	.761	.572
E-	1.154	1.356	1.167	.929	1.715	1.503	786	484	.759	.569

Tests 2, 6, 10, 5, 4 & 7 have been reflected. Test 7 has also been dereflected.

Gross Products of Loadings.

3

TEST.	2	6	10	5	8	11	9	4	3	7
2	(.350) .301	.335 .320	.278 .307	.014 .185	.271 .436	.350 .399	.254 .130	.155 .040	.145 .092	.120 .034
6	.335 .320	(.472) .339	.401 .326	.068 .196	.472 .462	.456 .423	.054 .137	-.109 .042	.265 .097	-.037 .037
10	.278 .307	.401 .326	(.602) .314	.190 .189	.602 .445	.322 .407	-.006 .132	-.139 .040	.104 .094	-.065 .035
5	-.014 .185	.068 .196	.190 .189	(.356) .114	.356 .268	.259 .245	.218 .080	.120 .024	-.256 .056	.082 .021
8	.271 .436	.472 .462	.602 .445	.356 .268	(*.602) .630	.563 .577	.321 .187	-.121 .057	.191 .133	-.014 .050
11	.350 .399	.456 .423	.322 .407	.259 .245	.563 .577	(.563) .528	.065 .172	.116 .052	.054 .121	.223 .046
9	.254 .130	.054 .137	-.006 .132	.218 .080	.321 .187	.065 .172	(.321) .056	-.002 .017	-.056 .039	-.204 .015
4	.155 .040	-.109 .042	-.139 .040	.120 .024	-.121 .057	.116 .052	-.002 .017	(.155) .005	.080 .012	.040 .004
3	.145 .092	.265 .098	.104 .094	.256 .056	.191 .133	.054 .121	-.056 .039	.080 .012	(.265) .028	-.109 .010
7	.120 .034	-.037 .037	-.065 .035	.082 .021	-.014 .050	.223 .046	-.204 .015	.040 .004	-.109 .010	(.223) .004
Er.	2.244	2.377	2.289	1.379	3.243	2.971	.965	.295	.683	16.705 = $\sqrt{\frac{Er}{EK}}$
K22	.549	.582	.560	.337	.794	.727	.236	.072	.167	4.087 = $\sqrt{\frac{Er}{EK}}$
K2	.301	.339	.314	.114	*.630	.528	.056	.005	.028	4.087 = $\sqrt{\frac{Er}{EK}}$

Second Residual Matrix.

TEST.	2	6	X 10	X 5	X 8	11	X 9	4	3	7
2	(.049)	.015	(+) -.029	(+) -.199	(+) -.165	-.049	(-) .124	.115	.053	.086
6	(+) .015	(.133)	(-) .075	(+) -.128	(-) .010	.033	(+) -.083	(+) -.151	.168	(+) -.074
x10	-.029	.075	(.288)	.001	.157	(+)	-.085	(-) -.179	.010	-.100
X5	(+) .199	-.128	.001	(.242)	.088	(-) .014	.138	(-) .096	(+) .312	(-) .061
X8	(+) -.165	(-) .010	.157	.088	(-.028)	(+) -.014	.134	(+) -.178	(-) .058	(+) .064
11	-.049	.033	(+) .085	(-) .014	(+) .014	(.035)	(+) .107	.064	-.067	+ .177
X9	(-) .124	(+) .083	-.138	.138	.134	(+) -.107	(.265)	(+) .019	(+) .095	(+) -.219
4	.115	-.151	(+) .179	(-) .096	(+) .178	.064	(+) .019	(.150)	.068	.036
3	.053	.168	(-) .010	(+) -.312	(-) .058	-.067	(+) .095	.068	(.237)	-.119
7	.086	-.074	(+) .100	(-) .061	(+) .064	.177	(+) .219	.036	-.199	(.219)
E+	.442	.434	.531	.640	.447	.323	.661	.527	.594	.579
E-	.442	.436	.531	.639	.449	.322	.661	.527	.593	.576

Tests 10, 5, 8, and 9 have been reflected.