TYPES OF PERSONALITY: A FACTORIAL STUDY OF SEVEN HUNDRED NEUROTICS.

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1. INTRODUCTION.

FEW psychologists or psychiatrists would object to the statement that the whole field of personality and temperament study is in a state of acute conflict and dissociation. This is as true on the psychological side, i.e. in the field of experimental tests, questionnaires, ratings and so forth (69, 1), as on the psychiatric side, i.e. in the field of the diagnosis and classification of mental disorders (39, 9). In the present paper an attempt is made to locate the fundamental trait-vectors in terms of which personality and temperament can be most parsimoniously described, and to demonstrate that the results thus obtained from a detailed analysis of psychiatric ratings and experimental tests carried out on 700 neurotics can serve to integrate findings from a wide variety of sources, which at first glance seem confused and even contradictory.

It was decided to use neurotics as subjects in this study because, as Slater has pointed out, " neurosis presents a special case of a generalized type of behaviour, and signifies a failure of adaptation. Its two primary reagents are the individual constitution and the environmental set-up of the moment " (65). It is with the fundamental traits of this individual constitution that we are concerned here, and we may regard the failure of adaptation to the environmental set-up as an invaluable experimental means of bringing out and emphasizing these underlying traits. That this argument is not devoid of justification is shown by the fact that Slater found comparatively high correlations, considering the unreliability of the material, between the personality traits characteristic of, and the symptoms exhibited by, the neurotic army patients studied by him (65).

The difficulties which arise in attempting to deal with types of individual constitution require a solution in terms of a statistical procedure specially devised to deal with problems of classification. Such a procedure is available in the form of factorial analysis (10). Certain attempts have been made in the past to apply factorial methods to these problems ; they will be reviewed briefly in a later section. Much of this work has suffered from certain weaknesses which considerably lower its value. The number of subjects used was often extremely small ; the number of variables correlated was seldom large enough to allow of the unambiguous definition of factors ; the method of selection of subjects was frequently open to criticism ; raters were often untrained in their exacting tasks ; such factors as the " halo " effect were not always controlled ; and lastly, the interpretation of factors was sometimes undertaken with a lack of consideration which contrasted strangely with the extreme care taken over the purely mathematical aspects of the work.

In the present investigation an attempt has been made to avoid these pitfalls as far as possible. Greene points out that studies of this kind suffer from a paucity of facts when less than 300 persons and less that 40 items are used (31). We have used 700 persons and 39 items ; another item, giving the results of a follow-up study, was not available in time to be included in the analysis. As will be explained more fully in the next section, the subjects were all neurotic male soldiers referred to the Mill Hill Emergency Hospital, representing successive admissions except

for certain cases excluded because various physical factors and symptoms complicated the simple neurotic picture.

Ratings on the items selected were given by the psychiatrists in charge of the patients; for many items objective evidence, such as intelligence test scores, work histories, documents relating to marital status, etc., was available. It was hoped that ratings given by psychiatrists, i.e. by persons with wide experience in the field of personality study, would be more valid than the usual type of rating given by friends and acquaintances, particularly as the psychiatrist does not have to rely on his own knowledge of the patient alone, but can call upon the reports of nurses, P.T. instructors, occupational therapy supervisors, relatives of the patient, army officers, etc., all of whom see the patient from some different angle, and are in frequent contact with him.

In spite of these opportunities it always remains possible that psychiatric ratings are influenced by "halo" factors, by preconceived opinions, or by systematic views regarding the relation between various symptoms. For this reason emphasis was laid in the selection of items on those which could be determined with a maximum of objectivity, such as presence or absence of hysterical conversion symptoms, method of disposal, i.e. whether returned to duty or boarded out of the Army, presence or absence of pain, tremor, fainting spells, etc. Diagnoses, being of little objective value, were not included in the analysis.

Another precaution against an undue prevalence of *systematic* error consisted in the fact that the ratings were made, not by one psychiatrist, but by over a dozen, all different in their theoretical leanings. Thus to some extent at least we may hope that the errors occurring through bias will be *random* errors, and thus cancel out. This type of error would reduce the correlations between the items, but would leave the trait-pattern unaffected. In spite of these precautions, systematic bias was probably not entirely eliminated, and the reader is warned not to take all the correlations reported at their face value.

2. The Experiment.

The experimental population consisted of 700 male neurotic soldiers, referred to Mill Hill Emergency Hospital for investigation and treatment. Originally the group to be studied numbered 1,000, but in order to reduce the complexity of the factors operating the following groups of cases were excluded: cases of epilepsy, cases where head injury formed part of the present illness, cases with previous organic disease of the central nervous system, or with physical signs of present organic disease of the central nervous system, cases in whose illness psychological causes were unimportant, cases with organic mental syndromes, and cases where physical illness was an important factor.

Our group thus consists of a fairly representative sample of male army patients suffering from the mainly reactive types of mental illness, in whom there are no signs of serious physical injury or illness, and in whom psychological causes are judged to have been important factors in the production of the illness. No attempt was made to equate the numbers of patients diagnosed as hysterics, anxiety neurotics, depressives, psychopaths, etc.; apart from the patients excluded on the above-mentioned grounds, our group represents successive admissions, completely unselected.

The ratings and tests used for the present investigation were selected from some 200 items recorded for each patient by the psychiatrist in charge of that patient, by the psychologist giving the test, or by the social worker investigating the early history and the family of the patient. The items chosen were determined by two main considerations. In the first place there was the important consideration that each item should have some definite psychological bearing on the illness and the personality of the patient; inevitably opinion will differ as to the wisdom of including certain items on these grounds, while excluding others. In the second place, there was the statistical consideration that each item should be noted in more than 10 per cent. and less than 90 per cent. of the cases, as otherwise the correlation coefficients derived from the data would be distorted.

In Table I are given the actual items used. These items are given in a dichotomized form, even when the original data were normally distributed; thus, for instance, the intelligence test results, although recorded continuously on the records

TABLE I.

	Number of times noted.
(1) *Age above 30* vs. age below 30	270
(2) Modal civil occupation: *Unskilled and semiskilled* vs. skilled, administrative, or professional	538
(3) *Little and much unemployment* vs. no unemployment	294
(4) *Work history degraded, or unduly frequent changes of occupation* vs. steady work history	71
(5) Abnormality in parents or siblings (psychosis, epilepsy, mental deficiency, neurosis or psychopathic personality) *present* vs. absent	275
(6) Home atmosphere during childhood and adolescence: *unsatisfactory* vs. satisfactory	226
(7) *Married* vs. engaged, single, widowed, separated	463
(8) Membership of political, social, cultural, industrial or other groups: *nil* vs. active or half-hearted	574
(9) Hobbies and interests: *narrow* vs. broad	550
(10) *Moderate or excessive alcohol* vs. teetotal or abstemious	377
(11) Mental health before present illness: *symptoms in childhood, symptoms and behaviour in adult life indicating clear predisposition, or definite illness* vs. normal	488
(12) Well organized personality, adaptable, stable: *No* vs. Yes	448
(13) Weak, dependent, timorous personality: *somewhat or very* vs. not	393
(14) Drive and energy: *inert, without initiative* vs. average go or conspicuous energy	505
(15) Cyclothymic or consistently depressive or hypomanic: *somewhat or very* vs. not	265
(16) Schizoid, seclusive: *somewhat or very* vs. not	235
(17) Hypochondriacal personality: *somewhat or very* vs. not	220
(18) "Obsessional," meticulous: *somewhat or very* vs. not	123
(19) Somatic anxiety (palpitations, dyspnoea, precordial discomfort, sweating, flushing, diarrhoea): *Yes* vs. no	386
(20) Fatigue, lassitude, effort intolerance: *Yes* vs. no	417
(21) Dyspepsia, vomiting: *Yes* vs. no	122
(22) Fainting, fits: *Yes* vs. no	101
(23) Pain—not of demonstrable organic origin and excluding headache: *Yes* vs. no	174
(24) Tremor: *Yes* vs. no	183
(25) Sexual anomalies (impotence, ejac. praecox, masturbation worries, homo-sexuality, others): *Yes* vs. no	89
(26) Irritability: *Yes* vs. no	164
(27) Apathy, retardation: *Yes* vs. no	97
(28) Hysterical attitude to symptoms: *Yes* vs. no	228
(29) Muscular tone and posture: *Poor* vs. good or average	92
(30) Headaches: *Mild or severe* vs. none	413
(31) Anxiety, anxiety dreams, battle dreams: *moderate or severe* vs. none or mild	352
(32) Depression: *moderate or severe* vs. none or mild	229
(33) Hypochondriacal symptoms: *mild, moderate or severe* vs. none	244
(34) Hysterical conversion symptoms (motor, sensory, special senses, visceral or other): *Any* vs. none	215
(35) Stress of bombardment or exposure among chief psychological causes of illness: *Yes* vs. no	137
(36) Stress of wartime separation and regimentation among chief psychological causes of illness: *Yes* vs. no	469
(37) Stress of domestic problems among chief psychological causes of illness: *Yes* vs. no	202
(38) Intelligence: *Below average* vs. average or above	183
(39) *Boarded out of the army* vs. returned fit for duty	171

kept by the hospital, are given here only as " below average " and " average and above." This was done in order to make possible the calculation of coefficients of association; many of the ratings being in dichotomous form in any case, no other method was practicable, and indeed it was doubtful if the data were sufficiently accurate to warrant more refined statistical treatment, such as the use of biserial correlations, for instance. In the Table the aspect of the item which was arbitrarily regarded as the positive aspect is italicized in each case; the number on the right-hand margin gives the number of times each item in italics occurred in the experimental population.

The intelligence test used in order to determine the position of the subjects with regard to Item 38 was the Progressive Matrices Test (59). I have elsewhere reported a detailed analysis of the scores of some three thousand neurotics on this test, as well as a comparison with the scores of normal subjects (20); the results showed that on the average the neurotics were no less intelligent than the normals, but that the curve of distribution of scores for the neurotics was distinctly platykurtic, as compared with the curve of distribution of scores for the normals. In other words, among the neurotics there was a higher percentage of subjects with high or low intelligence, while the percentage of subjects of average intelligence was considerably lower among them than it was among the normals. In another paper I have shown that the retest reliability of this test is only slightly lower for neurotics than for normals, and that incentives are no more successful in increasing the scores of neurotics than in increasing the scores of normals (21).

The 39 items listed in Table I were correlated, using Yule's coefficient of association as the index of correlations (78); 741 correlations were obtained in this way. Although this index is not directly comparable with a product-moment correlation coefficient, there is no objection to using it when we remain within a single universe of coefficients. A rough-and-ready approximation to the product moment correlation can be obtained by multiplying each coefficient of association by three-quarters.

3. Results.

The intercorrelations between the 39 items are reported in Table II. In Table III are given the factor saturations of these 39 variables for four factors, together with their communalities. The factorial pattern of the first two factors is shown in geometrical representation in Fig. 1. The method of analysis used was Burt's General Factor Summation Method, in which the diagonal values are determined by an iterative procedure (10).

It will be seen that the first factor, which contributes 14 per cent. to the variance, has positive saturations throughout, while the second, third and fourth factors, contributing 12 per cent., 8 per cent. and 6 per cent. respectively to the variance, are bipolar, having about as many positive as negative saturations. Altogether, these four factors account for 40 per cent. of the variance, leaving a " uniqueness " of 60 per cent. The fact that the " communality " is rather small as compared with the " uniqueness " is of course due to the fact that a number of variables were included in our list of 39 items which show only very low correlations with any of the four factors; examples are age, bombing and exposure, alcohol, headache, degraded work history, etc.

The first, or general factor, is defined by the items having the highest saturations with that factor, i.e. badly organized personality, dependent, abnormal before illness, boarded out of the army, narrow interests, little energy, much unemployment, dyspepsia, schizoid personality, poor muscular tone, abnormality in parents, no group membership, cycloid personality, and unsatisfactory home, to take only items having a correlation of over ·40 with this factor. Quite clearly, the factor is one of " neuroticism," or " lack of personality integration "; it is almost completely defined by the item " badly organized personality," which correlates with the factor to the extent of ·92. As will be argued in the next section, we consider this factor to be the obverse of the general factor of integration or " will " discovered by Webb (72), and generally referred to as " w," and to be identical with a general factor of " neuroticism," often falsely labelled " introversion," which emerges from many American questionnaire studies.

The second, bipolar factor presents us with a dichotomy which contrasts, on the one hand, anxiety, depression, obsessional, apathy, irritability, and on the other, hysterical conversion symptoms, narrow interests, little energy, sex anomalies, hysterical attitude, no group membership, and unskilled. This differentiation bears out Jung's well-known statement that " medical experience has taught us that there are two large groups of functional nervous disorders—the one embraces all those forms of disease which are designated hysterical, the other all those forms which the French school had designated psychasthenia. . . . . The hysteric belongs to the type of Extraversion, the psychasthenic to the type of Introversion " (43).

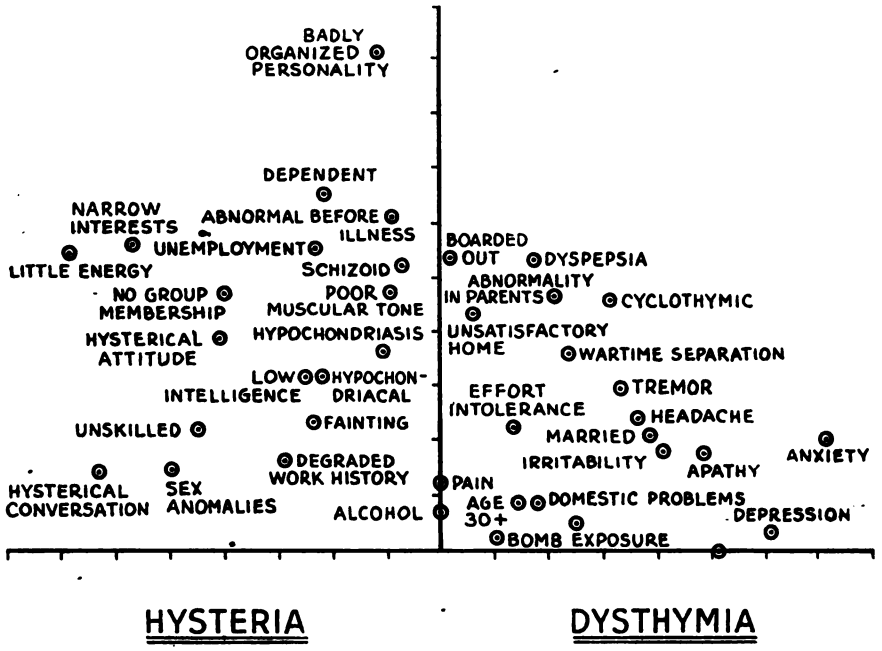

FIG. 1.

Similarly, McDougall writes: "There are . . . two great categories of disorder under one or other of which we may attempt to place many of the cases, though without confidence in respect to many of them. . . . These two categories are the dissociative or the hysteric class, on the one hand; the neurasthenic or anxiety class, on the other. The liability to disorder of one or other of these two great types seems to be a matter mainly of innate constitution; persons of the extravert temperament seem more liable, under strain, to disorder of the hysteric or dissociative type; those of introvert . . . temperament to disorders of the neurasthenic type " (52). (McDougall uses " neurasthenia " in the sense in which the French writers use " psychasthenia "; we have preferred in this paper to use neither of these obsolescent terms. Instead, the term " affective disorder " or " dysthymia " is suggested for the anxiety-depression-obsessional group).

As will be argued in the next section, we consider this bipolar " type " factor* to be identical with the introvert-extravert dichotomy, with Cattell's factor of " surgency," and with Pavlov's concept of " inhibition." In this paper, therefore, we shall refer to the first factor as one of *Integration* as opposed to *Neuroticism*;

* By calling this factor a " type " factor I do not mean to imply a bimodal distribution of persons belonging to the two sides of the dichotomy in the general population; the actual distribution of the general trait of which hysterics and affectives form the extremes cannot be determined without further investigation.

TABLE III.

Variable.	Factor saturations. 1.	2.	3.	4.	h^2.
1. Age above 30	·08	·14	—·27	—·22	·15
2. Unskilled	·22	—·45	·12	—·48	·49
3. Unemployment	·55	—·23	—·12	—·36	·49
4. Degraded work-history	·16	—·29	·16	—·29	·22
5. Abnormality in parents	·47	·21	·35	·31	·48
6. Unsatisfactory home	·43	·06	·45	·00	·38
7. Married	·21	·39	—·12	—·19	·24
8. No group membership	·46	—·40	—·16	—·32	·50
9. Narrow interests	·55	—·57	·04	—·10	·63
10. Alcohol	·07	·00	·17	—·36	·16
11. Abnormal before illness	·61	—·09	·24	·33	·56
12. Badly organized personality	·92	—·12	·35	·15	1·00
13. Dependent	·65	—·22	·06	·24	·53
14. Little energy	·53	—·69	·06	—·24	·82
15. Cyclothymic	·46	·31	·00	·37	·45
16. Schizoid	·52	—·07	·26	·29	·42
17. Hypochondriacal personality	·31	—·22	—·41	·07	·32
18. Obsessional	·00	·51	·07	·25	·32
19. Somatic anxiety	·05	·25	—·37	·12	·21
20. Effort intolerance	·23	·13	—·63	·26	·54
21. Dyspepsia	·54	·17	—·36	—·01	·45
22. Fainting, fits	·23	—·23	—·42	·23	·33
23. Pain	·12	·00	—·39	·03	·16
24. Tremor	·30	·34	·17	·10	·25
25. Sex anomalies	·14	—·50	·54	—·01	·56
26. Irritability	·18	·41	·13	—·10	·23
27. Apathy	·18	·48	—·02	—·46	·47
28. Hysterical attitude	·38	—·41	·11	—·04	·32
29. Poor muscular tone	·47	—·09	—·17	·45	·46
30. Headaches	·24	·36	—·15	—·06	·21
31. Anxiety	·21	·72	·14	—·09	·59
32. Depression	·04	·61	·02	—·23	·42
33. Hypochondriasis	·36	—·11	—·79	·24	·82
34. Hysterical conversion	·14	—·63	·08	·11	·44
35. Bomb and exposure	·02	·10	·03	—·04	·01
36. Wartime separation	·36	·23	·39	·23	·38
37. Domestic problems	·08	·17	·17	—·19	·11
38. Low intelligence	·32	—·25	·08	—·13	·19
39. Boarded out of army	·54	·02	·25	·05	·35
Variance	·14	·12	·08	·06	·40

(For full definition of variables Table I should be consulted.)

to the second as one of *Inhibition*, *Introversion*, or *Affective Disorder* (Dysthymia), as opposed to *Disinhibition*, *Extraversion*, or *Hysteria*.

The third factor is characterized, on the one hand, by items such as hypochondriasis, effort intolerance, dyspepsia, fainting, fits, pain, hypochondriacal personality, somatic anxiety, etc., i.e. by items stressing preoccupation with the body; on the other hand, by sex anomalies, wartime separation, unsatisfactory home, abnormality in parents, and badly organized personality, i.e. by items of a more psychological type. We may label this factor "*hypochondriasis*"; it also bears some resemblance to the concept of "*neurasthenia*" as defined, for instance, by Young (77).

The fourth factor is characterized, on the one hand, by items such as unskilled, apathy, alcohol, unemployed, no group membership, little energy, degraded work history; and, on the other hand, by items such as poor muscular tone, cycloid,

abnormality in parents, schizoid, abnormal before illness, obsessional, effort intolerance, badly organized personality, and hypochondriasis. Interpretation of this factor is difficult, particularly as few of the items show even reasonably high correlations with it. The conglomerations of traits having positive or negative saturations appear consistent enough, however.

Probably this factor distinguishes between the stupid, drunken, shiftless social misfit on the one hand and the " psychological conflict " group on the other. If this be indeed the correct interpretation, it is of interest mainly with regard to the description of the particular group studies, and hardly assumes systematic importance.

4. Discussion.

In this section we intend to show that the scheme elaborated in the last section, and in particular the first two factors found there, can serve to unify the rather diffuse results found by various investigators working in this field. At the same time, if it can be shown that much the same factors emerge in these studies of young and old, normal and abnormal, human and animal, as are found in our own experiment, we have an additional reason for accepting the factors described in the previous section as fundamental vectors in the field of personality and temperament.

Confirmatory evidence comes from four main sources: (1) Theoretical analyses; (2) questionnaires and ratings; (3) experimental studies; (4) animal studies. While there are certain points in connection with these studies which call for more detailed discussion, we venture to maintain that on the whole the results support our interpretation.

(1) *Theoretical analyses.*—We have already mentioned that our second factor is in line with the theoretical views of Janet, Jung and McDougall with respect to types of personality. *A fortiori* we may also claim that our results are in agreement with the views of older writers to whom Jung acknowledges his indebtedness, such as James, Jordan, Gross, Heymans, Ostwald, Kant, and Herbart.

Among more recent authors, many typologies have been worked out which seem to be based fundamentally on the same distinction emphasized in our analysis. Holt's adient and avoidant types (38), Kempf's anabolic and catabolic types (44), Eppinger and Hess's vagotonic and sympatheticotonic types (19), Kretschmer's schizothymic and cyclothymic types (47), Bleuler's schizoid and syntonic types (7), Wertheimer and Hesketh's syntropic and idiotropic types (73), Jaensch's B- and T-types (40), Rosanoff's antisocial and cycloid types (61), Freud's compulsive and narcissistic types (26), the adrenergic and cholinergic types of the physiologists—these are only a few examples of current psychological and psychiatric theorizing which seem to stress the same dichotomy found in our analysis.

As regards the first factor which emerged in our analysis, it seems to be related to such concepts as McDougall's " self-regarding sentiment " (53) and Freud's " ego-ideal " (27), to Janet's view of " psychic tension " (42), Hollingworth's view of " redintegration " (37), and Pavlov's theory of " strength of nervous functioning " (58). Slater has suggested that " neuroticism " is a variable which is distributed normally, and our results, as far as they go, are not in conflict with his view (65).

(2) *Questionnaires and ratings.*—Vernon has pointed out that " it is probable that the general factor in self-rating tests does in part correspond to a genuine maladjusted-psychoneurotic-introverted tendency, which is manifested both in overt behaviour and in the judgments of acquaintances " (71). Bernreuter's demonstration that tests of introversion correlate as highly with tests of neuroticism as they do among themselves supports this view (4), but raises the question why introversion and neuroticism should appear highly correlated, if not identical, in these studies, while being quite independent in our own.

Collier and Emch have shown that discrepancies of this kind are due to the fact that authors of questionnaires of " introversion " have used Freud's conception of introversion rather than Jung's, thus equating it with neuroticism (15). According to Freud " an introvert is not yet a neurotic, but he finds himself in a labile condition; he must develop symptoms at the next dislocation of forces, if he does not find other outlets for his pent-up libido " (28). Jung, however, considers that " it is a mistake to believe that introversion is more or less the same as

neurosis. As concepts, the two have not the slightest connection with each other" (43). It would appear better to drop the term "introversion" in connection with neurotic questionnaires of the usual type, and to restrict the word to the Jungian sense, as otherwise it will become quite meaningless.

Studies of ratings also show this general factor of "neuroticism," or its opposite pole, "integration." Webb's "w" factor, extracted from the intercorrelations of a variety of ratings carried out on 200 students and 120 children, showed that such traits as perseverance in the face of obstacles, kindness, trustworthiness, conscientiousness, excellence of character and strength of will tended to go together; this factor is clearly the opposite pole of our factor of "neuroticism" (72). Garnett, in his re-analysis of Webb's data, found evidence for a factor, independent of "w," which he called "c" (30), and which closely resembles our second factor. Both the "w" and the "c" factor have also been found in analyses of ratings and tests carried out by Cattell (13) and by Studman (68). Burt's factor of "emotional instability" (11), and his demonstration that people can be grouped into type according to the prevalence of "aggressive" or "inhibitive" emotions (12), is relevant here, as is the demonstration of Hart *et al.* of the existence of a general factor of "emotional instability" (35).

(3) *Experimental studies.*—Using experimental tests instead of ratings, Brogden has confirmed the existence of the "w" factor; he showed that it was highly correlated with "resistance to suggestion" (8). This finding is particularly interesting in view of our own experimental demonstration that neuroticism and suggestibility are highly correlated (25).

Hartshorne and May (36), Line and Griffin (49), and Oates (55) also furnish evidence for the existence of a general factor of neuroticism or integration from analyses of the intercorrelations of various objective tests; Oates also confirmed the existence of a factor closely resembling our second factor. Maller's factor "c," or the "readiness to forego an immediate gain for the sake of a remote but greater gain," should also be mentioned here (51); his evidence came from the analysis or the intercorrelations of tests of honesty, co-operation, inhibition and persistence, carried out on some 700 pupils. Support for the general factor of integration comes also from the experimental work on persistence, as carried out by Ryans (64), Kremer (46) and others.

(4) *Animal studies.*—It has already been pointed out that our general principle of "integration" appears to be similar to Pavlov's concept of "strength of nervous functioning" (58). "Primary and chief significance attaches to the factor of the *strength* of the neurones which determines the basic division of types of higher nervous activity into strong and weak. . . . The formation of a reflex to strong stimuli serves as a kind of sign of the 'boldness' of the animal, or, what is the same thing, the working capacity of its nerve cells" (29).

Pavlov also found evidence for a dichotomy similar to our second factor. "With the collision of the excitatory and the inhibitory processes, there appears either a predominance of the stimulating process, disturbing the inhibition . . . or in other cases a predominance of the inhibitory process . . . , disturbing the excitatory process" (58). Krasnogorski duplicated this type of analysis with children (45), and Rosenthal has attempted to relate it to human typology (62), as has Pavlov himself (57).

Others who have observed constitutional differences in animals which appear similar to those emphasized in our second factor are James (41), Dworkin (18), Muncie and Gantt (54), Liddell (48), Anderson (3), Cook (16), and Maier (50). In addition to these observational studies, we have a certain amount of experimental testing, linked with correlational work, which essentially supports the hypothesis of an "inhibited" type; examples are the studies of Hall (32), Anderson (2), Biel and O'Kelly (5), Billingslea (6), Parker (56), and Yerkes (74). The work of Hall (33), Yerkes (75), Coburn (14), Stone (67), Utsurikawa (70) and Dawson (17) makes it appear likely that this trait rests on a hereditary basis, while reports by Rundquist and Bellis (63), Shirley (66), Hall and Lindsay (34), and Yerkes and Rhoades (76) suggest that it is related to endocrine and autonomic functions. While the results of these studies are very suggestive, and seem to lend some support to conclusions derived from human subjects, it should be realized that it is extremely hazardous to posit identity of function because of superficial similarities which may show fundamental differences in their causation. Work on animals is quoted

here largely in order to draw attention to the need for studying the extent to which such arguments by analogy are justified.

The results of our factorial study of the pattern of intercorrelations of 39 traits in 700 neurotic soldiers are thus seen to agree with the results obtanied from questionnaires, ratings, experimental and animal studies, as well as with the theoretical analysis of the organization of temperamental traits given by Janet, Jung, Pavlov, McDougall, and others. It appears that we have to deal with two predominant modes of organization:

(1) Strength of nervous functioning, psychic tension, self-regarding sentiment, super-ego, or as we have called this factor, *integration* as opposed to disintegration or neuroticism, is the first principle or generalized trait around which constituent traits can be grouped.

(2) Affective disorder, desurgency, introversion, repression, or, as we have called this factor, dysthymia as opposed to hysteria, is the second principle or generalized trait around which constituent traits can be grouped.

Having established these two main principles of organization, our next step must be to search for objective tests with which to measure the saturation of any given individual with these two factors, so that in time we may get away from the subjectivity of ratings. An example of the type of work which may ultimately lead to the development of a battery of tests for the measurement of the main dimensions of personality, a battery as reliable and valid as tests of cognitive functions are already, may be taken from our work on suggestibility: as has been shown elsewhere, objective tests of suggestibility correlate highly with neuroticism ($r = \cdot 66$), while showing no correlation with the inhibition factor (25, 22, 23). Work is in progress at this laboratory at the moment on tests of persistence, level of aspiration, tendency to repression, etc., in an attempt to lay the foundations for a battery of this kind. Work on body build has already established certain correlations between constitutional factors and the hysterical and affective disorders respectively (60); similarly, correlations have been obtained between these two types of personality and autonomic activity (24).

5. Summary and Conclusions.

Seven hundred neurotic soldiers, unselected except for the omission of all cases in which there were signs of physical injury or illness having a bearing on the neurosis, were rated by the psychiatrists in charge on 38 traits; scores on an intelligence test were also available. These 39 variables were intercorrelated, and the resulting matrix of 741 correlations factor analysed. The following results emerged from this study:

1. Four factors, one with positive saturations only, the other three with both positive and negative saturations, accounted for 40 per cent. of the variance.

2. The first factor extracted accounted for 14 per cent. of the variance, and was identified as a general factor of neuroticism, instability, or lack of integration.

3. The second, bipolar factor accounted for 12 per cent. of the variance, and was identified as a general factor of introversion, desurgency, or inhibition, dividing the patients into an hysterical and an affective group.

4. The third, bipolar factor accounted for 8 per cent. of the variance, and was identified as a general factor of hypochondriasis or neurasthenia, dividing traits stressing preoccupation with the health of the body from traits of a more psychological type.

5. The fourth, bipolor factor accounted for 6 per cent. of the variance, and seemed to be of little general interest. It divided the men examined into a social misfit group on the one hand, and a psychological conflict group on the other.

6. Evidence from work on questionnaires, ratings, experimental studies and animal studies was found to corroborate the existence of the two factors of *integration* and *inhibition*; these factors were also shown to fit in well with the conceptual framework of clinical and academic psychology.

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