

A Technique for Determining Types of Personality.

by

Herbert Shuey

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Approved by:

Raymond H. Wheeler  
Instructor in charge

Raymond H. Wheeler  
Head or Chairman of Department

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## 1. Introduction.

During recent years the study of character and personality has received added interest. There are many reasons for this renewed activity. On the one hand, scientific investigation has increased our knowledge of the body to an enormous degree; we have detailed information about many of the puzzling conditions that were unknown a century ago. On the other hand, psychiatry has been active in the study of the abnormal man, and the results have opened up entirely new fields of investigation. It may be asked where the psychologists are, why have not these discoveries been made in the one field devoted to the study of the psyche? The answer is not hard to find. For example, consider a passage from William Stern (80) P. 5:

"Since the beginning of the present era the development of practical life was founded on scientific investigation; "through knowledge to power" is the motto of this culture. But for centuries it was only the external side (economic, technical, industrial, hygienic) of cultural life that was transformed by the sciences; and for this reason the natural sciences were the ones that unfolded as applied disciplines such powerful effects. The side of culture, on the other hand, that concerned itself with the internal man - and where is mental life not of importance, even in the apparently external life activities? - had to go without this scientific foundation. Whenever the mental behavior of man in practical life had to be understood and evaluated, directed and influenced, we were satisfied with a naive popular psychology or with dilettante systems which had to renounce all the advantages and results of scientific knowledge. To this day education, vocational choice and activity, administration of justice and punishment, mental hygiene and therapy, and many other fields suffer from this lack."

Psychology under the influence of the 19th century took on the analytical method, and behavior was analyzed; elements were found, and character and personality were considered merely the sum of these elements. Simple reactions were

studied, even in animals, and it was assumed that in the course of time human behavior could be built up out of the sum of all these elements. That the results led to confusion and away from a scientific study of character goes without saying. Our knowledge of character has not come from these psychologists, but from workers in entirely different fields. It must be emphasized that these workers were not concerned with groups and average performance, but with the individual as a whole. Thus, Gestalt psychology has revolutionized experimental psychology, just as the study of the whole individual has given the necessary impetus to the study of character. We find the following in Jaensch (34) pp. 77-78:

"This tendency to apprehend the whole is not merely a characteristic of everyday psychology, which Bunke opposes to experimental psychology, but a necessary property of every science that tries to reach a deeper conception of its subject. Theoretical physics, general and comparative physiology, the general history of culture and thought and many other branches of knowledge actually owe their existence to this tendency. The fact that experimental psychology for some time did not include this point of view is not due to its being a cul-de-sac, but to the general position of science at the time in which it began. Soon after psychology had taken its first steps, the phase of positivism set in, and because of this, 'wholes' were pushed into the background in all the sciences, both natural and philosophic. This phase of development has passed; we can still thankfully retain the valuable things this period produced, without retaining its undeniably narrow point of view. Where this point of view has been superseded and the tendency towards the apprehension of wholes is again to the fore, most of the older sciences will be able to look back to a tradition in this direction, which was only broken during the relatively short rule of positivism. Scientific psychology is in a less favourable position in this respect, since the short period in which it has been in existence fell almost entirely within the period of positivism. (We need not emphasize, however, that psychology is not a product of positivism and positivistic modes of thinking.) For this reason new starting-points for research have to be uncovered in psychology more than in any other sciences, if the tendency toward wholes, which is so noticeable in other sciences, is to come into its own in psychology as well. But these starting-points are present and are daily leading us further."

Psychology has been rather slow to follow, and the result has been that the study of character has lagged behind in psychology, while psychiatry has given us a wide field of literature on the subject. But in the last few years psychology has taken up the problem of character and types, especially in Germany, and the fact is slowly being admitted that the so-called classical experiments performed in psychology in the past will have to be repeated, since they now have lost their meaning in the light of the new study of individual differences. If a psychological experiment is performed on a selected group of individuals, especially when those subjects are ruled out who do not react as is expected under the conditions of the experiment, the results may be valid enough for this one group, but will not be valid for other groups, since the problem of types has shown that not all individuals react in the same way. For example, one of the most classical experiments was Stratton's experiment in disoriented vision. Generalizations from this experiment were made for the whole field of psychology. The fact that Stratton belonged to a particular type did not enter in; whether the results would be the same for all individuals or whether they apply only to this one type is a question that can only be settled by repeating the experiment on types. It shows how great the need is of never performing any experiments without first knowing about the whole individual who is going to serve as a subject. It is no wonder that the objective methods of the behaviorists have given us no information on the problems of personality. In this connection there is a pertinent comment from Klüver (46):

"Even though one may not subscribe to Janensch's distinction of an integrated and non-integrated type the experiments so far performed seem to demonstrate conclusively the great variation in the perceptual responses of adults to identical stimulus situations. Undoubtedly, many of the "classical" experiments in the fields of physiological optics and sensory psychology have been performed only on certain "types"; that is to say, individuals with very unstable perceptual responses were often ruled out as undesirable because of interpreting their reactions in terms of certain "laws".

In experimental psychology subjects were selected at random, and if they did not react in accordance with the expected results, they were considered poor subjects and ruled out. That this variation was due to fundamental differences in personality was not even investigated, the one-to-one correlation between stimulus and response was more important. The new psychology has shown that we must consider the whole organism; when a response is made, it is not the simple pictured response of the behaviorists, but a highly complicated reaction of the entire organism. Coghill (13) has stressed the fact that behavior is differentiation and growth. A baby is born with a behavior pattern, and the nervous mechanism has a potential power of development. Normal environment will not affect the behavior pattern, but it will determine its appearance and the extent of differentiation. This shows that any reaction, even simple reaction time, is individual, and a disregard of a personality or character type will simply mean that the results are not inclusive, they lack the reaction as a whole, and the individual has been lost in the calculation of the results. Distraction has been shown to affect types differently. But what a tremendous influence this would have on even a simple

psychological experiment! Subjects are given instructions, they must attend to several things at the same time. Therefore, they are going to show different reactions according to type. If a haphazard selection of subjects is made, it is quite probable that all of one type may be selected, since often only four to six subjects are used. Is it any wonder that investigators often find that they cannot duplicate the experiments of others? If a type of individual were selected for an experiment involving the attending to several things at the same time, and these results were made, keeping in mind the individual as a whole, any experimenter could then duplicate the experiment with the same type. This would not only increase the accuracy of experimentation, but would also give an insight into the individual, really the true object of psychology.

The points just made were, in fact, the fundamental basis of the Baldwin-Titchner controversy on reaction time. Baldwin developed types using unpracticed observers, and found two types, which he called "sensory" and "motor" observers.

One can choose almost at random to find the effects of individual differences on experiments. Miss Downey (18) discusses this as follows p. 150:

"It is known that some very striking individual differences occur with regard to the extent of perseveration in each of the three forms listed above. The rate, for example, at which the glowing match must be whirled in order to become a solid circle of fire varies from one person to another, depending upon the individual tendency to perseveration is a general characteristic of the nervous system, so that a determination of the degree of perseveration in one field may be accepted as determinative for all others.

But many investigators assume that this is true and find in the tendency of nervous activity to "perseverate" or die out quickly a characteristic of such great significance as to make a classification of men into perseverators and non-perseverators one of the most important that can be devised."

Another example is in the study of apparent movement. It has been found that some see apparent movement and some do not, but the psychologists stop here. They may vary indefinitely the conditions of this particular experiment, but they do not go the other way and investigate the reasons for the differences in types. They may multiply experiments, vary every detail of an experiment until there is nothing left to vary, but this will not contribute to the study of the individual as a whole. The sum of all these reactions does not give character. Individual differences have always been found, but they have either been ruled out all together, or neglected. Recent work in eidetic imagery and synaesthesia has shown that there are not only marked differences, but these differences sometimes influence tremendously the reactions of the subject. Children in school in writing simple themes display differences that correspond to certain types. Grades are given in accordance with the value of the themes, but little study has been made why they write as they do.

Jaensch has developed a theory of the genesis of sensations solely on the basis of individual differences. He states that images and perceptions are differentiated from their original unity; thus, the one-to-one correspondence between stimulus and perception is the end-product and not the beginning. Children have been found where this union still persists, where the differentiation process has not taken place, and finally where there

is an actual conflict between images and real objects.

Experimental psychology must take these facts into consideration.

Joseph Gross (26) has made a special study of this differentiation process in children by the intermittent method. He makes the following statements:

"We see with increasing clearness that the perceptual world of our children arises under the influence of central factors even among the youngest of them. This is an important fact and one that deserves the attention of all educators. The entire psychic structure of the child must be considered in teaching and educational methods. The deeper insight we get into the typical differences of psychic life, the louder the demand will be for individual treatment. The time of mass-education must cease once and for all. The child's mind is not just a copy of one and the same pattern."

We see, therefore, that the need of types is growing daily. We must know just what sort of an individual was used in an experiment, so that we can be absolutely sure that we can repeat the experiment, and that differences in the results are not due to the use of different types. This is the thesis I am working on. I wish to develop a method by which types can be isolated, so that a worker in Germany and one in America can compare results. My problem is not to investigate the nature of types, any more than is necessary for a theoretical understanding of my classification, but to furnish a practical means of classifying individuals quickly into certain definite types. Every future experiment in psychology should have a report of the types used, and differences found can then be correlated with the types. Psychology will then be on the road back to its true mission, and away from the study of minute details in physiology.

Aside from the experimental value of types, there are other fields where this study will be of tremendous importance. Vocational guidance still lacks a definite basis for classifying individuals. Professions are now being studied in Europe on the basis of types, and the results have been quite satisfying. Briedé (10) has studied doctors on the basis of types, and Pannenburg (61,62,63) has studied the artists, painters, composers and musicians. Jaensch has taken up the problem of the forensic importance of types, and Thomas (82) has made the first study of this problem. The year before Busemann (11) was called to study a case before the court, and on the basis of types contributed to freeing an accused man. Rohden (73,74) has also made a study of prisoners.

## II. Critical Discussions of Prevailing Methods.

All countries have been studying the problem of personality, and the literature now is enormous. Since the various countries have developed characteristic methods, it is necessary to consider them separately. I shall first give the prevailing methods now in use in America.

The work done in America has been carried on by educators and psychologists. With very few exceptions they have taken over European methods and modified them. This process led rather to superficial investigations than to deep exploration into the problems. There is therefore a lack of theoretical background. The educators have set up the principle that all studies of personality must be objective tests as much as they could. The tests devised for everything are legion, and the flood continues in the face of criticism which is now beginning to pour in from all sides. The leading educational psychologist, Thorndike (83), with a committee using a Carnegie fund, came to the conclusion that:

"Existing instruments represent enormous improvements over what was available twenty years ago, but three fundamental defects remain. Just what they measure is not known; how far it is proper to add, subtract, multiply, divide, and compute ratios with the measures obtained is not known; just what the measures obtained signify concerning the intellect is not known. We may refer to these defects in order as ambiguity in content, arbitrariness in units, and ambiguity in significance."

If it were not certain that Thorndike was serious, we might take these statements to be said in irony. If the enormous improvement over twenty years ago consists in not knowing what the tests measure, and what they signify concerning the intellect, it is hard to see what the enormous improvement is.

Yet, in spite of this complete lack of knowledge about the contents of the tests or what they measure, educators are devising new tests daily on the same principle. They analyze school rooms, social activities, and every form of activity a pupil is likely to take up. Then on the basis of this analysis, tests are devised for the presence of the elements, on the assumption that the desired result is the sum of these elements. Their repeated failure in this method in respect to character has been explained by individual differences, but this is the very crux of the problem. Why give tests for these elements when the discrepancy between the sum of the elements and the desired activity is exactly what makes up the activity in the first place? If the Terman test is given, is it a test of intelligence, special ability, or something else? There is, to be sure, a division according to standardized reactions of thousands of school children, but, What has been tested? and What is the significance of the classification on the basis of the test? and, finally, Do educators have the right to tamper with the lives of children on the basis of such arbitrary divisions? There is no scientific answer to the question. Educators ignore this fact, however, and the whole American educational system is beginning to groan under their methods. It is exactly the same idea that led Watson to say that he could make a genius out of any baby if he could have full control of the conditions. This is on the supposition that he could analyze the elements of genius and then put them back together again, giving a new genius. The ridiculousness of this statement hardly needs discussion.

Scarcely a man of genius is so well known as Goethe, yet when we isolate the elements making up his life and character, we could not produce another Goethe by recombining these elements in a new individual. There was something in Goethe greater than the sum of these elements, which disappears in the analysis. It may be of interest to know that this atomistic idea also prevailed in Germany. Goethe was very fond of red wine. The young aspiring writers began to drink red wine in great quantities, but no new Goethe appeared. Red wine was an analyzable characteristic of Goethe, if it could be separated and studied, but this was only a part of a whole and gave no clue to the whole. In order to study a genius a greater whole is necessary. These tests given by educators are not based on the study of greater wholes, but are put together empirically by standardizing them.

The educators have assumed that there is a one-to-one correlation between traits and some test. Tests are multiplying daily on this theory, and it goes without saying that outside of the increase in the number of tests no progress is being made towards a better understanding of either character or activity. On the contrary, the thousands of tests that are now in use and that are increasing rapidly tend to cloud the true facts, and educators will end in complete confusion (65,84,92).

Divisions made by the tests are purely arbitrary, and those that are the best standardized are still as unknown as to contents as the latest tests devised. It is clear that a test of any kind can be devised, but the question then is what has been tested, and what is the significance of the division made by the test.

I can devise a test on the basis of how fast people lay ten coins on the table. People will fall into groups, and I can standardize the reactions of thousands of people to this test. But what am I testing, and what is the significance of a division of people on the basis of this test? I can use complicated formulae to show probable error, standard deviation, methods far finer and more specific than what they test.

Criticism is now beginning to come in, and the new investigations in Gestalt psychology and in European schools will no doubt change the fundamental principles of American education. Let us take some of the criticisms by writers. Révész (69) has written a book on his studies of a musical prodigy. He gave all the known tests and collected the results. He found that the tests did not give the whole. In his own words p. 40:

"In our case the inadequacy of this measurement of intelligence by tests is proved in a most striking manner. We get a most indistinct impression of Erwin, one which is in no way characteristic of him, if we base our conclusions merely on these tests of intelligence, for precisely that quality which is most remarkable in his intellect, its brilliance, is not expressed by this method."

And when the differences between the sexes are also confused according to the tests devised, we see more than ever the discrepancy between the test and the things tested. A glance at the conclusions reached in recent years by educators which are prevalent in most text-books will show this even more distinctly. The following is a quotation from Porteus (67) who is combating these absurd tests. He states that the educators have found with these tests that:

"There are no significant mental differences between males and females. There are no significant mental differences between the average fourteen-year old boy and the average man.

There are no significant mental differences between races. The difference in achievement is due not to innate differences in the sexes but merely to inequalities of opportunity and training."

These absurdities are clear without discussion.

A few examples of American methods in this field can be given, chosen not only from the worst groups, but also from the better investigations. Probably one of the most typical of these investigations is the experiment conducted by Hull and Montgomery (33). This experiment was also given by Watson in his "Psychology from the Standpoint of a Behaviorist" as proof of the inadequacy of graphology. This investigation of handwriting belongs to the category of investigations of character that are based on an evaluation of character given by untrained lay minds. The results, regardless of whether they are positive or negative, are in all cases valueless. An evaluation of character can only be made by a trained mind, a man must have a special training and talent, especially talent, for such investigations. The lay mind is notorious for its inability to judge the fine shades of character, it is being continually misled by certain appearances, just as it is misled in almost every field of activity. Great minds are in constant conflict with the opinions of laymen. Therefore any judgment by the lay mind in a scientific investigation, where this is the only criterion used, must be condemned as unscholarly and unscientific.

Now let us turn to the method used by these two workers. They tested 17 students at the University of Wisconsin in a medical fraternity. All subjects wrote a paragraph from a magazine at home. They then classified the others in the group

according to the following traits of character:

ambition - writing sloping upward.  
 pride - " " downward.  
 bashfulness- writing traced with fine lines.  
 force - (a) heavy lines, (b) heavy bars on the t's.  
 perseverance - long bars on the t's.  
 reserve - closed a's and o's.

The m's, n's and t's were measured. Then certain characteristics of graphology were used, as noted above with the traits. After the ranking of all the students in these two categories, an attempt was made to correlate the results. Little correlation was found.

Now let us turn to the method again. If we take 17 students and three letters we are pretty sure to have doubtful results. One thing is certain, a modern graphologist would not limit his judgment of any character to single features, as was done in this test. A skillful graphologist takes the entire picture of the handwriting presented to him, not the elements. The traits are not catalogued neatly according to lines in the handwriting and they are not considered fixed invariable properties. Klages(42) gives as high as forty different interpretations of just one feature in handwriting, which may all be more or less contradictory, depending on the relationship in the whole. Therefore it is seen that this method by the two Americans is not even along the lines of the leading graphologists of the day. Miss Downey (17) said practically the same thing in her article.

Another excellent example is the journalistic test of Freyd (24). Freyd proceeds objectively with this problem of finding tests for journalistic ability. Reporters were studied and certain traits were analyzed out of the study.

They are listed as follows:

High degree of intelligence.	Social ability.
Broad range of information, especially on current events.	"Nose for news."
Good memory.	"Nerve".
Language ability.	Keen interest in sporting

It can be seen that the first group would represent many professions besides journalism. The second group consists of traits that are highly indefinite, and are a result rather than the cause of good journalism. A good journalist might be lacking in most of the traits, but still possess the ability to write editorials, or show ability in other fields. I shall quote the first test as an example of the method.

Test 1. To measure complex ability known as a "nose for news". It is probably acquired through training, but the extent to which the student possessed the ability before his training may be indicative of his future performance in the vocation. Ten pairs of statements were given, and the prospective journalists selected the correct answers from the pairs. The correct answers were obtained by sending the test to editors of forty leading newspapers and to instructors in journalism.

It will be noticed that the 'correct answers' were determined from 'leading newspapers' and not from a scientific consideration of the question. This means that with no scientific basis for such a study Freyd has assumed that what forty men say is correct. Even supposing that the forty men do give correct answers, it still does not follow that a person who can select these answers from the pairs will be a good journalist. If this were true, then the sum of the elements of any profession would give the profession, which is scientifically false. Journalism depends on so many things that simply listing the various traits (elements) to be found in successful journalists will give no clew to the journalist per se. That is, the things

that distinguish the profession of journalism from that on any other profession are not to be found in the above traits, or in their sum. In short, it can be concluded without ever going to the trouble of giving such a test that the results will be negative, and Freyd finally winds up with this for his conclusion. This is said in a typically American fashion that can be seen in experimental work now in most periodicals:

"While final evaluation of the test as indications of success in reporting must be delayed a number of years, a study of scales may throw some light on the possible future value of the tests."

It will no doubt be many years before investigators will finally see that such methods can never give results.

Another example is the work of Brandenburg (9) entitled "Analyzing Personality". Traits for good personality were chosen by voting, and on this basis each of nineteen students rated one another. Such traits as accuracy in work and enthusiasm were selected, these being the first two. This is a complete divorce from scientific theory, the results can in noway be used to show anything about personality, since the analysis alone would suffice to prevent this; but in addition to this laymen were used in voting on a 'good' personality, whatever that is.

One other work by Bowden (8) can be mentioned. Bowden studied college leaders and collected character traits. Here again no conclusions can be drawn, since the analysis excludes all knowledge of the relations of the whole. If character traits are collected without regard for the psychology of character, the conclusions can go no further than stating that such traits have been found. If some conclusions are drawn about leadership in

general, the logic will be false, since this is building up the whole from its parts. Leadership must first be studied in a greater whole, then the colleges will follow without much difficulty.

Miss Heidbreder (27,28) can also be included in this category. She conceived the idea of using Freyd's 54 traits in a questionnaire and found no difference between men and women in college. This is the same as letting patients diagnose their own diseases on the basis of a questionnaire of symptoms.

Travis (86) has also approached the study of character by applying certain tests. He went through the literature on psychiatry and listed certain traits according to the methods of psychoanalysis. With these traits arranged in groups, he gave the test in one form, and later gave the same test in another form. The two were correlated. He concluded that this proved the efficacy of the test. The next question was to correlate these findings with something, which is, according to him, not yet worked out. His method was the usual American method. The ratings for one individual were taken from three others who knew him. Also the ratings from teachers, as well as ability shown in the subject's work were used. Finally, the scores from intelligence tests were correlated, but showed little correlation.

These methods have been used so often, and the results are almost invariably without value. Below are several traits with questions attached selected from the various groups:

- Owardice - Take defeat with a smile.
- Negativism - Disregard the advice of others.
- Tidiness - Take a bath.

Extroversion - Do the things you dream about.  
Sexual inactivity - Stay away from the dance.

One glance at the above characteristics will show the pressing need of first correlating the traits with the questions, before any attempt is made to use the results in a correlation with character. It would certainly puzzle any one how cowardice and taking defeat with a smile could be related at all. If there is any relation, there would certainly be such a discrepancy that the results would be valueless. Taking a bath and tidiness probably would meet with refutation in certain European or Asiatic districts where they do not take baths, but may be quite tidy. If the test for extraversion is simply to question whether people do what they dream about, we can throw Kraepelin and Bleuler in the paper basket. The last question regarding sexual activity would probably draw a smile from any one not intimately associated with American methods. Staying away from a dance may have so many reasons back of it that sexual activity probably would not enter in at all. Many people with tremendous sexual activity sometimes have never danced in their lives, and have avoided dances, but this has not stopped the activity.

There are other tests that illustrate the same general tendency. Certain traits are found and these are correlated with intelligence tests. From the above discussion it is at once clear why they all have been more or less negative. A trait is a complex phenomenon, and intelligence as tested by the so-called intelligence test is completely unknown. Now a complex trait is correlated with an unknown, and most investigators wind up their conclusions with the statement that their results are not to be

taken as final, but that future study in this direction probably will lead to more definite understanding. Such tentative conclusions have become more or less the rule, even in doctor's theses at universities! Another method is to correlate physical characteristics with tests, such as height, weight, and size of head. Here again, the unknown thing that is tested with these tests is correlated with some physical characteristic which may have no direct connection with character at all. At any rate, the results have been uniformly negative.

Personnel tests in general follow the same methods. Occupations are analyzed, and the elements are standardized on professionals in the fields. The resulting tests are used on applicants for the same kind of work. If the operations in various lines of work tend to become more or less simple, so that they actually consist of just a few movements, and if intelligence plays a small role, and, in general, if all other factors are ruled out, such tests may give a fair indication of ability in the prospects. But when they get into intellectual pursuits, such tests become more ridiculous than applicable. Journalism, for example, is a highly complex occupation. A nose for news, an interest in public events, and many other "elements" can be found in all journalists, but an aspirant may have all of them and still be only a mediocre reporter. He may be even trained in just these elements, so that he can pass the most severe examination in them, but as a reporter he may be inferior, and radically inferior to one who probably has not had any training at all. What makes a good journalist is not the sum of these elements, but is something more.

If we are going to devise a test for journalism, we must not analyze journalism, but we must try to put journalism in a greater whole, we must study all professions and the types of men that study in them. By varying conditions we can ascertain how much we can change certain elements in order to make a good reporter poor, or vice versa. By this time so many facts will not be devised, since the profession is so complex that a rigid test is impossible, and only a variable test could at all be practical.

Other methods use ratings. This is a highly pernicious method when not used correctly. Teachers, friends, warders in prisons, and other individuals rate people they know on some characteristic, or on some trait, or on some body feature. These results are then compared with actual findings in the subjects. One attempt to study intelligence that illustrated this method was made by Sir Charles Goring and reported by Paterson (64). A warden and a prison physician were asked to classify prisoners on height of forehead and intelligence. It was found by actual measurements that there was no correlation. Such a method is absurd. What is intelligence? If scientists have devised no methods by which intelligence can be measured in individuals, how could a warden or other person without special training do such a miraculous feat? And a one-to-one correlation between the height of the forehead and intelligence has been disapproved years ago.

Finally, tests have been devised to study school children. Such tests have been multiplied enormously in recent years. If the thing goes on, children will have no time to learn anything,

but will spend all their time taking tests devised by the schools of education. Tests for progress, tests for almost everything that can occur in the school room. But a complete analysis must precede these tests, otherwise they will not test anything. Standardization is used to make the tests applicable. In all these analyses and tests the whole, education, as viewed in the light of centuries and all countries, is so completely lost that it is extremely difficult to see how progress can be made at all.

Within the last few years questionnaire methods have increased. Questionnaires for personality are now available in many forms. These questionnaires are based on the same principles as the mental test, and they are being standardized in the same way. Ten years from now another Thorndike will write that it is not known what they test, or in how far the results can be added, divided and multiplied. Let us inspect such questionnaires as the Thurstone and Thurstone Personality Schedule used at Chicago, the Robert G. Bernreuter Personality Inventory from the Stanford University Press, the Haggerty-Olson-Wickman Behavior Rating Schedules, and the Allport and Allport Reaction Study. The Bernreuter inventory consists of 125 questions relating to personality. The questions are marked 'yes', 'no', and 'indifferent'. Tentative percentile norms are made out for high school, college, and for men and women. Now when the test was standardized on thousands of people, just what is the significance of a percentile rating? The results will be exactly the same as that for the mental tests, there will simply be a method by which a normal reaction can be obtained, nothing more. A devi-

ation from this standard may have significance, but an equal rating of several individuals will leave the individual differences untouched. Thus, instead of studying personality, there is again a standardized reaction set up based on the number of plus and minus and indifferent answers. The relation between the questions and some trait or personality type should be made, but is not made, any more than a correlation between actual intelligence and an intelligence test. Therefore, the personality inventory can give no more than an average reaction type, and personality and individual differences will be as unknown as they now are. The Thurstone test is exactly the same. The Haggerty test is nothing but a standardized rating sheet. It has more possibilities than the others, since the results are ratings and give more of a picture of the individual. What the Allport test is supposed to give is not apparent from the questions on the sheet.

It can be seen that all these tests are striving for objective standardization, and the results will always be the same, namely, the setting up of an average performance. What the test actually tests is not known, and the scientific problem of intelligence has not made any progress because of the mental tests. In fact, these personality tests are simply mental tests, and if they can be standardized, they can be used interchangeably with the mental tests. When it is seen how far Europe has progressed in the study of individual differences without objectivity

or standardization, it can be hoped that American investigators will not allow themselves to cloud the issues by such methods.

All these remarks can apply to the work done by Katz and Allport (40).

Let us consider now some of the better tests. Among the oldest and best known are the Downey will-temperament tests (17-20). These have been used widely, and the criticism has been both favorable and unfavorable. There is no doubt that the tests contain many excellent points, but I want to point out again the trouble with all tests that lack a theoretical background. Miss Downey states that she wishes to test the dynamic pattern of the individual. She gives the following tests:

I. Speed and fluidity of reaction.

1. Speed of movement. (Handwriting).
2. Freedom from load. (Ratio of natural speed to capacity speed)
3. Flexibility. (Disguised handwriting and imitation of models).
4. Speed of decision (Speed in reaching decision of two pairs of character traits).

II. Tests of aggressive traits.

1. Motor impulsion. (Speed and size with distraction).
2. Reaction to contradiction, suggestibility. (Two envelopes with easy and hard tests. Subjects are to state later which selected and are contradicted by E. Also true and false test.)
3. Resistance to opposition. (Subjects close eyes and write names, pen is retarded by E. Either push aside, or dodge, or exert no resistance.
4. Finality of judgment. (Subjects were asked to revise test 1,4. To discover waverers).

III. Carefulness and persistence of reaction.

1. Motor inhibition. (Voluntary retardation of writing a sentence).
2. Interest in detail. (Accurate copy of model, and given general instructions to copy. Time difference measured).

3. Coordination of impulses. (Rapid writing of sentences on short line).
4. Volitional perseveration. (Writing in disguised hand).

These are some of the tests, although others are given. It can be seen that there is much of value, but there is the danger of shifting from these simple tests to generalizations of life without the necessary theoretical justification. Finality of judgment in the simple test may not correlate with an actual situation in life, where the individual must make a decision under entirely different conditions. Motivation, ambition, value of goal, and pressure, all enter in and influence the results. There is no doubt that there will be a correlation between individuals in actual life and these tests, but the matter must be investigated further. We find here, however, a very fertile field, and a test of character can probably use these tests as a part of its system, although there can be some modifications. The will-profiles obtained by Miss Downey are interesting and no doubt represent actual types to be found in life, but the question is just how these types compare with types in other fields. We can have perception types, secondary functional types, integrated types, tetanoid types, cyclothymic types, and others, but we are constantly faced with the problem of obtaining a picture of some total type, so that when we see a subject enter our office, we can ascertain to which type he belongs and be able to compare this type with results from workers throughout the world. That such a general classification would be of enormous importance goes without saying.

Roback (17) summarizes certain criticisms made of the tests. The first is whether these tests test character traits. He says that it is doubtful whether the tests can be correlated with

anything that could be regarded as a character trait, and further, whether they actually measure conduct. Conduct is a complex social affair and one would hardly expect to find it correlated with simple handwriting exercises. The next question is whether it can predict behavior. This appears to be doubtful, although some things can be predicted.

Before going further, let us examine the characteristics common to all these tests. None of them has started with the individual as a whole. Miss Downey, representing the best test, has considered only a part of the individual, the dynamic pattern, and the others have considered still less, so that no matter how excellent the results are, their relationships in the whole will still be obscure. This means that we have to make the step sooner or later from the parts to the whole, and in doing this we may find that the parts lose their significance. In distinction to this, the European workers have not only considered the individual as a whole, but we find the constant tendency to think in terms of still greater wholes, in terms of history, culture, and larger groups. Such a broad picture is rather dismaying to the American workers, and they have tended away from the procedure as much as possible. There is always the desire to simplify and analyze, but this gives few results, and so Americans are forced willingly or unwillingly to admit that most of the valuable ideas in the field of character are coming from European workers, and will continue to come as long as the analytical method prevails.

A few other of the better tests can be discussed hurriedly. The Pressey X-O test (68,14) has attracted some attention and

and has been used by a number of workers (12). It is based on the principle of association. The subjects cancel out all unpleasant words, and put a circle around pleasant words. Certain complexes are used: fear complex, disgust complex, sex complex, self-feeling complex. Miss Collins (14) states in criticism that there is no objective control, and the experimenter must be in rapport with subject to insure frankness. The chief deficiency, however, is the lack of theoretical background, one does not know the significance of what is tested.

Schwegler (78) has performed an interesting study on introversion-extraversion. Pupils were selected by teachers on the basis of the Marston rating system. The two extreme groups were selected and those in the middle were eliminated. A battery of tests was given to these extremes, and their reactions were studied in order to ascertain any differences in the reactions of the two groups. The results pointed to many distinct differences between the two groups.

Rosanoff (77) has tried to combine many of the prevailing types with psychiatric material. On the basis of this material he gives certain types: antisocial, cyclothymic, autistic, and epileptic personalities. Traits that distinguish normal personality are inhibition, emotional control, a superior durability of mind, rational balance, nervous stability. The lack of these traits results in psychopathic individuals, and from these one can conclude to normal people. He also discusses intelligence, sexuality and other components of personality (physical factors, mathematical ability, and musical talent). In his analysis of personality he used data of direct investigation, data of

heredity, ontological data (not all traits are present at birth), pharmacological data, data of organic pathology, and data of senile involution. His work is interesting, but there is more insight into personality from the works of Kretschmer, Bleuler and others, since they are taking more things into consideration.

There is, of course, a number of men working along the lines laid down by Kretschmer. Farr (23) has made an anatomical study, but he has stressed the anatomy too much. There is not a one-to-one correlation between anatomical structure and personality traits, but there is a relationship which becomes clear only when the whole picture of the individual is used.

Wertheimer and Hesketh (90, 91) have conducted several investigations using the Kretschmer technique. Aside from minor changes and some deviation, the results of Kretschmer were confirmed.

Mohr and Gundlach (57) have made a very interesting investigation. They point out the fault, just mentioned, of trying to confine the investigation merely to anatomical measurements. They quote Kretschmer as follows:

"The important idea about a type is that it possesses a firm center but not hard and fast boundaries. Types as a rule can only be determined intrinsically; we cannot mark their boundaries. By 'type' we mean a nucleus of more distinct and among themselves quite firm foundations which have been deliberately lifted out from a sea of progressive transitions. This holds good for a racial type as well as a personality or a clinical reaction type." (Kretschmer, Hysteria).

Their work confirmed much of that done by van der Horst (32). They also used the Rorschach test, but their interpretation was somewhat objective.

Of importance is the work of Stockard (81) done in 1923.

He found two types, linear and lateral. These correspond to Kretschmer's asthenic and pyknic. Farr stated that he did not think that the athletic habitus of Kretschmer was sufficiently established, and followed Stockard for this reason.

Doll (16) has pointed out some interesting facts about body build and feeble-mindedness. He found that 75% of the feeble-minded failed to reach the normal average of sitting height, and 90% failed to reach the normal grip.

Bean (4) discusses the significance of anatomical form and European types. He states that the four original races of Europe to-day represent only two distinct anatomical forms. Thus, the Celtic and Alpine types are much alike, and the Nordic and Mediterranean are also similar. This follows very closely the work done in Europe.

Coriat (15) has attempted to correlate the Kretschmer types with Freudian terminology. His discussion is interesting and may be used to bridge over the differences between prevailing systems of thought.

Bibliographies of other work can be found in Roback (72) and May (55,56).

Now let us go to European methods. Italy, Germany, Switzerland, Holland, France, and England have given us an enormous literature on personality during the last 100 years. The work of Lombroso (51, 52) gave a new insight into the field of insanity, and this soon spread all over the world. England and France show distinct characteristics that exclude them from the German workers.

England and France are still working under the influence of positivism, the empirical and analytical methods being used. The results have led to brilliant works on various phases of personality, but they have not advanced our scientific knowledge.

The sudden advance in this field centers around three men, Kraepelin, Kretschmer, and Bleuler. These three men have given us an insight into the fundamental problems of character and personality as no others have.

Kraepelin (47) classified the mental diseases on the basis of certain personality traits, not on the basis of critical examination for objective criteria of the diseases. The significant principle of this division is not one based on a knowledge of the disease, but on the classification of the temperaments. Certain groups of patients have certain characteristics in common. One group is negativistic, autistic, intensive, and ambivalent; the other group is just the opposite. This was revolutionary and opened up the entire field of modern psychiatry. The step from the normal to the abnormal had been taken by Lombroso (52) who states p. 359:

"Between the physiology of the man of genius, therefore and the pathology of the insane, there are many points of coincidence; there is even actual continuity."

And now Kraepelin showed that there are fundamental personality types displayed not only in the insane but also in normal individuals. Bleuler (6) extended this classification and introduced the term 'schizophrenia' for dementia praecox. Kretschmer (50) showed that there was a correlation between body build and personality types (including, of course, both normal and abnormal individuals) and applied his classification to men of genius.

This is the foundation on which all character study must be made, and these three men stand unique in the history of character study. Their methods are summarized excellently by Jaensch (34) p. 75:

"The psychiatrist, like the exponent of 'geisteswissenschaftliche' psychology, is always concerned with an individual as a whole, and with different human types, which emerge under such a treatment. Certain deficiencies of experimental psychology, which clung to it in the beginning when its methods were still to a large extent modelled on those of the inorganic sciences, would therefore be noticed most by him. Such deficiencies, from his point of view, would be the 'prejudice of uniformity' which overlooked all typical differences; the lack of any tendency to take account of the whole personality; the over-emphasis of the physiology of the senses; the 'physicalism' of overhastily drawn-up theories, whose ideal seemed at one time to be a mechanics of psychic elements; the 'intellectualism' of these theories, which only takes account of those aspects of psychic events that are most amenable to such 'physicalistic' treatment, and in doing so overlooks those aspects of personality which seem to the psychiatrist and to the 'geisteswissenschaftliche' psychologist the ones that really determine psychic events, and therefore the most important."

The literature that has sprung up around these three men is of such enormous proportions that even a survey would be a work in itself. There have been criticisms of all three men, but the general status now is one of scientific acceptance of their results, although details may still be in doubt. American writers have conducted experiments along the same lines. The present status of the Kretschmer types is probably given best by Polen (66):

1. The Kretschmer types seem to exist; an exact comparison between Kretschmer's types and those of other investigators is not always possible;

(a) because Kretschmer used no index values which is also true of many of the other investigators.

(b) because it is a question of types that seldom appear pure, which gives room for subjectivity and arbitrariness of the different investigators.

2. The types are not determined by sex, age or environment. They are not the same as racial types. Just as racial types arise by mutation, the constitutional types arise in the same way, for which, however, modification plays a big role. The play of mutation that determines the constitution lies within the breadth of variation of the races.

3. A final judgment of the existence or non-existence of the relation between body build and psychoses is not possible.

It appears that the pyknic body build is more frequent among circulars than among schizophrenics and normal people. Whether a specific affinity between schizophrenia and leptosome-athletic--dysplastic groups exists, whether these types are to be met more frequently among schizophrenics than among normal people, is still a question.

5. The existence of psychic types in the Kretschmer sense can be considered established. As regards the relation between body build and temperament, judging from experimental work, the relation between pyknic body build and the cyclothymic temperament is more unitary than that between body build and temperament of the other groups.

The Austrian and Swiss schools have followed Freud in the psychoanalytical field. This has given great insight into the study of character, but there is by no means scientific acceptance of either the methods or the results. There is no doubt that the Freudian school has gone far beyond the limits of logical analysis, and any further steps in the same direction will lead to confusion rather than to new discoveries.

Jung (37,38,39) has broken with the Freudian school, and has developed one of his own. His chief contribution has been the study of introversion and extraversion. This dichotomy is merely one of many existing at the present time. Its chief lack is probably the failure to correlate it with something more tangible, such as body build, experimental data, etc.

Adler (2) has also broken with Freud and has developed his school with the inferiority complex as the basis. All the faults of the Freudian school are found here in another form, and progress in the same direction seems closed.

A very brilliant Swiss psychiatrist, Rorschach (75,76), devised a test to distinguish between mental diseases. The test has been used extensively in relation to the Kretschmer types and for other purposes. In Europe the test has been used in general following the same principles as laid down by

Rorschach, but in America the test has been modified somewhat (vide Whipple) and factors introduced that were not in the original test. The test was used by Rorschach as a diagnostic test, and the following statements give his idea of its use, p. 113:

"The diagnostic application may arouse doubt here and there. It might appear as though the difficult art of diagnosis would be made technical, as though finally every laboratory assistant with the necessary introduction could fabricate psychograms, just as he stains tubercular bacilli. This doubt falls away. There is the need of a certain amount of practice in psychological thinking in order to draw the correct conclusions from the calculation of the large number of factors. There is also the need of long experience."

The last use of the test was made by Oeser (60). Oeser belongs to the Marburg school, and this school for some reason or other has broken with the Kretschmer literature. Oeser, while not giving any actual data, claims that there is no division into the Kretschmer types according to the Rorschach test. We can certainly be sceptical until we know whether Oeser is competent to judge the Kretschmer types (vide Enke(21)).

Without the slightest doubt the most important psychological school to-day in the field of personality is the Marburg school under Jaensch. This school has been highly productive and has given an insight into personality based on experimental work that is extremely valuable. The one flaw is that Jaensch has seen fit to exclude all data based on the Kretschmer types.

Another important field is in Holland. Heymans and Wiersma (29) using a biographical method have made some rather unusual classifications of famous men now dead. Their work was extended to living men, and there are now classifications based on professions.

The weakness of this system consists in the lack of psychiatric material. The use of primary and secondary functions without some physical correlation makes the classification a little doubtful. Van der Horst (32) has also done some excellent work.

France, England and America have contributed practically nothing to these studies. This is due to their methods, which have been highly objective and analytical. The revolution in psychology starting in Germany has emphasized the opposite method, and for this reason Germany is far in advance of the other countries. America seems to be following now in second place, although the use of educational tests is still clouding the issues.

Other workers in Germany must also be mentioned. Klages (42), Utitz (88), Spranger (79), Ewald (22) and other have developed a field called "Characterology". This field is more systematic than experimental. The systems laid down are interesting and a final science of character will without doubt follow their systems, but there is a pressing need now to gain insight into the problems.

### III. Theoretical Discussion for a Technique of Classifying Types of Personality.

Since there have been many approaches to the study of character and its testing, it is necessary to give here some facts about the present approach as used in this work. No correlation is used. The method of accumulating a great many cases and then dividing and multiplying the results has a tendency away from the purpose of this work. We are interested in individual differences, just as the psychiatrists were who have given the foundations for a study of this kind, and such things as average performance and standard deviation, which have given us little insight into the problems of personality, play no role in this work. On the other hand, the relations between traits will be stressed, between performances and other factors. This also excludes quantitative differences. Quantitative differences are an impossibility in the field of character and personality, since there is little agreement just what these words mean. They signify a very complex phenomenon, and any attempt to reduce certain traits or measurements to a scale is doomed before one starts. There have been too many attempts in the past to establish quantitative measurements and tests, but only the most extreme optimists could continue in this line. This means that an individual is considered as a whole, and he is not dissected or analyzed, but an attempt is made to study his reactions as a whole to certain conditions, it is, therefore, a functional method. There will be no attempt to break human behavior up into elements, and then to try to test these elements, or, on the other hand, to break the environment up into elements, and

to conclude something about man's behavior from their combination. The present attempt is limited solely to means that show an individual's reactions as a whole and over a period of time. This eliminates definite tests and experiments. In short, temperament or character will be diagnosed the way a physician diagnoses a disease. A successful physician begins with the patient's life as a whole, then he seeks appropriate tests, one time this, one time that, depending upon each individual case. Educators may say that such tests are arbitrary and depend entirely on the separate examiners, and also that such tests cannot be standardized and compared. The answer to this is that the diagnosis of complex diseases can neither be standardized nor reduced to a system by which a man with slight experience can follow certain instructions and diagnose a disease successfully. Neither can all the symptoms of a disease be written down, so that a patient can diagnose himself; nor is it possible for a patient to write down his symptoms, and then send them into a doctor for diagnosis. And, further, symptoms as pictures or patterns can be compared, whereas the actual technique of diagnosis varies in different countries and even in the same country. The reason for this is that disease is too complex, it depends on many factors besides objective symptoms, i.e. there is not always a one-to-one correlation between a disturbance and an objective symptom. It is the physician's duty to study the relationships between certain factors, and in this way he arrives at his diagnosis. It is exactly this method that will be used in this work. There is seldom a one-to-one correlation between traits and actions, and a 100%-sure

diagnosis is impossible in all cases. Each case offers new possibilities, each person has experienced things in a slightly different manner. Therefore, we must study the relationships between certain factors, so that the variation in one direction or the other will still preserve the original relationship or pattern. A melody may be increased or decreased in intensity, it may be played with primitive instruments, or with the finest orchestras, the original pattern not only remains but can be recognized. Character is just such a phenomenon; we have certain patterns that occur again and again throughout the ages, and we find that the differentiation of these patterns may vary tremendously, but an experienced observer can detect them. This also accounts for the difficulty up to the present of establishing a satisfactory method of classifying types. Investigators have been led astray by the finely differentiated performance of individuals at the one end, and the crude undifferentiated performance of some at the other. They have not wanted to include both in the same category, and for this reason we have had one failure after the other in a classification. Starting with Lombroso, we have gradually gotten away from this idea, and the rather wonderful work of the psychiatrists within recent years has broken down still more barriers. There is no reason now why a criminal of the worst kind, and a preacher of the highest type may not belong to the same type, since both may have the same fundamental personality pattern. In the one case, it is undifferentiated, in the other it is highly differentiated. There can be no moral, economic, intellectual, or other arbitrary standard used, since this is unscientific. It is unscientific

because we are not dealing with fixed values, but with arbitrary and relative terms that change their meanings from time to time, and about which there is little agreement. Thus, a moral man and an immoral man may belong to the same type, just as the schizophrenic patient in an asylum does not differ greatly from a pronounced schizothymic individual who is perfectly normal and may be a philosopher, preacher, mathematician, or run a milk wagon.

It can be seen from the above discussion of the methodology that intelligence will not be used as a criterion. There have been no scientific tests for intelligence devised up to the present day, and all tests made on the basis of intelligence have failed signally. Neither is there any agreement among thinking men just what intelligence is, therefore a quantitative test is impossible. The so-called intelligence tests given by examiners with full instructions to large numbers of children and adults cannot possibly test intelligence, or better, we cannot say what they do test. Neither are individual differences considered, but only the performance in accordance with a standard or average performance. Therefore we are not justified in using them in conclusions with intelligence. A man who has never studied psychology can often make finer distinctions between individuals than can ever be shown by an intelligence test. We cannot measure quantitatively between the intelligence of Spengler and that of Einstein. We are therefore limited to a relational analysis, we can compare the two, we may find that they belong to the same type, i.e. have the same pattern. This will also explain many of

their actions, and also the nature and style of their works. This can be done, but a test will fail just the minute it is used quantitatively. If we analyze Spengler, and then Einstein, these elements put together will not give us the philosopher and the mathematician, since the whole is more than the sum of its parts, and we have destroyed the whole in our analysis. If we study the relations, however, we do not change the whole, but merely vary the conditions.

The next question is what we can use for such a differentiation of types. There have been classifications throughout the ages, but none of them has been adequate. The classical types, sanguine, choleric, melancholic, and phlegmatic have been used up to the present day, and we can classify certain individuals with as much certainty today as at the time of the Greeks. But this classification is not adequate for many reasons. There are individuals who belong to none of these.

During the last 50 years there has been an ever-recurring dichotomy of character which has become more and more persistent. We find an array of names for these types, such as: tough- and tender-minded (James), objective and subjective (Stern), primary and secondary functions (O. Gross), introverts and extraverts (Jung), Schizothymes and cyclothymes (Kretschmer), schizoids and syntonics (Euler), poietic and kinetic (H. G. Wells), sensory and motor (Baldwin), integrated and disintegrated (Jaensch), and so on through all of the various systems. It is striking how much similarity there is between these types, the investigators have all used different names, and all have approached the problem from different angles, but it seems that they are all describing the same things. Not only

do they describe similar types, but they often use exactly the same words in their descriptions. These dichotomies have been strengthened by Kraepelin's work in his division of the mental diseases. This association of the normal with the abnormal has given new impetus to the study of character. This array of authorities certainly points to the conclusion that there actually is a dichotomy of character, and the problem now is to find the fundamental principles of all these systems, then an application can be made to normal individuals.

The first question is naturally about the nature of these two types, are they opposite poles with components alternating in dominance, and representing stages of differentiation from the integrated to the disintegrated forms? I shall consider this theory. We have two poles in normal life, male and female, and there is an approach on the side of the male towards the female pole, as well as a corresponding approach of the female towards the male pole. Thus we have effeminate men and masculine women. Homosexuality seems to be such a shift towards the feminine pole, and psychiatrists often report feminine characteristics in their male patients. The same is true of masculine women. They shun female activities, take up masculine pursuits, dress and act very much like men. And in support of this, we find that manic-depressive insanity is more common in women and men with more feminine characteristics (pyknic type), whereas schizophrenia is more common in men. We might say then that we actually have two poles, a male schizothymic pole and a female cyclothymic pole. This brings us to Weininger's theory (89) of arrhenoplasm and they-

plasm.

This theory states that sex cannot be ascertained in the foetus before the fifth week. It is to be assumed, however, that there are differences before the differentiation process reaches a stage where we can recognize it. Sexual differentiation is never complete, but some individuals show a less differentiated state, while some a greater. This gives all the degrees between two poles. We have then such a condition in which the two components are always greater than zero and less than 1.

$$0 < \alpha < 1$$

$$0 < b < 1$$

$$0 < \alpha' < 1$$

$$0 < b' < 1$$

This theory is not new and was known at the time of the Greeks, where it was called ἀρσενόθυλις. Weininger asks where sex is to be found. A zoologist, Steenstrup, in Copenhagen, in the middle of the nineteenth century set up the principle that sex was every place in the body. Thus every cell has a certain dominant sexuality, which may be two different substances or modifications of one. The hormones in the body affect the activities of these cells so that the secretions complete the sexuality of the cells.

The theory goes into unknown fields, but it has many points in its favor. When castration takes place, there seems to be a change to the opposite form. It may be doubted whether this is complete, especially in older individuals. This would point to a differentiation process. However it be, the theory offers a basis for further investigations.

The component theory is maintained by Bleuler and Jaensch.

Bleuler says,

"Every individual has a syntonie and a schizoid component, and one can with closer investigation determine the strength and direction of the same and can bring it in relation to its heredity if one knows the members of the family."

Jaensch views his two types, integrated and disintegrated, as representing two components that may fluctuate in their dominance, one may even become dominant throughout life.

Character, then, is a differentiation process from a certain pattern, determined by glandular secretion and other factors. If we view the differentiation process in this light, we have two different end-products, but both have sprung from the same soil, and both show similarities in many respects, although they may differ radically in others, especially with a high degree of differentiation. Jaensch and his school have worked out rather remarkable experiments showing that perceptions and images are differentiated from an original unity. Some individuals show a more undifferentiated state where even images and external objects are confused ( ). Primitive peoples show this also in a high degree. This differentiation process is similar in every respect to that of Weininger's. Thus, the individual in whom the differentiation has not gone on, where there is still an undifferentiated condition of perceptions and images, we find all of the physical characteristics of an undifferentiated type. This type tends to have a tenor voice, does not mature as rapidly as the other, has good health like that of a child, has bright eyes, his attention strays easily like that of a child, and

is suggestible, and in numerous other ways shows great similarity with the undifferentiated state of the child. The other type, the disintegrated or tetenoid, follows in many respects the schizoid type of Kretschmer-Bleuler. This type matures early, the differentiation process of perceptions and images takes place at an early age, which gives rise to an early split between the outer and inner world, a condition that may never be attained in the other type, the voice tends to be deep, the bodily features become highly differentiated (long nose, wrinkles, receding forehead), health is poor, the eyes sink deeper into the head, there is a break with reality leading to idealism etc. It is this type that tends towards schizophrenia, the other type tends towards manic-depressive insanity. This is with the men. When we come to women we are confronted with many difficulties. In the first place, the body is not differentiated as much as in the man. The skull is smaller and stops developing around 18 years of age. Jaensch and his workers have found that eidetic imagery is higher in girls than in boys, showing that girls are not as differentiated as boys even at an early age. The voice remains high, the facial features seldom approach the extreme differentiation as in man, they cry easily, they are highly objective in their thinking, they are almost completely lacking in abstract thinking, they are more subject to suggestion, and finally, women tend towards manic-depressive insanity. All these factors are rather overwhelmingly in favor of this theory, and the more facts that are gathered, the more they seem to point to this conclusion. More things can be explained by this theory than

by any other. Men are most similar to women when they belong to the pyknic-syntonic type of Kretschmer-Bleuler.

We have progressed now to a point where we can formulate some means of determining this type in individuals who may not show pronounced external features. The wealth of experiments that has been performed on these types gives a possibility of solution. Reaction time, co-variation phenomenon, horopter deviation, form interpretation, stereoscopic experiments, and numerous others will all give us this information.

#### IV. Discussion of Technique.

The present technique is an attempt to avoid many of the errors already pointed out in the preceding pages. The attempt has been made to find certain fundamental factors in the personality that can be used for a test. These factors must be objective enough to give a comparable test. Also, they must have significance after they have been found. As has already been said, the technique relies on recent work done in perception, which shows the degree of differentiation. The body build is also an objective factor. Following is a complete discussion of the technique as used.

The first step is the Kretschmer technique. In place of actually measuring each individual, certain marks that are highly significant can be selected, as has been done extensively by German workers. This means that the examiner must be trained in these characteristics. The body build must be viewed as a whole to see whether the lateral measurements predominate or the lineal. In young individuals this may be rather difficult, but a careful study of Kretschmer will aid in judging. The nose, hypoplastic chin, receding forehead, dolichocephaly, asthenic or tall build would give at one look the necessary characteristics of the schizoid type. A round face, flat profile, brachycephaly, tendency to roundness in all parts of the body, bright eyes, white skin all would give instantly the characteristics of the pyknic-syntonic type. These characteristics are not so difficult to differentiate with a little practice as might be thought. There are types with a distinct asthenic body build but a rather flat face. Here the asthenic build and the long head would predominate. Another individual

may have a tendency to an angle profile, but head and body tend to lateral measurements. Here the pyknic components dominate. Then there are types where the two seem to be combined. In such types there is also a combination of mental characteristics, which are often brought out in the course of examination. As was said, these body characteristics are not difficult to ascertain once they are seen, and especially by studying the literature written on the subject. The first step then in the classification is the body as a whole.

The next step is to determination the biotonus by inspection.

Coming from Kant through Wundt (93), Külpe, Lotze, Ach (1), Höffding and others, we find that temperament has been based more or less on drives and feelings. Külpe pointed out that an increase in cold-blooded natures gave melancholia, and an increase in the exalted natures gave mania, a very early anticipation of later developments in personality work. These two factors are going to be the basis of the present technique, and we exclude the intelligence, as did Ribot. The biological basis of the temperament is made up of the purely physiological processes, especially the endocrine organs. There has been enough work done to show that the glandular balance can greatly influence temperament. Drives are complexes that keep an individual going in some one direction, and go under the names of ambition, activity, etc. The emotional coloring or feelings can greatly increase this drive, in that there is an additional force added. Some people have strong drives without feelings, while others have both, the latter being more enthusiastic than the former. It is proposed to call this 'biotonus' in accord-

ance with Ewald (22). Ewald has localized the function and the presence of tonus in the third ventricle. In the light of recent work in the localization of function, this part of the theory can be left aside. There are function and biotonus, the one not existing without the other. We propose merely to search for the biotonus.

Drives or goal-activity can be present in all degrees of strength. As stated before, a drive will not be measured quantitatively, but its presence will be ascertained even in a slight degree. Drive will be called 'activity' in accordance with the classification of Ribot (70). The biotonus will be associated more with the emotional side of the individual, principally by what can be observed. If the tonus is rather slack, so that activity plays the principal role, this will be called non-emotional. If the biotonus is tense but without drive, it will be emotional non-active. If there are both drive and tense biotonus, the type will be called emotional active. If there is neither strong tonus nor drive, the individual is non-emotional and non-active.

The tonus is determined by the walk, manner of sitting and answering questions, the tendency to go to extremes in life, frequent changes in life, etc. If an individual is placid in manner, sits laxly, follows a steady course in life, the tonus is not very strong. The small details that attend the entrance of a person into the room must be noted, whether with a firm step, whether cautiously, whether movements are slow and continuous, or slow and jerky, or fast and continuous, or fast and jerky. When the individual sits down it must be noted whether

he makes himself comfortable, whether he is rigid with attention or ill at ease, whether he meets the situation with an even grace, whether there is a certain antagonism or negativism. Bleuler has given a very excellent discussion of negativism.(7). Kraepelin used the handshake as a diagnostic means of determining negativism. Munz (58), Kibler(41), Bleuler and others have pointed out the presence of negativism in their subjects. It will be an easy matter to detect some trace of it by the handshake, or by asking some favor, or in other ways that may present themselves. If the majority of symptoms for a strong tonus is lacking, the individual can be designated non-emotional.

The drive or goal-activity cannot be ascertained by inspection, but must be found out by questioning. If there is enough drive to keep the individual actively working in some field without interruptions or showing a dislike for the work, the individual can be said to be active. If the individual tends to rebel at steady work, going off into something else for periods of time, the activity is lessened, and is only sporadic. If this is coupled with the emotional component, it is clear that the individual has a conflict with the two components. Such an individual was Edgar Allen Poe. Artists in general show this tendency, with a high emotional element, and a low drive.

Then the tone must be noted, whether it is buoyant, depressed, melancholic, strained, relaxed, humorous, or serious. This tone is given more by little things that cannot be listed. It is the feeling aroused in the examiner after a short contact with the individual.

We now have the body build, the biotonus, the tone of the temperament. The next step is to give the Rorschach test. The

test is rather complicated, but there are many descriptions of the test in the literature (60,76), so that actual details can be left out of this description. The Rorschach test was originally a psychodiagnostic test, and was empirically standardized on insane patients. The work of the Jaensch school on the differentiation of perceptions and images has given the Rorschach test an entirely different meaning. The less differentiated individuals retain a more primitive perceptual reaction type, and this is shown by the presence of eidetic images, certain characteristics of the Purkinje phenomenon, the prevalence of colors, the covariation phenomenon, etc. Since the Rorschach test is a perceptual test, it furnishes an excellent means to determine objectively the degree of differentiation of the perceptual processes. Since this primitive type has been described in detail and from so many points of view, it is really immaterial what it is called, whether pyknic, Basedowoid, syntonic, cyclothymic, objective, etc. The results of the test can be used synonymously with extraversion or primary function. The word 'primary function' has been selected since it does not imply a social attitude as does extraversion, and it is of longer standing, really coming from Wundt. The Rorschach test is on the basis of kinaesthesias, color-form, form-color, and primary colors. The ratio as worked out by Rorschach and used by all workers since is: movement 1, color-form 1, form-color 1/2, primary color 1 1/2. The responses are classified according to whether these four factors went into the determination of the subject's interpretation. If none of these answers are given, the type is called coarted. It represents a completely undifferentiated stage. If the two tendencies are completely in balance, the

type is called ambiequal, and represents a complete and equal differentiation of the two processes. The majority of people show the preponderance of either the one type or the other. There is one other factor that enters in, the so-called crossed forms. These have been reported by all workers in the field. Body build, the other factors point to one type, and the Rorschach test gives the other. This seems to be a cross between the perception type of the individual and body differentiation. Since no one has advanced a theory what the crossed form is, this is proposed as an explanation. The ten cards drawn by Rorschach are used but not as they are printed, as these were not to be obtained. As good copies of the cards were used as could be made, the answers compared very favorably with the original.

The next step is a writing test. The subjects write the following sentence: "This is a sample of my handwriting. I hope it is good." Three copies are made at the normal speed and size. The subjects then count out loud while they write three more copies. They then count as fast as they can out loud while they write. The next attempt is made to count as fast as they can but to attempt to return to the normal speed. The last test is to write as fast as they can without counting. Three trials are taken for each step. A special note must be made whether they begin before the signal, as this is almost invariably a sign of strong biotonus.

This handwriting test furnished a sample of the handwriting and combines some of the elements of the June Downey test. The attempt to return to normal under distraction presents an opportunity to see what role distraction plays in the subject's life.

A strong biotonus usually results in the subject's overshooting the mark, especially when the subject has some neurotic trace. This test was used for the first time in this technique, and has not been used before. Certain features of the handwriting can be studied, especially the expansion or contraction under distraction. The pyknic type tends to expand, while the asthenic-athletic tends to contract. Schizophrenics may present enormous contraction. Jislin (35) in Russia has made a special study of these phenomena. Expansion and contraction are measured by the length of the lines, taken from the first point of the handwriting to the last, which is usually the period.

The next step is a questionnaire. The following directions are given on a printed sheet:

There are 93 statements on the accompanying sheet of paper. You are to decide whether each one applies to you or not, and also in what degree it applies or does not apply. If you consider a statement as neither exactly applying or not applying, mark either a x or - according to whether it tends towards the positive or negative side. If you think a statement applies, mark xx, if you think it does not apply, mark --. If you think the statement applies to a high degree, mark xxx, and if you think it is inapplicable to a high degree, mark ---.

Indifferent towards the positive side x  
 Applicable xx  
 Strongly applicable xxx

Indifferent towards the negative side-  
 Inapplicable --  
 Strongly inapplicable ---

The questionnaire is composed of the two lists of extravert-introvert traits used by Kibler. Since no importance is attached to such a questionnaire, it is merely used as a check on certain things, and as a means of obtaining certain characteristic reactions. The instructions are complicated, and the large number of negatives can cause a subject a good deal of difficulty.

Any impatience or other indication of biotonus must be noted. The chief purpose, however, of the questionnaire is to give the examiner between 4-16 minutes to note down on paper the observations already made. Since the test takes one hour, and since the examiner may only see the subject for this one hour, all notes must be made with care, and such a subterfuge gives the necessary opportunity. The subjects never notice this in any way. The questionnaire is as follows:

1. Like to read idealistic, bizarre and fantastic books.
2. Good-hearted.
3. Talkative.
4. Tend to day-dream.
5. Friendly.
6. Live a great deal in the future.
7. Witty.
8. Tend towards abstractions.
9. Sociable.
10. Like society.
11. In general do not like children.
12. Slow.
13. Enjoy things quietly.
14. Not sympathetic.
15. Cheerful.
16. Quiet and still.
17. Easy-going.
18. Often apparently altruistic, but actually little interest.
19. Humorous.
20. Egocentric.
21. Indifferent.
22. Take things seriously.
23. Flare up, but passes quickly.
24. Strive towards a goal.
25. Shy.
26. Immovable.
27. Hard.
28. Philanthropic.
29. Capable of adaptation.
30. Awkward.
31. Stiff.
32. Realistic Attitude.
33. Caustic.
34. Think only of what is possible.
35. Pleasure in enjoying things.
36. Very religious.
37. Sarcastic.
38. Like to eat and drink.
39. Cynical.
40. Independent.

41. Honest and conscientious.
42. Have no needs.
43. Busybody.
44. Sensitive.
45. Aristocratic.
46. Active.
47. Enterprising.
48. Stoical, at the same time tenderhearted.
49. Cautious.
50. A strong moralist.
51. Ready wit.
52. Active in social life.
53. Have no scruples.
54. Vivacious.
55. Strong principles.
56. Unpretentious.
57. Unpretentious.
58. Quick.
59. Chronic feeling of insufficiency.
60. Not formally polite.
61. Conscientious.
62. Changing moods.
63. Pedantic.
64. Thoughtful.
65. Idealize.
66. Carefree.
67. One time thrifty then generous.
68. Enthusiastic.
69. Not reserved.
70. Take everything seriously.
71. Practical decisions.
72. Not humorous.
73. Like children.
74. Pensive.
75. Warm piety.
76. Meditative.
77. Not rigidly dogmatic.
78. Easily depressed.
79. Do not have strong principles.
80. Impulsive.
81. Ready to make concessions.
82. Irritable.
83. Like nature and social life.
84. Violent temper.
85. Like realistic books.
86. In general secluded.
87. Like descriptions of nature.
88. Monosyllabic.
89. Quiet.
90. Misanthropic.
91. Indifferent towards danger.
92. Timid.
93. Unsociable, or particular about friends.

And now comes the final step. If the biotonus is not yet clear, it must be ascertained by using the following questions:

1. What method is the best when you learn? Steady work, putting aside for some time, and then concentrating? Do you have to warm up to your work?
2. Do you ever walk up and down in your room or gesticulate?
3. What did you intend to do when you started out? Have you ever changed your course of action?
4. Can you concentrate when you are interested in something? Or does the slightest noise disturb you? Have you tried learning to concentrate?
5. Can you go from work to your recreation and from recreation to work? Or do you feel the need of rest between the two activities? Do you feel that after a pleasurable experience you cannot settle down to work again?
6. Are you ever absent-minded?
7. Are you persistent in your work or what you go after, or do you take things pretty much as they come?
8. Can you do something better when you are highly enthusiastic, or under the influence of emotion, or do you notice little difference?
9. When do you work best, morning, afternoon, or evening?
10. What is your feeling when you arise in the morning, can you begin work immediately, or do you have to wait a little?
11. Are short periods of study better than long?
12. Are you sensitive about little things? Do you become angry when something is not in order?
13. Do you ever become real angry? If you never become angry, do you repress your feelings, or do you never have the feeling of anger?
14. Do people bother you in any particular way?
15. Do you find that you ever exaggerate?
16. Are you usually satisfied with things, or do you often find that you disagree radically?
17. Would you say that you are suspicious?
18. Have you ever idealized anything or anyone? When?
19. Do you take any interest in politics? Conservative or radical?
20. Do you like to take a middle course, or would you rather go to one extreme or the other? Do you actually take the middle course, or do you find that you have gone to extremes?
21. Do you have decided opinions about things?
22. Do you find that you ever have to change your opinions?
23. Do you like order?
24. Do you ever feel depressed? Often? Do these depressions occur at regular intervals? Do you know why you are depressed?
25. Do you think you have a lot of patience?
26. Are you easily reconciled when you are angry with some one?
27. Do you ever have an intense desire to be free?
28. What do you think about grades, degrees, etc?
29. Are you generally friendly, or are you particular with whom you come in contact?
30. Do you take things seriously? Do you find that you often cannot enter into a bantering conversation?

31. Were you ever bashful? Have you ever overcome this?
32. Does the weather ever effect you?
33. Do you enjoy eating?
34. Do you ever take long walks?
35. Do you like sports?
36. Do you like city or country life?
37. Are you musical? (Question)
38. Plastic arts?
39. Do you like animals?
40. Do you collect anything, or have you in the past?
41. Do you like to hunt or fish?
42. Have you ever had any exciting experiences in your life? Do you like excitement?
43. Mathematics?
44. Realia (machinery, technical things, etc)
45. Chess or games of concentration? Or do you like activity better?
46. Good memory?
47. Books? Special fields?
48. Are you a good observer?
49. Are you methodical?
50. Are you practical?
51. Are you a good speaker?
52. Do you ever laugh heartily?

These questions were taken from the questionnaire used by Heymans and Wiersma in their excellent investigation made in Holland. These questions will give an alert examiner a pretty good cross-section of the subject's life, which will help him in deciding questions about activity or biotonus. It is how the subject answers, rather than what he answers. The examiner must be ready at any moment to use other questions, as the need arises, in order to ascertain some point. The questions must also be varied for different activities. In the above form they can be given to university students, but if they are given to children or uneducated adults, they must be made to fit the life of the subject. Since it is merely the biotonus and the activity that are sought, this can be varied at will.

The principal part of the work by Heymans and Wiersma is the classification. To go through the history of the classification would be to go through the works of some of the greatest men for the last 2500 years. Hippocrates (31) set

up the four classical types: Sanguine, choleric, melancholic, and phlegmatic. Kant also used these types in his Anthropology. Wundt (93) used them in the following scheme p.638:

Quick	strong	weak
slow	choleric	sanguine
	melancholic	phlegmatic

This was on the basis of activity or drives and feelings. He was the first to note the slowness of the two second types, and laid down the first classification on the basis of introversion-extraversion, since the two slow types tend to live more in the future and therefore tend more towards abstract thinking and inner activity.

Ribot (70) established a classification using emotion and activity. On this basis the classical type would be:

sanguine	nEA
choleric	EA
melancholic	EnA
phlegmatic	nEA

E - emotion  
 nE - non-emotional  
 A - activity.  
 nA - non-active

He added the amorphous type nEnA. This type is neither emotional nor active, and the individuals are shoved through life. It was not until the idea of introversion-extraversion became more firmly established that these types took on new meaning. The two non-emotional types, sanguine and phlegmatic, are in respect to these factors the same, but in respect to their lives they are quite different. The sanguine would now be said to be extravert, the phlegmatic introvert. The new classification based on primary and secondary functions was made by Heymans. This is as follows:

Primary function (p)	Secondary function (S)
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nEAP  
sanguine

nEAS  
phlegmatic

EAP  
choleric

EAS  
impassioned

EnAP  
sensitive

EnAS  
melancholic

nEnAP  
amorphous

nEnAS  
apathetic

An example of the non-emotional active with primary function is Will Rogers. He is easy-going, shows activity, is an extravert, has pyknic build, and five-point face. The same type but with the secondary function, the phlegmatic, is represented by practically all philosophers and mathematicians. That this type falls into the asthenic type of the Kretschmer classification has been known for some time. The choleric type is best represented by Theodore Roosevelt, and the impassioned by Woodrow Wilson. The next two types, the emotional nonactive, are represented by the artists. They tend to become inactive, but their emotional component makes them sensitive. The Artists with the primary function are more the stylists and fantastic writers. The last two types are individuals who show neither emotion nor activity. They do not often get to the universities, and when they do, they have to be shoved along. The two non<sup>\*</sup>active types with the emotional component represent the most difficult problem in education, and American education with its standardization is slowly making life impossible for these types. The attempt is made to increase their active component, which merely results in a catastrophe if he does it. His normal expression can only be made through the emotional component, and this is effectually stopped by American education. European education takes just

these two types into consideration, and they succeed much better in Europe than in America. When it is realized that these two types give the beautiful things in life, and may give some of the most original ideas, the need of giving them more opportunity in America is pressing. When it is also seen that 50% of the classification is made up of non-active individuals, and these will be the non-pro<sup>ductive</sup> in the sense of money, it is seen that the problems of life can be met with more insight if it is realized that 50% of the people must be taken care of from the economic standpoint.

Thus the body form, the posture, the tone of the temperament, the effect of distraction, the activity and the function of the individual is ascertained, and the individual is classified in one of the eight groups. This gives an insight into the form of the personality that could hardly be obtained in any other way. It is comparatively simple, since very definite things are sought. Now some of the advantages of this technique can be discussed.

The technique has many advantages over existing personality tests. The usual personality tests now in use are based on answers given by the subject to certain leading questions. There is seldom an ulterior motive back of the questions, and the subject can very easily falsify the report. This is true of all questionnaires. Again, the usual personality tests are based on the contents of personality, and not simply on the form. The contents are very important, but a questionnaire is one of the most imperfect instruments for ascertaining so complex a matter as personality. Sometimes years of contact with a person will give little information as to the contents of his personality. Such things as motivation, circumstances, etc. will so alter the conditions that an individual may surprise even his closest

friends. Therefore, any personality test that attempts to get at the contents of personality will fail.

The test can give information without knowing the past life of the individual, or anything else the individual may conceal for some reason or other. Occupation or other contents are not necessary. The function is ascertained by the Rorschach test which is unknown to the majority of people, and even an attempt to falsify could not be successful, since the subject does not know what to falsify. The only thing a subject can do is to fail to cooperate. No personal questions, i.e. prying questions, are asked which the subject may not like to answer.

The same is true of the Heymans-Wiersma questions. The subject, who may have answered many personality questionnaires, has already built up his mental set, but this plays no role in this technique, since it is not what he answers but how he answers.

One great advantage is that the technique and classification are applicable to all races, whether living now or in the past, and gives the form of the personality. From this form the contents are determined. A type may become a preacher, doctor, lawyer, or anything else, if the form is known, the manner of his life, even the nature of his activities, can be understood with great certainty. The classification can be applied to great men now dead, and can give a further significance to certain of the types. Since mankind has the same form, structure, and psychological pattern, the test is applicable to all races. The mental tests and many of the personality tests require a definite environment and language ability. The technique is applicable in all environments and conditions, since the factors

sought are fundamental factors of human nature and are not influenced by the contents of personality or character.

The body build also furnishes a basis for the classification, as the literature is enormous on the Kretschmer types. The correlation between body build and personality is generally high, and this relationship can be studied on men now dead from descriptions or pictures.

One of the greatest advantages of the classification is the fact that it has existed throughout the centuries of history. The old Greeks originated the classification, and it has gone through the hands of very many great men since. This classification is so well known, and has maintained itself so long, that there can be little doubt that it is based on fundamental truths. The chief deficiency of prevailing personality types is that they do not have such a fundamental basis, and the final classification of their results has little significance for personality as a whole. It may hold good for certain groups, and for certain races or periods of time, but the general nature of the classification is not developed at all. The present classification gives this significance, since it can be applied to men throughout the ages, and the significance of each of the eight types can be compared in all races, at all times, and in all conditions.

A further advantage, and one of the most important, is that it has come for the most part from abnormal material i.e. insanity. It therefore includes the insane. An increase in each of the three components tested has significance, increase in the primary function gives all the degrees from hypomanic to manic-depressive insanity, and an increase of the secondary

function gives all the degrees between the schizoid to schizophrenia. The prevailing personality tests can hardly be applied to the insane in the same way, as there is a failure to use fundamental criteria. The classification assumes a relation between insanity and the normal personality, and the continuity between the two can take place without any violence to the classification. The technique can also furnish indications of abnormalities, especially the handwriting test.

In general, the classification takes into consideration more features than the prevailing tests. Body build, biotonus, tone of temperament, activity, handwriting, concentration and distraction, function of personality, and the possible abnormal features. The classification is of long standing and is constantly increasing in significance, as is shown by the enormous literature springing up around the various features of the material used.

## V. Discussion of Results.

The test was given to 25 individuals, and the data was compiled from the results. The subjects were taken from a clinic class in education, from other professions such as teaching, and there were students, city people, and others who were interested in the test.

To give a complete analysis of each of the 25 subjects used would give a total of 250 pages, which is impractical. A few cases will be discussed briefly, in order to illustrate the methods used, and general conclusions from all the cases will be given..

The handwriting test presents many possibilities for an interpretation, but lack of time has prevented any detailed analysis of these possibilities. Only the most striking features will be discussed. There were 11 introverts and 14 extraverts according to the final classification. One of the introverts represents the so-called coarted type, and one other subject belongs to the crossed type. The extraverts were usually clear in their types, but there was more difficulty with the introverts, as could be expected from the fact that they represents a more highly differentiated condition. The most significant feature of the handwriting test is the size of the handwriting. Size was measured by the total length of a line. The introverts according to the classification ranged from 18.2 cm. to 28.3 cm. Three subjects gave 28.3 cm., 26.14 cm., and 26.9 cm. respectively. If these are excluded the range would be from 18.2 cm. to 24.4 cm. One subject with 26.9 cm. is the coarted subject, which represents an undifferentiated stage between the types, and the other subject with 26.4 cm. was

approaching the ambiequal type which represents a fairly equal balance between the two highly differentiated processes. Thus it can be said that, in the introvert group with one exception, the subjects with a pronounced introvert result wrote between 18.2 cm. and 24.4 cm.

The extravert group wrote between 23 cm. and 36.4 cm. If we place as the mid-line 24.5 cm., all extraverts except one are above, and all introverts (distinct types) with the exception of one are below. Of interest is that the crossed form who gave a distinct introvert reaction fell well within the introvert group in the size of handwriting. The general size is shown by the amount of space covered. Typical extraverts covered three pages of typewriting paper for their test, while the introverts hardly used one page.

There might be a temptation to add and multiply all the possibilities of the handwriting test, but this method is away from individual differences and cannot be used. As was just shown, the introvert range was found to be 18.2 cm. to 28.3 cm. The subject with the 28.2 cm. is above any other introvert, and *the* subject's other reactions were typically introvert, yet the handwriting was not typical. This seems to correlate with a certain instability in subject's nature, so that the test did not give the typical introvert reaction, but showed an unstable element. This was the only exception that could not be absolutely accounted for. As was said before, the handwriting test is not some fixed reaction, and there is not a one-to-one correlation between a feature of the handwriting and the personality traits but there is a very distinct tendency of the

one type to expand, and of the other type to contract. This is symptomatic in the sense of diagnosing. Further than being a symptom it cannot go.

The small number of cases prevents any sweeping generalities, but certain tendencies can be pointed out, since they are in line with more extensive work in the field. Following are the types with time and expansion size on the second expansion test, of counting as fast as possible. First column is time in seconds, second is size.

EAS		EAP		nEAP	
22.0"	24.1 cm.	17.2	24.5	22.2	29.8
18.0	23.4	17.1	24.6	18.0	29.9
24.6	22.1	17.6	28.3	30.4	27.6
17.8	21.1	17.5	32.9	28.4	27.2
19.4	21.0	20.0	30.2	25.4	25.5
16.9	21.6	17.5	35.2	26.6	24.5
19.3	22.9	24.2	27.9	22.2	26.1
18.6	23.2	19.6	23.5	18.9	25.3
18.4	24.1	24.8	28.6	18.7	23.0
16.4	21.0	31.2	34.2	19.2	22.1
20.0	28.3			23.4	36.4
23.4	36.5			22.8	46.6
20.3	18.2			30.2	29.9
16.0	16.4			23.9	30.4
nEAS		nEnAS			
24.9.	26.4	25.7	22.4		
21.8	26.5	19.7	22.1		

The first line of each pair gives the normal time and size, the second line gives the time and size with distraction. It can be seen that the general tendency of the emotional extravert group is to expand, while that of the introvert is to contract. The non-emotional primary group shows little fluctuation and a certain tendency to contract. This is also in

line with the work already done on these types. These are not hard and fast features, but they represent tendencies that are more or less pronounced. An exception is to be expected, but the tendency helps in making decisions in difficult cases. The rule can be set up that the emotional types present a more erratic tendency than the non-emotional. The introverts write smaller and tend to contract under distraction, a tendency that increases with the emotional factor. Where these rules do not hold, other factors enter in that account for the fluctuations.

It has been stated by van der Horst and others that the extraverts are more bothered by distraction than the introverts. This is shown in the present test. Following are the time and size differences between normal and the attempt to count as fast as possible but to write at the normal speed. The figures in the first columns are the time in seconds, in the second the size. The first rows of each pair are the normal time and size, the second the time and size with distraction.

EAS		EAP		nEAP		nEAS		nEnAS	
22.0	24.1	17.2	24.5	22.2	29.8	24.9	26.4	25.7	22.4
21.2	24.2	18.9	24.1	22.3	29.6	23.0	26.6	24.5	22.0
<u>24.8</u>		<u>1.7</u>	<u>.4</u>	<u>.1</u>	<u>.2</u>	<u>1.9</u>	<u>.8</u>	<u>1.2</u>	<u>.4</u>
24.6	22.1	17.6	28.3	30.4	27.6				
19.8	21.3	20.2	31.5	28.4	27.2				
<u>4.8</u>	<u>.8</u>	<u>2.6</u>	<u>3.2</u>	<u>2.0</u>	<u>.4</u>				
19.4	21.0	20.0	32.2	22.2	26.1				
18.1	21.0	22.1	35.0	21.7	25.2				
<u>1.3</u>	<u>0.0</u>	<u>2.1</u>	<u>4.8</u>	<u>.5</u>	<u>.9</u>				
19.3	22.9	24.2	27.9	18.7	23.0				
18.6	23.2	23.4	22.7	20.0	22.3				
<u>17</u>	<u>13</u>	<u>.8</u>	<u>5.2</u>	<u>1.3</u>	<u>.7</u>				
18.4	24.1	24.8	28.6	23.4	36.4				
17.9	23.8	28.4	32.9	25.4	42.1				
<u>.5</u>	<u>.3</u>	<u>3.6</u>	<u>4.3</u>	<u>2.0</u>	<u>5.7</u>				
		(2.1)	(3.5)						

20.0	28.3
25.5	29.1
<u>515</u>	<u>.8</u>

30.2	29.9
24.8	31.0
<u>5.4</u>	<u>1.1</u>
(1.8)	(1.5)

20.3	18.2
18.6	15.4
<u>1.7</u>	<u>2.8</u>
(2.1)	(.7)

Average deviations for all types lower figures.

It must be remembered that these reactions are more individual and there are strong indications that the inability to return to normal is associated with an unstable element in the make-up. The size of the writing is again significant, while the time varies a good deal. The average difference of the two emotional groups in time is 2.1". For the non-emotional it is 1.8" for the extravert and 1.9" for the introvert, with 1.2" for the nEnAs. Size is .72 cm. for the EAS, 3.5cm. for the EAP, 1.5 cm. for the nEAP, .8 cm. for the nEAS, and .4 cm for the nEnAs. This shows that distraction produces a very definite variation in the size of the extravert group, being least in the non-emotional type as would be expected. All introvert types are below the extraverts in this variation, although single persons vary considerably. There is less variation in time in all groups, being largest in the emotional active extravert type.

Now some examples can be given of the method.

#### No. 1

Subject presents a perfect pyknic type, all lines tend to be round, large abdomen, round face, flat profile.

The biotonus is strong. Subject walks with vigor, and sitting shows the same vigor. All movements show quick vigor.

The tone tends towards seriousness, and the rapport is excellent.

The Rorschach test gave the following results:

1. pelvic bone some abnormality (spots)	WF DF
2. Vertebra cut with blood stains some obstruction (small line)	WFC DF
3. pelvic bone	WF
4. abnormality	WF
5. bat flying	WF
6. X-ray picture	WF
7. general outline of object	WF
8. colors enumerated bear	DC DF
9. colors enumerated	DC
10. pretty thing, colors	DC

Answers	13	
Whole (W)	7	
Detail (D)	6	ratio 0:5 extratensive (but the enumer-
Form-color (FC) 1		ation of colors makes
Color (C) 3		this even higher).

The handwriting is large filling two pages. The size is 28.6 cm. which is 4.1 cm. above the mid-line, thus subject is well within the extravert group. Expansion in third test reached 34.2 cm. the attempt to go back to normal resulted in an increase of 4.3 cm. which is well within the extravert group with strong emotion.

Questions merely brought out the strong biotonus. Subject earlier had violent temper, but has learned to control it. Subject works in spurts.

We have then a pyknic type, strong biotonus, a distinct extratensive reaction, and activity is very evident from questions. The type is distinct: emotional active with primary function. EAP. No. 2:

Subject is a pure pyknic type, tall, all measurements

round, round face and body, tendency to baldness although still young.

Subject walks slowly and rather heavily. His movements are also slow. He sits heavily, making himself more or less comfortable, he meets the situation with a good grace, and the rapport is excellent.

The tone is depressed.

The Rorschach test is as follows:

- |                                  |      |                 |
|----------------------------------|------|-----------------|
| 1. pelvic bone                   | WF   |                 |
| face of goat                     | WFA  |                 |
| face of fish                     | WFA  |                 |
| 2. flower                        | WCF  |                 |
| flame of lamp                    | WCF  |                 |
| back of cat's head               | WFA  |                 |
| Japanese lantern                 | WFC  |                 |
| fur pelt                         | WFA  |                 |
| 3. red tie                       | DF   |                 |
| decoration                       | WF   |                 |
| throat of bird                   | DCFA |                 |
| 4. hawk                          | WFA  |                 |
| ray                              | WFA  |                 |
| pin                              | WF   |                 |
| lodge insignia                   | WF   |                 |
| 5. moth                          | WFA  |                 |
| butterfly                        | WFA  |                 |
| bat                              | WFA  |                 |
| mountain range                   | DF   |                 |
| 6. pelt of animal                | WFA  |                 |
| blotch of paint spilt on floor   | WM   |                 |
| 7. two rabbits in fight          | WMA  |                 |
| tonsils                          | DF   | (space picture) |
| open mouth                       | WF   | " "             |
| mouth of cave                    | WF   | " "             |
| 8. flower                        | WCF  |                 |
| big fat lady                     | WF   |                 |
| bones of body                    | WF   |                 |
| 9. rabbit eating petal of flower | DFA  |                 |
| scarecrow (upside down)          | WFC  |                 |
| 10. bouquet of flowers           | WFC  |                 |
| bird                             | DFC  |                 |
| false face                       | DFC  |                 |

Answers 33

Whole (W) 26 (77%)  
 Detail (D) 7 (23%)  
 Animal (A) 13 (39%)  
 Space  $\frac{3}{8}$   
 Movement (M) 2  
 Form-color (FC) 4  
 Color-form (CF) 5

ratio 2:7 extratensive

Handwriting showed medium size with slight expansion. It approximated more the non-emotional group in all respects.

Questions showed that subject was easy-going, and the extremely slow manner of answering brought this out more than ever. This goes very well with the depressed tendency of the pyknic type. The biotonus is very weak.

Subject is pyknic type, weak biotonus, active, extra-tensive and depressed. The three space interpretations indicate either abstinacy or a neurotic tendency. The type is the depressed form of the non-emotional active with primary function NEAP.

### No.3

Subject is athletic type. Flat profile, hypoplastic chin.

Subject walks quickly, sits attentively and shows strong biotonus.

Rapport is good, but there is a slight indication of negativism, shown by subject asking how many more pictures there were in the Rorschach test.

The tone is serious.

The Rorschach test is as follows:

1. pelvic bone	WF
head of animal	WF
Jack-o-lantern	WF
valley with two hills	DF
gargole	WF
old witch	WM
grate in furnace	WF

2. comic valentine	WCF
lake with bridge	DF
dog's head	DF
chicken's head	DF
church scene	DF
cupid	DF
pelvic bone	WF
3. bones	DF
two men facing each other	DM
lake	DF
club	DF
4. misshapen man	WM
figure in dentist's chair	WM
side of mountain stream going up	WM
5. woman with flowing gown	WF
bat	WF
6. head of fish	WF
cat's head	WF
bone	DF
old piece of building	DF
7. two faces with night caps	DF
ancient wall	WF
ice with vapor going up	WM
8. bony structure	WF
shorts	DF
machine pump	DF
two animals attached	DM
cinders	DCF
9. pipette	DF
hat	WCF
woman bent back with flowing hair	DM
urn with handles	DF
Dante's inferno with flames	DM
child's drawing	WCF
10. prints on china embroidery	DFC
parts of butterflies	DFC
two butterflies	DFC
lever	DF
jacket	DCF
sill drawing	WF

answers	47
Whole	21 (44%)
Detail	26 (56%)
Movement	9

Form-color                    2  
 Color-form                    6                    ratio 9:7 introversive

The handwriting is very small and shows a gradual contraction from beginning to end. It is a distinct introvert handwriting.

The questionnaire merely brought out the biotonus and the activity.

The subject is athletic, has strong biotonus and the state of negativism is present, is active, has strong introversive tendency. Noticeable is the large number of detail answers (56%) which exceed the whole answers (44%). This points to a lack of ability for abstract thinking, and a tendency to go too much into detail. This point was verified beyond any doubt. Subject is therefore athletic emotional active with secondary function EAS.

There were 14 women and 11 men tested. Among the women were 7 introverts and 7 extraverts. Among the men 4 introverts and 7 extraverts. This shows a slight tendency towards extraversion, which would be natural since it is the more undifferentiated type. But the low number of subjects prevents any generalization in this direction.

There are no great differences between the results of men and women. The handwriting of the women is less differentiated, but this criterion is not absolutely certain.

Most noticeable was the large number of responses given by the introverts in the Rorschach test. This difference is almost of diagnostic value. The subject in giving answers was neither encouraged nor discouraged. If subject could give none at all, there was no attempt made to force or encourage answer.

Some of the introverts ran away with the number of responses, and the total time of the test was increased. The extraverts gave very matter-of-fact responses, and usually few in number.

Following are the types and the no. of responses.

EAS	EAP
17	16
62	27
53	16
34	29
43	13
47	nEAP
46	33
	24
nEAS	25
42	15
	27
EnAS	22
42	15
	12
EnAS	16
48	

One very important fact has been noticed in this work and in other work in connection with personality. Existing tests, principally for introversion-extraversion are based on social attitude. People who tend to become secluded, who withdraw from society and do not like people very much, who are<sup>3</sup> little excentric are classified as introverts in the majority of tests. Since the present technique depends upon the degree of differentiation of the perceptual processes, the degree of introversion-extraversion can be ascertained without any reference to social attitude.

Now if the present classification is referred to, it will be noticed that in the extravert group there is a type called sanguine, it is nEAP. But investigators have forgotten one very important fact, and this fact was brought home rather forcefully in the present work. That is, manic-depressive

insanity is the extreme pole of the extravert reaction type, therefore there is the possibility of a cycle between the exalted and depressed states, which may take one form for a number of years, or may change within a short time. Thus, it is possible for a perfectly normal individual of this type to be in a constantly depressed state, in which his activity is slowed up, in which he withdraws more or less from active life, and in all ways shows in a mild form the tendency of the depressed state of manic-depressive insanity. This tendency is brought out very clearly in the first stage of Beers' (5) sickness. The individuals tested by this technique who have been distinct extraverts but have had this depressed tone have not only classified themselves as introverts, but many of them would be classified without a moment's hesitation by laymen the same way. But with this technique, body build, reaction type, handwriting, and all other factors pointed without any doubt to the extravert type, yet the depressed state made them more introvert in the sense of antisocial than some of the normal introverts themselves.

On the other hand, the introverts of the active emotional type EAS show a distinct social tendency, and with their increased activity and biotonus, they are leaders and good fellows to a high degree. These would be classified by inexperienced observers as extraverts. Not all would show this tendency, but enough do show it to make a classification on the basis of social attitude alone a most inaccurate method.

It is not maintained that the social introvert EAS is more

extravert than the antisocial extravert NEAP, but to the laymen, and especially to people who have to rate on the basis of questionnaires, this method presents a possibility of error that is far from being slight. My own experience has made a classification on social attitude almost impossible, since activity and emotionality play a greater role in the individual's life than introversion or extraversion. It must be concluded that a social basis for introversion-extraversion will either need elaborate defense, or it must be abandoned as a criterion for these two factors in personality.

## VI. Organismic Psychology and Types.

It is highly significant that, with the development of types, the present growth of Gestalt or organismic psychology took place. As was pointed out in the introduction, this movement has taken place in practically all fields of science to-day. At the close of this work, it may be of interest to point out more definitely some of the relationships between types and organismic psychology.

There are several organismic laws that are especially prominent in this work, and a short discussion can be made to point them out. Two laws have been used more than the others, these are the law of derived properties and the law that states that the whole is more than the sum of its parts.

The law of derived properties is one of the most important in the field of personality. The reactions of an individual that have gone under various names, such as emotion, activity, intelligence, drive, will, etc. do not give any insight into the whole when they are taken alone. This means that they derive their properties from the whole, which is the pattern of the personality. A reaction, therefore, to a test has no significance in itself, as prevailing methods are wont to assume, but the reaction as a part of one pattern may have one meaning, and as a part of another pattern may have just the opposite meaning. The reaction alone cannot be taken as final, but it takes on its significance only when in a total pattern. This is one of the most important laws of diagnosis. A symptom alone means nothing, but one time a symptom in a certain pattern will indicate one disease, and in another pattern will indicate another disease, so that the symptom alone has no significance, and it is only

when the total pattern is known that the part has meaning; in other words, it derives its meaning from the whole of which it is a part. When it is part of another whole, it may have an entirely different meaning. It can be seen that this law is of vital importance in diagnosing personality, and it has been used to a high degree in this work.

The whole is more than the sum of its parts. When personality is broken up into certain elements, and when these elements are tested for by means of some test, it cannot be concluded that they will give the personality as a whole if they are found, since there is always something more than merely a combination. In personality work this has been done too much. The old faculty psychology is the high point of the atomistic tendency, and there are still traces of this way of thinking up to the present day. The various elements of personality are isolated, and it is concluded that if a few are found, they can be united to form a personality without the addition of anything else. This is the case now in personnel work and vocational guidance. Professions are analyzed, and these elements furnish the basis of a test. Now if an individual has these elements, it is concluded that he will be good for this profession. According to this, the whole is not more than the sum of its parts, which is in conflict with all scientific proof.

Other factors of organismic psychology enter in. The types are dynamic and not static, they are not innate, but develop under the influence of environment and constant stimulation. If this stimulation is stopped, the personality patterns cease to exist. If there is no stimulation from the first, they do not develop at all, as has been shown in the cases where

individuals have not had the stimulation of environment in a social order. Each type possesses at birth a certain potential power of development, and even though stimulation may be greater than is required to develop the type, it will not go beyond its potential power of growth. Thus, there has been only one Shakespeare, or Beethoven, etc. The types are differentiated from an undifferentiated field, and the fundamental basis of this technique is to test this degree of differentiation.

The law of configuration is also used. The types are patterns or configurations. Their development is determined by the form of pattern. Thus, the form is more important than the contents, since it determines the contents, not the other way around. The law of field genesis is also shown here. Form is primary, what later develops can only be understood in the light of form. These types are primary, they are form, and all other human activities can still be understood from the original form. All contents are excluded, and merely the form of personality is studied.

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