

It seems to the writer that an understanding of a patient's concept of self is a complex clinical task which is obviously incompatible with the demands of applied psychology, but it is possible that these theories can contribute towards the efficacy of applied work. It is reasonable to expect that further research will reveal significant cornerstones in the structure of the self-concept. It is possible, for instance, that a discrepancy in the individual's ability to spell and his idea of his spelling ability may be relatively unimportant in overall adjustment whereas discrepancies in other areas (like some of the biologically based needs) may be integral to adjustment.

If some such fundamental principles concerning the structure of the self-concept are established, vocational guidance may well concern itself not only with the appraisal of certain acquired skills and knowledge and of the original capacities and endowments of the individual but also with the individual's own appraisal of these factors. This is, in fact, one of the objects of the interest schedules and the personal interviews which are generally included in a scheme of vocational guidance. It may be advantageous to make the interviewer conscious of the fact that he is studying the discrepancies between the individual's own appraisal of certain elements and the assessment of these elements by objective methods, and that the magnitude of these discrepancies may play an important role in overall adjustment.

The Cross-sectional Approach to Theories of Personality.

In the cross-sectional approach to theories of personality the objective is the isolation and description of specific behaviour traits which play a significant role in the structure of the personality. Thereafter, methods of expressing individual variations in respect of these traits, preferably in quantitative form, are derived and form the basis of the personality assessment. This procedure requires a nice balance between depth of theoretical understanding and consequent interpretation of the traits and accuracy and finesse

in mathematical expression.

There are two types of investigators who have done a great deal to bring discredit on this approach to personality assessment. There are firstly those who subscribe to what they unjustly call "clinical insight" which in their hands deteriorates into a blind or at best intuitive selection of variables which often overlap to such an extent that the majority of the variables could be discarded with little loss to the total information gained. On the other hand, in the rigid approach of the formalistic statistician there is often a complete disregard of the theoretical implications of the isolated variables in terms of a framework of personality and their knowledge extends only to the fact that certain differences are three times their respective standard errors.

R.B. Cattell has not side-stepped the theoretical issues involved in the measurement of traits and in his book entitled: "Description and Measurement of Personality" has attempted to formulate a theoretical background against which researches in this field can be carried out. He describes a trait as a pattern of behaviour composed of a number of trait elements which constitute a functional unity. The criterion for the latter is that these trait elements should covary, if not in all situations, at least in a wide variety of possible situations.

If a trait is used to describe differences in a population of subjects it is assumed that it is similar in all people and present in various degrees in all. Cattell ascribes to G.W. Allport's view that all traits are to some extent unique but that the effects of broadly similar physical and cultural environments and common racial heredity ensure in mature adults substantially similar forms of behaviour. "It is therefore feasible to say, with respect to some traits, that different individuals have more or less of the same trait. But we must not forget that this field of uniqueness approaches only asymptotically the state of commonness."¹

The unique traits are of great importance in the clinical study of the particular individual but in psychological surveys the

¹ Cattell, Raymond B. (2) p. 61

investigator is more often concerned with the common traits. Cattell subdivides the common traits into what he designates as "surface traits" and "source traits".

These divisions correspond to two different mathematical statistical ways of expressing covariation in trait elements. The surface traits are the clusters of elements which can be extracted from a particular correlation matrix, the source traits are the factors which span the space defined by the correlation matrix.

A cluster is any group of trait elements which intercorrelate to a defined extent and the number of clusters in a correlation matrix will depend on the criterion of intercorrelation accepted. In some instances where there are overlapping clusters the establishment of boundaries and the criterion of intercorrelation accepted would be relatively arbitrary. The number of factors, on the other hand, is defined by the correlation matrix and is equal to the rank of that matrix.

The influence of a factor is generally more pervasive, in other words, affects a larger number of trait elements than the number included in a particular cluster. Perhaps the most important difference between a cluster and a factor is that a cluster is more nearly a literal statement of empirically observed connections whereas a factor is an analytical interpretation of the underlying covariation of the elements.

Thus Cattell thinks of clusters as indicating syndromes or a conglomerate of behaviour patterns and factors as indicating the underlying functional unities. He states that: "The object of describing and measuring personality with practicable economy by relatively few variables is not so well achieved by clusters as by factors."¹

Although source traits appear as factors we are warned that not every factor solution gives the source traits, some factors being merely mathematical artifacts. Here we encounter the method-

¹ Ibid., p. 78

ological difficulties involved in factor analysis, especially with regard to the rotation of axes. Cattell surveys some of the current methods of factoring in terms of the types of factors that are likely to be necessary to span the domain of personality. He considers that a fairly large number of general factors and overlapping group factors are to be expected, there might also be specific factors, and except in the abilities we would not expect either general or group factors to be wholly positive.¹ He comes to the conclusion that Thurstone's centroid method of factoring with rotation is the most suitable in this field of research because it alone gives the desired flexibility in number, type and sign of factors which will probably be demanded in the study of personality structure.

He considers that some form of rotation of axes is necessary and that some of the personality factors are likely to be correlated or oblique. Thurstone's criterion of "rotation to simple structure" is based on the general scientific principle of parsimony, and, as its title suggests, strives for the simplest factor solution for each correlation matrix. Cattell considers that these principles should be extended and that simple structure should be sought not for each matrix separately but with respect to a number of matrices at a time. He suggests the "principle of proportional profiles or simultaneous simple structure" but since the labour involved in its application becomes prohibitive when a number of factors are present, he adopts Thurstone's criterion of rotation which, he says, approximates to his solution of proportional profiles.²

Since this treatise is concerned with the underlying functional unities in the domain of temperament, Cattell's hypotheses will only be summarised with respect to the source traits or factors. He distinguishes two types of source traits, those in which the trait elements covary because they stem from a single constitutional influence and those in which the covariation is due to an external environmental influence. These are termed

1 Ibid., p. 279

2 Ibid., pp. 292, 293

respectively "constitutional traits" and "environmental mould traits". This is not a complete dichotomy but the distinction is made in terms of the predominating influence.¹

Both the constitutional traits and the environmental mould traits extend over what Cattell has called the "dynamic", "temperament" and "ability" modalities. The motivational and conative traits fall into the dynamic modality. The basic needs and drives would represent the constitutional traits in this modality and the developed sentiments and attitudes represent the environmental mould dynamic traits. In the temperament modality there are the constitutional temperament traits which he describes as excitability, emotionality, speed of response, perseveration etc. and these tendencies modified by the environment. In the ability modality (cognitive traits) the distinction is drawn between the constitutional inherited abilities or capacities like intelligence, musical and artistic ability and the environmental mould traits which consist of acquired skills and information.²

He emphasises that a source trait or mathematical factor can extend over all three modalities, in fact in naturalistic life situations this is almost inevitably so. If factor studies very often yield factors which are confined to one modality, the reason for this is merely the selection of the trait elements included in the experimental design. Factors which would be obtained from naturalistic life situations Cattell calls "naturalistic or wholistic factors". The dynamic, temperament and ability modalities are restricted areas of these naturalistic factors, obtained by squeezing out certain modalities and might, therefore, be more satisfactorily termed "conditional modalities", and the corresponding factors called "conditional factors". The latter, being less complex unities, are more widely useful instruments in research. The wholistic factor could be replaced by three conditional factors each with its

1 Ibid., p. 69

2 Ibid., p. 162

appropriate loading.¹

Similarly, no actual behaviour is of one modality only. For example, a source trait element will usually have its total variance accounted for by more than one factor, these factors being of different conditional modalities. In practice, however, one chooses those few variables, the greater portion of whose variance is accounted for by one factor, to represent that particular factor. In which instance the trait element might be considered to represent one modality.²

Against this theoretical background Cattell proceeds to list and classify the principle source traits which are indicated in available researches using data obtained from behaviour ratings, self-inventories, objective test measurements and clinical studies. This in itself is a task of Herculean proportions. He proceeds, however, to an investigation of his own in which he claims to span the entire domain of personality, including the dynamic, temperament and ability modalities, in one factor study. This is an undertaking which stuns the imagination and to the writer it seems doubtful whether this can actually be accomplished. It seems that research has not yet advanced to the stage where the limits of the domain of personality can be accurately defined. In chapter four the possibility of spanning even the temperament modality on its own is discussed.

Cattell maintains that: "Only the total vocabulary of personality description, confirmed by centuries of utility, can be certain to provide the total personality space and to occupy the complete 'personality sphere'."³ He states that the dictionary reveals some four thousand trait terms in most modern developed languages. By elimination of synonyms (for doubtful synonyms both words were retained) the list of basic traits was reduced to about 160. To these were added words from technical psychological description, bringing the list up to 171. These traits were listed in the form of polar opposites.⁴ The traits

1 Ibid., pp. 182, 187

2 Ibid., p. 164

3 Ibid., p. 294

4 Ibid., pp. 219 to 232

were assessed by using behaviour rating scales and the inter-correlations calculated.

Sixtytwo clusters were obtained from this matrix which represented the 171 basic traits. This was still too large a population to be practicable for use in a factor study, thus the clusters were combined into nuclear clusters where there was overlap and eventually reduced to 35. Cattell maintains that the loss of dimensions in representing these clusters as traits would not affect the main structure of personality, and that these dimensions could be investigated later in smaller intensive researches.¹

This list of 35 traits yielded 12 factors or source traits after rotation. He and his assistants then undertook the tremendous task of matching these twelve source traits with those traits which had been established in clinical studies and in researches using data derived from behaviour ratings, self-inventories and objective tests. He does not claim that this is a completely objective matching, due to the technical difficulties of combining factors from different researches. Some of the many technical difficulties which arise are due to the fact that different investigators have used different populations of traits as their starting point, some of the traits widely different, others subtly different. Some of the correlations are based on items, others on groups of items which seemed to go together, and still others on clusters. Furthermore, the size of populations and of item lists and other aspects of reliability require different weights to be given to the findings of different researches. Finally, discrepancies in factors might have been introduced due solely to different methods of rotation.²

As a result of these difficulties Cattell states that: "Imagination, psychological experience, and intuition based on intensive study are necessary in getting the best possible matches between patterns drawn from different source material."³ He describes the method of matching employed as follows: " we have proceeded with cross-

1 Ibid., p. 295

2 Ibid., p. 354

3 Ibid., p. 470

identifications (1) by matching factors having approximately synonymous variables in their patterns, having about the same order of saturation in these variables, and having the same 'feel' of the whole pattern, as sensed in the manner indicated above. (2) By checking, in appropriately similar studies, to see that major factors, high in mean contribution to the variance, are matched with major factors and minor factors with minor ones. (3) By being alert to see that no factor in one research is matched with more than one factor in any other research. (2) and (3) provide quite considerable assistance."¹

Cattell was able to match all twelve of the source traits, some with more and some with less assurance. These essential factors he arranges roughly in order of their importance. In a survey of this sort space does not permit of a detail discussion of the reasons for matching and the interpretations. Only the title headings of the factors will be listed.²

- Factor I Cyclothymia - v. - Schizothymia
- Factor II Intelligence, General Mental Capacity - v. - Mental Defect
- Factor III Emotionally Mature Stable Character - v. - Demoralised
 General Emotionality
- Factor IV Dominance-Ascendancy (Non-euphoric Hypomania) - v. - Sub-
 missiveness
- Factor V Surgency - v. - Agitated Melancholic Desurgency
- Factor VI Sensitive, Anxious Emotionality - v. - Rigid Tough Poise
- Factor VII Trained, Socialised, Cultured Mind - v. - Boorishness
- Factor VIII Positive Character Integration - v. - Immature, Dependent
 Character
- Factor IX Charitable, Adventurous Cyclothymia - v. - Obstructive,
 Withdrawn Schizothymia
- Factor X Neurasthenia - v. - Vigorous, "Obsessional Determined"
 Character
- Factor XI Hypersensitive, Infantile Sthenic Emotionality - v. -
 Phlegmatic Frustration Tolerance
- Factor XII Surgent Cyclothymia - v. - Paranoia

Whether or not one agrees with Cattell that these twelve factors describe the entire "personality sphere" one must agree in principle

1 Cattell, loc. cit.

2 Ibid., pp. 475 to 495

that co-ordinating studies are necessary in the most important task of introducing order into the welter of personality factors obtained from different researches. It is also apparent that the labour involved in such studies, if the entire domain of personality is to be covered, could only be accomplished by large organised bodies of workers.

The writer suggests that these co-ordinating studies would be far more manageable if the following procedure were adopted. The sub-areas of personality should first be investigated, in which case, the investigator must not lose sight of the fact that he is dealing with conditional factors and that ultimately the relationships between these factors and those from other sub-areas must be established. The co-ordinating study would then consist of an investigation into the relationships existing between a finite number of factors defining the sub-areas of personality, rather than an investigation into the relationships existing between the much larger number of trait elements which would be required to define the total area. Second-order analyses may find their greatest application here.

When discussing his twelve primary traits Cattell states: "Our present position is that, by reason of being based on the whole personality sphere, these factors, in contrast to those obtained from most artificially 'conditional' tests, are almost certain to be wholistic factors. However, judged by their apparent psychological nature, a surprisingly high proportion of them are predominantly temperamental or constitutional in nature. Indeed, the indication seems to be that environmental mold traits will prove only rarely to be general factors. These important traits perhaps need to be looked for among group and specific factors."¹

This suggests that the influence of the temperament traits is most pervasive. Cattell also states that their influence is most constant.² By definition this should be so and they should influence the formation of attitudes, the selection of subjects for study, the choice of a vocation, in fact, they should influence every part of human behaviour. Since they possess these important attributes it

1 Ibid., p. 496

2 Ibid., p. 564

seems reasonable to suggest that the constitutional traits, especially those which are included in what Cattell has called the temperament modality, constitute the sub-area which affords a logical point of departure for a study of personality.

These four approaches to the study of personality have all contributed to general psychological knowledge. Each emphasises a different aspect of personality structure and the usefulness and applicability of each approach is largely determined by the aim of the psychological investigation. In the classical psychoanalytic approach the emphasis is on unconscious motivations and the biologically based impulses. The physiological approach is not so much concerned with the urgency of the instinctive drives and the methods whereby they achieve expression but rather with the classification of individuals according to independent physiological continua and the association between physiological and psychological characteristics. In the wholistic approach the emphasis is on the interaction of the constitutional and environmental elements in the structure of the personality and there is a tendency to deal with the finished product of the personality structure without investigating the biological endowments which set limits to the development of the organism.

With the exception of systems built entirely on isolated anthropometric measurements (which have not to date yielded fruitful results) these three approaches are best suited to a long-term clinical investigation of the individual. In vocational guidance and other applied work, time is unfortunately often limited, and it is necessary to obtain information concerning specific attitudes and behaviour responses which are essential to a particular occupation.

The cross-sectional approach to personality is most easily adapted to this type of work, provided always that the behaviour characteristics studied form patterns of behaviour which are seen in the light of a coherent theory of personality.

It has already been suggested that a study of personality by the cross-sectional method should start with an investigation of the temperament modality. In the following chapter a scheme of assessment is described which, the originators claim, is based on some of the independent temperament traits.

CHAPTER III.

THE HEYMANS-WIERSMA SCHEME OF TEMPERAMENT ASSESSMENT.

- (a) Description of the Heymans-Wiersma Temperament Variables.
- (b) Biesheuvel's investigation of the Heymans-Wiersma Variables.
- (c) The reliability and validity of this scheme of assessment as evidenced by its use in the Aptitude Tests Section, S.A.A.F.
- (d) Summary and critical survey of the concepts underlying this scheme of temperament assessment.

The primary purpose of the Aptitude Tests Section of the South African Air Force, established during the second world war and throughout under the command and direction of S. Biesheuvel, was the selection of suitable personnel to be trained as pilots. The potential pilots were selected on the basis of intelligence, flying aptitude, and temperament and personality make-up. The latter was essentially the estimate of the potential pilot's ability to withstand the stress and strain of prolonged periods of flying under battle conditions. During the course of five years association with this organisation the writer was able to observe and to study in some detail the results achieved with a particular scheme of temperament assessment.

The basis of this scheme is essentially the postulation of a number of innately determined unitary variables. The variables are continuous and occur in varying degrees in the individual members of the population. All are present in each individual and the temperament of the individual will be determined by the degree to which he possesses each of these variables, and also by their dynamic inter-relations. Personality is defined as the resultant of the interaction of these variables with the environmental conditions to which they are exposed. It follows that there will be as many different personalities as there are different environmental conditions acting upon the different temperamental make-ups. The resulting diversity and complexity inherent in the concept of personality will make a comprehensive classification extremely cumbersome if not impossible. On the other hand these difficulties will not be encountered if attention is confined to the

inter-relationships of a finite number of temperament variables. This classification will, however, have limited practical value unless from a knowledge of the temperament type the psychologist can predict behaviour under given environmental conditions, and can relate these behaviour characteristics to other systems of describing personality which have proved useful in specific situations. This view is expressed by Biesheuvel as follows: "A distinction is drawn between that psycho-physical equipment which could be called Temperament, and its elaboration into unique emergents or personalities, under the influence of environment, experience, intelligence, and the urgency of instinctive drives such as sex. Once the nature of Temperament has thus been defined the different manifestations in the shape of combinations of fundamental variables can be related to those Personality Gestalten, which have already been shown to exist. In practice this means a typological or 'factor' Temperament scheme in which the implications of each Temperament type (i.e. potential adjustments of mal-adjustments, a tendency to develop certain attitudes or complexes under specific environmental conditions) are clearly established."¹

Biesheuvel considered that a scheme of assessment which held out some hope for the realisation of some of the criteria which he postulated as necessary in determining the temperament of the individual, was one devised by G. Heymans who published his work at the beginning of this century. It was elaborated and refined by a number of his followers including E. Wiersma whose work included an investigation into the possibility of a neural basis for one of the factors. The Heymans-Wiersma scheme utilises three variables for a typology. These are:

1. Primary-Secondary Function
2. Activity
3. Emotionality

"Heymans defines them as follows: In general we call someone Emotional on the basis of the frequency and strength of his affective reactions,

¹ Biesheuvel, S. (22) p. 313

in proportion to their causes; Active on the basis of frequency and energy of his activities, in proportion to their motives; Primary or Secondary Functioning according to the degree in which cognitive and affective processes 'perseverate' (German: nachwirken), in proportion to their importance."¹

It must be remembered that it is postulated that each of these variables must occur in every member of the population but in varying degrees of strengths. They must be continuous variables and we should be able to describe the behaviour attributes which are characteristic of one pole of the continuum (say) Secondary Function and trace them throughout the scale to the opposite pole, Primary Function. Similarly for Activity through to Inactivity and Emotionality through to Non-Emotionality.

These variables will be described in greater detail in the following chapter. Suffice it to say here that in behavioural terms Secondary Function can best be described as a tendency for awareness to persist after the original stimulus which caused it has disappeared, thus Secondary Functioning individuals will be slow and cautious in their response to stimuli whereas Primary Function will be characterised by spontaneous and impulsive reaction to stimuli. Activity may be described in behavioural terms as the fixity of purpose and determination with which the individual will tackle obstacles with which he may be beset in his attempt to attain a particular goal. Emotionality may best be described as the intensity of affective experiences. Function will to some extent determine the frequency with which emotions are aroused, but on balance the Emotional individual should not only "feel" more deeply but also more often,

From these three variables eight different combinations result, Heymans used them as the basis for a typology and applied a type name to each as follows:-

¹ Biesheuvel, S. (22) p. 316

Secondary	- Active	- Emotional	"Passionate Type"
Primary	- Active	- Emotional	"Choleric Type"
Secondary	- Active	- Non-Emotional	"Phlegmatic Type"
Primary	- Active	- Non-Emotional	"Sanguine Type"
Secondary	- Inactive	- Emotional	"Sentimental Type"
Primary	- Inactive	- Emotional	"Nervous Type"
Secondary	- Inactive	- Non-Emotional	"Apathetic Type"
Primary	- Inactive	- Non-Emotional	"Amorphous Type"

Biesheuvel considered that the chief flaws in the presentation of the scheme by Heymans were the unsatisfactory behaviour criteria regarded as characteristic of the individual variables and a general lack of systematic study of these factors. In his own research he attempted a systematic statistical study of these variables. On the basis of weighted items from a questionnaire the total group of 645 cases was divided on the basis of (a) Function, (b) Activity, (c) Emotionality. Purely for the purposes of avoiding undue statistical manipulation and in order to bring the results sharply into focus, the variables were treated as dichotomous in this investigation. The average percentage incidence of the criteria for each aspect of each variable was compared for these three sets of dichotomous groupings. The results are given below:

Table II.¹

To Illustrate the Existence of the Three Variables, from a Comparison of the Average Percentage Incidences of the Criteria for each Aspect of each Variable, in each of the Dichotomous Groupings.

	S.F. Group (310)	P.F. Group (335)	Average per cent. difference	Ratio average per cent. difference to S.D.	Active Group (402)	Inactive Group (243)	Average per cent. difference	Ratio average per cent. difference to S.D.	Emotional Group (305)	Non-Emotional Group (340)	Average per cent. difference	Ratio average per cent. difference to S.D.
Secondary Function Criteria	66.5	24.9	+41.6	12	51.4	39.8	+11.6	2.9	43.3	43.2	-4.9	1.3
Primary Function Criteria	10.9	45.6	-34.7	11	27.6	31.8	- 4.2	1.1	44.8	40.1	+4.7	1.2
Activity Criteria	47.8	32.2	+15.6	4.1	73.2	16.5	+56.7	18	39.5	40.4	- .9	.2
Inactivity Criteria	22.7	31.5	- 8.8	2.5	13.6	49.2	-35.6	10	26.4	27.9	-1.5	.4
Emotionality Criteria	22.7	25.8	- 3.1	.9	22.6	25.9	- 3.3	.9	41.4	9.7	+31.7	9.5
Non-Emotionality Criteria	39.3	47	- 7.7	2	36.2	50.1	-13.9	3.4	18.5	56.7	-38.2	11

¹ Biesheuvel, S. (22) p. 327

The results here appear to be fairly clear-cut. On inspection of the "Ratio of average per cent. difference to S.D." column it is seen that the Function criteria give a sharp differentiation between the two poles of the Function Continuum and are not operative to anything near the same extent for the other two groupings. Similarly for the Activity and Emotionality criteria respectively. There appears to be a slight overlap between Secondary Function and Activity as evidenced by a critical ratio of 4.1 when the Primary and Secondary Functioning groups are compared with respect to the Activity criteria. Biesheuvel explains this in the following way: If two individuals, one Secondary Functioning and one Primary Functioning, are both lacking in Activity, the Secondary Functioning Individual will be able to conserve whatever Activity is present because of his tendency to perseveration whereas the Primary Functioning Individual will dissipate what Activity is present through lack of systematisation and splintered attention. Thus limited Activity will be more easily detectable in the Secondary than in the Primary Functioning Type. This does not militate against the distinctness of the variables but is an indication of the effects of interaction. There is also an overlap between Activity and Emotionality as evidenced by a critical ratio of 3.4 when the Active and Inactive groups are compared with respect to the Non-Emotionality criteria.

The percentage incidence of the individual questionnaire items was also determined and compared for these three dichotomous groupings as well as for the eight type groups (temperament ratios). On the basis of this and later research the temperament and personality assessment blank shown overleaf was devised for use in the Aptitude Tests Section and is now being used in the wider fields of personnel selection in industry and vocational guidance. A combination of three approaches is utilised in the assessment of personality:

- A. Controlled observation of behaviour
- B. Biographical Questionnaires
- C. Interviews

TEMPERAMENT and PERSONALITY ASSESSMENT.

Name

Number

Date

Tested by

Test

TEMPERAMENT.

(1) Impulsiveness	-2		0	1	2	Cautiousness
(2) Restlessness	-2	-1	0	1	2	Calmness
(3) Variability	-2	-1	0	1	2	Steadiness
(4) Expansiveness	-2	-1	0	1	2	Reserve
(5) Distractability	-2	-1	0	1	2	Concentration
(6) Quick Worker	-2	-1	0	1	2	Slow Worker

FUNCTION SCORE

(7) Dawdler	-2	-1	0	1	2	Prompt Starter
(8) Quitter	-2	-1	0	1	2	Persevering
(9) Indolent	-2	-1	0	1	2	Active
(10) Indifferent	-2	-1	0	1	2	Curious
(11) Dysphoric	-2	-1	0	1	2	Euphoric

ACTIVITY SCORE

(12) Indifferent	-2	-1	0	1	2	Enthusiastic
(13) Collected	-2	-1	0	1	2	Nervous
(14) No Expression	-2	-1	0	1	2	Expresses feelings (anger, disappointment, joy at success, etc.)
(15) Behaviour Cold	-2	-1	0	1	2	Behaviour Coloured by Warmness (though possibly reserved)

EMOTIONALITY SCORE

TEMPERAMENT :

PERSONALITY

(1a) Reclining or—	-2	-1	0	1	2	Self-Assertive or—
(1b) Submissive	-2	-1	0	1	2	Aggressive
(2) Uncertain and Anxious	-2	-1	0	1	2	Confident
(3) Unco-operative	-2	-1	0	1	2	Friendly
(4a) Insensitive or—	-2	-1	0	1	2	Hypersensitive or—
(4b) Unresponsive	-2	-1	0	1	2	Responsive
(5) Emotional Experience—dared not commit himself	-2	-1	0	1	2	Emotional Experience—Free—has no rigid fixation
(6) Socially Ineffective	-2	-1	0	1	2	Socially Effective
(7) Movements jerky	-2	-1	0	1	2	Movements Controlled and Modulated
(8) Sensitive	-2	-1	0	1	2	Hardboiled

Signs of Nailbiting		Perspiration during Test	
Fidgeting during Test		Blushing	
Tremor of Fingers		Marked Nicotine Stains	
Slovenliness of Uniform/Clothing		Uncured Finger Nails	

REMARKS OVER

Author Baehr Melany Erna

Name of thesis An Investigation Into The Determinants Of Temperament. 1987

PUBLISHER:

University of the Witwatersrand, Johannesburg

©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.