

A Typological Approach to the Study of Human Behavior

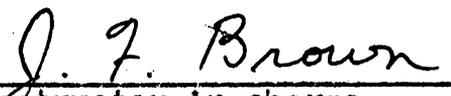
by

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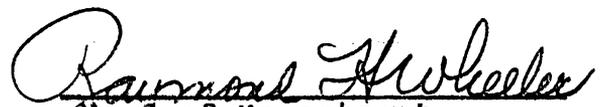
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## I. Introduction.

While the interest in the problems of personality study is not new, there is a decidedly new tendency today to turn to these problems. This is noticeable in all psychological literature. Spearman (204) has even gone so far as to address an open letter to psychologists to unite in an effort to concentrate on personality problems. He points out that there are many 'psychologies' today, a condition that has produced a crisis. Out of the wreckage seems to be coming a tendency to place more emphasis on a study of personality problems.

Because of the long history of failure in personality work, modern thinkers are justifiably sceptical of any new movements and attempts to reduce the complexities of life to more scientific terms. This necessitates something more than a theory or experimental study of the personality, it necessitates a demonstration of why personality work has failed in the past. Only after this is clearly understood can we proceed with future study.

The present study is an attempt to establish personality work on a more scientific basis. It will attempt to go through the history of personality work and to weed out the unessential studies, and will attempt to throw light on what is the most fertile direction in the study of human behavior.

Within recent years there has been more and more work done

in a field called 'characterology'. This is not a new word, actually dating back to Bahnsen in 1867, but its modern form has changed considerably. Books on characterology and periodicals devoted either to characterology or personality work have appeared in great profusion during the last few years. The word 'characterology' is used more frequently in Germany than in other countries, although the same movement is apparent throughout Europe and America. McDougall (148) and others have pointed out some of the different uses of the word 'character' and the arguments for and against its use. It is not the purpose of the present study to go into theoretical considerations of characterology as a separate field, since the desire is to approach the study of human behavior regardless of respective fields.

Characterology is more closely associated with the 'understanding' branch of psychology than with the quantitative schools. It is viewed in the present work as a change of emphasis in methodology. This view has been expressed quite clearly by Seifert (199) in the following quotation:

In characterology we are not dealing with the appearance of a science completely independent of the methods and aims of psychology. It is rather a question of an impulse - and a highly important one - for the restoration of and new orientation in the fundamental attitude within the total field that stands in the service of investigation of the 'inner man'. The essence of man is to be understood in a new way, be known better and more deeply than in the schools of psychology. This is the driving force which stands behind the name 'characterology'.

In reviewing the literature on personality work, one thing

stands out above all others: there has always been a tendency to class individuals, to consider them typical of some group, to call them types. This seems to be one of the first consequences of a study of personality. Whenever the investigator comes face to face with human beings, not only with pathological cases, but also with normal individuals, he first notices individual differences, then he automatically begins to classify these differences for his own convenience. This classification of individual differences and similarities has always taken the form of types. The persistence of such classifications, together with the use of classifications in science in general, seems to point strongly to the fact that the study of personality must use types as a methodological tool, just as the other sciences have done.

Whether there is general agreement about the use of types, the present work assumes that some classification of material is not only necessary, but would make further study in the field impossible were there no classification. The problem then is a problem of types, not of special personality problems. This problem is fundamental to the entire field, and the present writer considers this the key to the entire failure or success in the field of personality work.

It has also been noticed that dichotomies of types have been set up. These have been so persistent in history that they are referred to in this work quite often as the 'eternal dichotomy' of personality types.

The first problem then is the problem of types. We must consider what the type is, how it is related phenomenally to life, what the philosophical implications of types are, what the various opinions about types have been. The second problem concerns the determination of types. Methods must be used to discover types. And lastly, the practicality of types in science must be demonstrated.

The present work is an attempt to meet all these problems. The literature is treated as exhaustively as space and time would permit. Experimental work leading up to the establishment of the technique used in this work for determining types is treated in detail. There is, of course, some repetition of material, but it was decided to err by including too much than too little. The practical uses of types, especially in psychiatry, are discussed, and the definition of a new classification of types is given.

It is hoped that this work will clear up many of the difficulties connected with types and an understanding of modern personality work. It is an extremely difficult field, and no one attempt can be entirely successful. As is the case with all research, more problems are uncovered than solved, but this is the justification of such an attempt.

## II. The Problem of Types

### 1. The Problem.

The problem of types has been a persistent one throughout the history of man, and the present revival of types with the growing literature now found throughout the world is only another indication of the importance of this problem to man. Regardless of what position one takes to the problem, the fact remains that the human mind, in order even to begin to approach the complexities of behavior, must arrange the multitude of data in orderly divisions, not only for the convenience of the investigator himself, but also for others who are studying the same things. The endless controversies about whether classes and types exist are pseudo-problems, usually arising from an incomplete knowledge of the literature. Science must use classifications, and any system of thought that tries to proceed without classifications is doomed to the accumulation of unusable data. We can assume almost without argument that any study of human behavior must proceed from some classification. The problem is not whether such a classification is necessary, that is self-evident, but what classification is acceptable.

Pipes in a house are divided into gas pipes, hot and cold water pipes, electrical conductors, and so on. Now some one may come along and argue that there are not 'hot' water pipes as opposed to 'cold' water pipes, since the 'hot' water pipes often conduct 'cold' water. They may even go so far as to argue that there is no such thing as a dichotomy of 'hot' and

'cold'. Since there is a gradual range from hot to cold through a middle group of lukewarm, it is unscientific to speak of 'hot' and 'cold' at all, and to relegate the designation 'hot water pipe' to an unscientific and inaccurate mode of thought. Now if the attempt were made to put these considerations into practice, the hot and cold labels would be taken off, and soon no one would know whether gas, hot, or cold water, or something else might emanate from the 'scientifically' correct pipes. There is no doubt that there would be an immediate return to the inaccurate dichotomy of hot and cold water pipes, and to the equally unscientific distinction between gas and water pipes.

Let us consider another example. Some 4000 students attend a university. They are classified into freshman, sophomore, junior, and senior classes. We might enter into a controversy whether there is such a thing as a 'freshman'. We might set up elaborate psychological experiments to determine quantitatively the amount of 'freshmanism' in each individual (witness some of the attempts to reduce extraversion-introversion to quantitative measures), and we should find, as all who have used this methodology have found, that there is no correlation with anything. We then deny boldly that such a thing as 'freshmanism' exists. But what would the administration do without the classification? Would they be content to be scientifically correct? The answer for practical reasons is quite obvious.

These examples touch on some of the most fundamental problems facing the typologist and characterologist. Human behavior in all its complexity prevents study. Arbitrary classes

and divisions are set up. Then learned men come and proclaim that these classifications do not exist. It is self-evident that they do not exist. But it is also self-evident that once such a classification is set up, it would be futile to conduct such arguments. If it is practical to have 'hot' and 'cold' water, even though there would be general disagreement in the middle group between hot and cold as to whether it was hot or cold, even though there was a high degree of inaccuracy in the determination of the two, we can state that it is worth classifying in order to make the controversy and study possible. A study of water might reach a point where the terms 'hot' and 'cold' would hinder rather than aid knowledge, yet they must be used for practical purposes. Just as an administration must decide on some 'unknown' whether he is a freshman or belongs to some other class, personality workers must classify their data on the basis of types.

Good and bad, high and low, hard and soft, and so on through the multiplicity of dichotomies are all relative, all unscientific in the sense that there is disagreement among people as to what distinguishes them, yet life would be chaotic without them. Can modern science disregard them and attempt to get along without the aid of fictions without becoming chaotic? From its past history a negative answer is all that can be given. The very fact that no absolute units of measurement have been found is enough to force science to use practical means of classifying and studying its material, even though fictions have to be used as a support. The past has proved the efficacy of this method,

and the future of characterology will be dependent on it. Just as the periodic law would be dropped if some other system were devised that would advance knowledge more, just as chemists recognize the fictitious nature of this law, the characterologist will use the 'type' to advance more rapidly in the treatment of human behavior. A classification of some kind is always necessary for progress in science, and until some science can progress without such a classification, it will continue to be necessary. If such a classification aids characterology, if consistent results can be obtained, if the comparison of data is facilitated, the use of types will have more than justified itself.

This view is not in violation of the field theory or of any psychological theory for that matter, since it is stressing a general postulate of scientific methodology. Only when such a classification is viewed as real will there be an opening for serious criticism. Types are the labels of certain personality structures by which we can arrange and study people in a practical way. The theories back of this study will not be influenced in any way. Lewin has considered this problem and views such things as 'constructs'. We can also say with Lewin that types are constructs, even within a dynamic field.

An idea that has made the study of types in America very difficult is that shared by many psychologists today. This idea is that the reactions of a type must necessarily be the same in all members of that type. If it is stated that a certain type has a slow reaction time in a certain situation, it

is assumed that all members of this type must show approximately the same time. This idea rests on a static view of the personality. There is no such fixed structure in the personality, there is constant change within the total structure, and while some parts may not change as rapidly as others, the total pattern must be considered in each case. For instance, one type is said to be idealistic, to place little value on money and material things. This type tends to concentrate its energy on one thing and to carry this to an extreme. But occasionally this type will turn to the acquisition of money, and will carry this to an extreme by amassing huge sums. This is in violation of the general tendency of the type to place little value on money, yet it is in complete agreement with another trait of the type to carry things to an extreme, to make a philosophy out of anything that is done. A purely objective consideration of the behavior of such a money-maker might lead one to classify him as the opposite type. But a closer examination of the total personality pattern will show that this individual is not identical with the money-loving of the other. There is a narrowed field of activity, there is a philosophical background which systematizes the money-making for this type. In short, we find that the individual is behaving phenomenally as one type, but is still structurally the other.

A distinction between types based solely on the phenomenal behavior of an individual at any one moment will be inaccurate. Only when the structure is examined apart from this

phenomenal activity, when the investigator is not blinded by appearances, can there be consistency in studying the personality. Some of the arguments against types have been based on just this misconception. It is pointed out that an individual may be extraverted at one time, introverted at another time, therefore there can be no types, since each situation produces its own type of reaction. If this were true, there would be no difference between people in their reactions to the same situation. It would be impossible to explain why one individual goes into a state of mania, the other into a state of catatonia when there is blockage of some kind in their lives. There must be something in the structure of these two individuals that determines which way the individual goes.

A very excellent example of such a situation is to be found in psychiatry. Phenomenally two patients will be brought into the hospital showing a high degree of excitement. If the psychiatrist should simply diagnose the condition in both cases as manic-depressive psychosis manic phase, he would soon be discharged for ignorance of certain differences which he overlooked. He will notice that the body build of the two people is different, the one tends towards a fuller body build, the other shows more elongation. Then there are certain differences in the excitement, the one shows a flight of ideas, the other is incoherent; further, the one shows a certain playfulness, the other shows greater tension and especially grimaces. We see that the trained observer would not be fooled by the phenomenal appearance of simple excitement, but would

look for differences in the formal aspects of this behavior, and would thus arrive at two different diagnoses.

Perhaps a direct quotation from White (238) will bring this out. (pp.167-168)

The manic stage may be confused with the excitement of dementia praecox. The presence of signs of introversion in this latter disease, however, will usually make the diagnosis, though there are cases that are extremely difficult to differentiate and considerable time must be allowed to elapse before a diagnosis can be made.

The excited and stuporous states of catatonia may be confounded (with manic-depressive psychosis). The excitement of catatonia does not show typical flight - the degree of incoherence is often out of all proportion to the grade of excitement. The stupor of catatonia is often associated with negativism and muscular tension, while the face is either expressionless or perhaps grimacing. In depressive stupor the facial expression often shows the great mental suffering of profound depression.

The whole question of the differentiation of some cases of manic-depressive psychosis from dementia praecox involves the greatest nicety of observation, interpretation, and judgment.

To view the purely phenomenal behavior of an individual at any one time is unscientific and inaccurate. With training in detecting structural differences such gross inaccuracies can be avoided.

McDougall has criticized the use of types on the basis of the above misconception, and his entire treatment is extremely inconsistent. He makes the same distinctions that the typologists make, - in fact, they are very excellent, but when he comes to consider the problem of types, he seems to lose the chief point that the modern typologists are making. Let us consider the following quotation from a recent book (147 pp. 188-191):

The modern attempts to set up a certain limited number of types of personality, two or four or sixteen, or what not, are modeled on the ancient outworn doctrine of temperaments and inevitably involve similar confusions. We shall make no solid progress in this sphere of obscure problems of the affective life before we learn to discriminate in the way here proposed. Under each of the four headings, disposition, temper, temperament, and character, we have to recognize a multiplicity of factors; and, in the concrete total personalities that make up the human race, many factors of these four distinguishable groups are combined in an infinitely various manner. How, then, can we hope to define a small number of distinct types or categories into one or another of which every person may be neatly fitted? The search for such types has no reasonable basis, but flies rather in the face of obvious probabilities; the literary skill and scientific prestige of a Jung, a Kretschmer, or a Spranger, do but give colour and standing to a hopeless quest along mistaken lines.

Is this not what has been claimed by practically every modern typologist? Do they not all, from Stern down to the present, admit that there are variables within the total personality, that the temperaments as used in the past are not now adequate, that to try to pigeonhole people is silly? What then is McDougall criticizing? It is quite evident that he is going back to older typology, and what the more modern treatment of this question has to offer is not criticized.

We can agree heartily with McDougall in his criticisms, but this is not what we are maintaining. He is criticizing the type as though it were existent. What is the difference between our conception of a type and his attempt to group behavior under four headings: disposition, temper, temperament, and character? Is he not doing exactly the same thing that we are?

We are both facing exactly the same problems in the same way. The difference is that for us the type is a formal class-

ificatory concept, not existent in nature, yet based on empirical data.

The question to be answered now is how variables can be treated within a type. Every situation, every change in the environment, changes the reactions of an individual. How is it possible to include such wide differences within the limits of a type? How, for instance, is it possible to include an intelligent and an ignorant man in the same type, how is it possible to include the wide differences in professions, life activities, differences in education, opportunities, accidents, and so on? The cry has gone up that to include Nietzsche, Napoleon, and Roosevelt, with probably a criminal or two thrown in, in one type is to violate the sanctity of science. This is an evaluative criticism, and must necessarily be unscientific. Moral goodness, individual prowess, and so on are evaluative concepts, and must be treated as such by any scientific method.

Now let us consider this question more closely. The various forms of insanity were in a chaotic state until Kraepelin discovered that such widely different syndromes as manic excitement and depression, while phenomenally different, are structurally the same. The grouping of the manic-depressive psychoses into one group was one of the milestones of personality work. Can the critics object that to include such wide differences in behavior under one class is unscientific? Certainly not. Subsequent study has verified more and more this division of the psychoses. The manics and depressives show

very similar structural components. Both are objective, both give similar reactions to the Rorschach test, both show dynamic patterns closely allied to a single type, both show similarities in body build, both tend to recover, and in many other ways they show more similarity to one another than to any other group of psychoses. While they are phenomenally different and phenomenally similar to other psychoses (dementia praecox), structurally they are quite different.

We can now summarize these points. We see that the types as just presented is a class or group of individuals showing similarity in a structural sense, while showing differences in a phenomenal sense. Two individuals may differ widely in respect to their individual lives, yet show similarities in respect to the underlying biological structuralization. There are certain patterns that can be set up which will include a multiplicity of life activities. The patterns are the same, the lives are different.

It is self-evident that if these groups were not based on actual life situations, there could be no groups. The groups are practical means for comparing and studying human behavior, just as the classifications of zoology and botany, but the classifications do not exist in nature. The concept of the mammal is based on empirical data, but is a construct, not a form of nature. The difference between a mouse and a whale is so extreme that one might even be tempted to deny that they could both be included under the same class of mammals. Yet

biologists do not hesitate to do this, simply because they find it more practical when attempting to understand the behavior both of the mouse and the whale. Just as no chemist believes in the absoluteness of the periodic law, it still serves its purpose as a means of grouping the chaotic data obtained from experimental work. The characterologist must view types in this light, and the criticisms of McDougall and others will disappear automatically.

## 2. Individual Typologies and Methods.

From this introduction it is seen that certain very fundamental distinctions are made. Since types have occupied the minds of men for so long, it will be necessary to consider the various schools of thought and to attempt to bring them into general agreement.

When we look over the 'psychologies' of the present day, we find a great profusion of ideas. Running through many of them, especially those dealing with personality, we find that there is an increased emphasis on wholes and relations. They are all opposed to the atomistic movements of the nineteenth century. We find names such as Spranger, Krueger, Jaensch, Katz, Köhler, Lewin, Koffka, Wheeler, Stern, Wertheimer, and others who are all classified as Struktur psychologists. They all stress wholes and relations, they all attempt to get away from the atomistic treatment of either psychology or behavior. They differ, often radically, in their views and methodologies, yet they can be viewed as representing one movement. The antecedents of this movement go back to one man, to Dilthey. The network of schools from Wundt and Brentano down to the present makes a one-line descent impossible. We might speak of them as deviations or detours, as Roback (180)(p.346) speaks of the 'behavioristic detour'. The Gestaltqualitäten school called attention to certain aspects of form, not in the philosophical sense, but purely in the field of perception. This actually represents a detour, since the use of 'form' by the

leading psychologists today goes far beyond the perceptual field.

Thus it is to Dilthey that we must go in our history of present movements. From Dilthey we find a direct line of psychologists down to the present, and since these men are also those who are concerned with personality work, they must be considered with some care. We find Spranger (205) representing the most direct line from Dilthey. Krueger (133) broadened the Struktur concept, and stressed development. This was followed most closely by E. Jaensch (84-94). Finally, the more radical wing is represented by the Gestalt psychologists who differ often quite radically from the original cultural science movement. Their emphasis on wholes and relations often stands in strange contrast to their emphasis on natural scientific methodology. Since Dilthey proceeded from the conflict between cultural science and natural science, this return on the part of the Gestalt psychologists to natural scientific methods can be viewed with some doubt.

#### a. Dilthey.

Now let us turn to Dilthey (32-33) and the cultural science movement which took its origin almost at the same time that Wundt began experimental psychology. Dilthey expressed impatience at the attempt of the natural sciences to explain behavior, even to study it for that matter. The quantitative ideal did not seem to give the desired results, the analytical and atomistic tendencies of scientists at that time prevented rather than aided progress. Dilthey recognized that these men

were missing some very important things in the study of human behavior. They were invariably studying parts of the individual, often with complete disregard for the whole individual, and then attempting to explain behavior by a process of adding these things together. The entire anti-analytical movement thus begins with Dilthey.

The first important concept set up by Dilthey was the concept of 'understanding'. We can never understand an event unless we know the relations. These relations give meaning to events. (cf. Wheeler's Concept of Insight) Atomistic and analytical approaches with emphasis on elements destroy the meaning, the relations. Further, we cannot understand behavior when we abstract parts of the individual, nor can we understand behavior when we abstract the individual from his environment, the cultural whole. The study of history represents the products of the mind, of individual behavior, and without a knowledge of the past history of life, we lose the perspectives and relations without which understanding is impossible. This of course leads to placing value on certain life activities because of their meaning. Meaning, understanding, and value are the fundamental concepts of this first implication of the Cultural Science movement.

The natural sciences hasten to say that these things, especially value, place too much emphasis on subjective factors. They are thus inclined to view the entire movement as unscientific. Even though it may be unscientific in their eyes, they are forced to admit that sociologists, psychiatrists, clinical workers, and other people dealing with personality problems

must go to these 'unscientific' men when they want to understand behavior, rather than to the 'scientific' natural scientists. This controversy can be viewed from either side, but one very glaring fact remains, the wide production of works dealing with personality are for the most part, coming from representatives of this cultural science movement. Even the more natural scientific members of the Struktur school are not giving much in the field of personality, without taking sides in the controversy, we can see that from the state of affairs at the present, it would seem that the cultural scientists are maintaining their point; namely, that the natural scientific approach, even when coated over with the Struktur concept, cannot adequately cope with life problems.

We can quote a passage from Roback (180, p.322):

The principal feature of the Struktur school, whether it approaches the study of perception, after the fashion of the Gestalt group, or dwells on the problem of personality, the pièce de résistance of the movement consists in the emphasis it lays on the complex as a totality. The parts or elements receive their proper attention and evaluation only in the light of the whole. For our present purpose, I think, we need not consider the important difference between the Gestalt theory and the allied Struktur doctrines, which, according to Koffka consists in the separation of mind and body in the latter, while his own school regards personality as a natural phenomenon, not a mental or spiritual fact.

The second fundamental concept of this cultural scientific school is the Struktur concept. This Struktur concerns the mental structure and the relationships of the personality. Krueger (133) extended this concept to include the entire psychic structure. (Klages' (109) distinction between mind and psyche must be kept in mind here.)

The relationship between the total world aspect and the value directions of an individual personality type make up the situation which is studied in Dilthey's theory. Thus, there are types of views of life (Anschauungen). They are perhaps not psychological types, but designate typical differences in the views of people as objective mental structures. But there must be some correspondence between these types of value direction in respect to the environment and the psychological differences in the personalities of the individuals in question.

Dilthey sets up three types on this basis of values.

1. The man who is bound to the earth, who takes pleasure in earthly goods, the man of active drives. The meaningful expression of this in philosophy is naturalism, sensualistic epistemology, materialistic metaphysics, and hedonism in ethics. 2. The heroic man. His predominant value directions belongs to the sphere of will, not to the sensual or the theoretical directions. He is indeterministic, has an autonomous will ethics, and is a metaphysical theist. 3. The contemplative man. Feeling determines his value direction. He feels himself as one with the universe which animates his feelings. Nature and spirit - in the heroic man an unconquerable antithesis - fuse in this type to a psychic harmony. His picture of the world is the immanence of God in the world, pantheism; his way of viewing things is aesthetic intuition.

A direct statement of Dilthey's view (33) of types is given as follows (p. 270):

On the basis of all these uniformities rises the partic-

ular. Every particular is different from every other. Leibniz in the garden of Charlottenburg challenged the ladies of the court of the philosophical queen to seek two leaves that were the same. Thus he demonstrated his principium identitatis indiscernibilium. And equality denotes, where the expression is used of real and gradually varying things, only the approximation to a complete disappearance of every difference. The principle has its highest application to human life unities. Now it is essential for the individuation of the real that certain fundamental forms, which we shall first designate as types, constantly occur again and again in the play of variations. In such a type there are several attributes, parts or functions, regularly connected together. These features whose union makes up the type stand in such a mutual relationship to one another that the presence of the one feature allows an inference as to the presence of the other, the variation in the one to a variation in the other. This typical union of attributes in the universal increases in an ascending series of life forms and reaches in the organic and then in the psychic life its high point. This principle of the type can be viewed as the second principle that controls individuation. This law made it possible for the great Cuvier to reconstruct from the petrified remains of an animal body the original body.

Dilthey then goes on to say that the direction of these increasing life values is development.

While Dilthey was more interested in the philosophical side of the question, these differences in view served as a part basis for the entire modern development of psychology. His types are not used now, yet they have found added expression in Spranger's types. From the first, as was just pointed out, the important history of personality work and characterology comes from an attack on the natural sciences and their methodology.

#### b. Spranger.

Like Dilthey Spranger (205) sets up two kinds of psychology: the atomistic natural scientific psychology, and the

cultural science psychology. Since elements only have meaning when in a structure, the cultural scientific movement comes first. Spranger's main goal is "to learn to see psychic phenomena structurally correct." There are two ways to do this: one can proceed from the product of the mind, the structure erected by the mind, or from the act of the individual. Spranger considers the first method rather uncertain, since the form in life cannot be directly correlated with the structure. The mental act is the only channel then that gives the best results.

He recognizes a mind-object structure as well as a social mental act, but he places more emphasis on the individual. The psychic act is for Spranger what the element is for the natural scientist. It is as it were, the relatively simplest structure beyond which one finds only meaningless elements. Only when the total psychic event is known in all its parts and processes does it have value. It is only in the act that these meanings come out.

Spranger considers "all" in "every" act. His statement is: "In jedem sinngebenden Gesamttakt sind alle Grundformen sinngebender Akte zugleich enthalten, in jedem geistigen Akt waltet die totalitat des Geistes." (In every meaningful total act are contained simultaneously all fundamental forms of meaningful acts, in every mental act prevails the totality of the mind.)

The totality of the mind is placed in a larger whole.

This is not the milieu of the natural scientist, nor the milieu which v. Uexkuell has characterized in his "Bausteine zu einer biologischen Weltanschauung, 1913). Spranger's milieu is that environment in which meaning may take various directions. The directions of meaning are the types. Thus the type is not the sum of mental attributes of a large number of individuals, but are differentiations of reality. Such are science, art, and society. One value may be dominant, e.g. the value of science. This would be the theoretical type. (see Klüver, 112)

Spranger thus sets up 6 life forms. (Spranger's book has unfortunately been translated into English by the title "Types of Men." This does not have the philosophical significance of the real title "Lebensformen" (Life Forms, or Forms of Life).

The six types are:

1. The theoretical man.
2. The economic man.
3. The aesthetic man.
4. The social man.
5. The man of power.
6. The religious man.

Spranger has been criticized for his view of types. E. Troeltsch (Der Historismus und seine Probleme, Tübingen, 1922) has objected that Spranger's types are as rigid as the Kantian categories. Klüver (111-114) points out that Spranger's types are not actual life types, but ideal types, schemata. Spranger's 'pure' types are not psychological-empirical, they are not even

historical types, but indices for conceptual constructions of reality. Other criticisms have been given by the natural scientists. Selz, whom we shall now consider, takes up some of these objections.

### c. Selz.

Selz (200) points out that as a first objection to the cultural sciences their method has been called an art by members of the natural sciences. They are apt to think that the methods used cannot be taught and handed on as they can be in the natural sciences. Selz states that this is incorrect, since in every field of science actual progress has been made partly by exact methods and mostly by inspiration and the so-called 'inexact' psychological methods. These are often defined as a 'hunch', a 'brilliant idea', an 'accident' and so on.

The second objection is that such a method lacks the possibility of scientific control. Selz points out that historical facts cannot be verified, but logical consistency is just as valuable here as in many of the other sciences.

We have seen that Dilthey arrives at his types by historical induction. Spranger sets up ideal types. We now come to Selz who sets up three kinds of types:

1. Struktur types. These are based on the Struktur concept and are exemplified in Spranger's ideal types.

2. Empirical types. These have been set up by psychiatrists on the basis of clinical pictures of disease. They are also exemplified by Ostwald's division of scientists into classical and romantic.
3. Correlation types. Examples of these types are male and female, professional types, racial types. One attribute is taken, such as sex, temperament, etc., to which a group of other attributes are correlated. This is the central attribute. Thus, when the central attribute is given, the secondary attributes show certain degrees of probability. Heymans' (68 - 72) work is an example of this kind of type. Briedé (18), Pannenberg (165 - 167), and Otto Lipmann have used this kind of type.

d. Weber and Jaspers.

In this connection Weber's ideal type (220) may be considered. Klüver (113) compares Weber's ideal type with Spranger's types. Both Spranger and Weber do not deal with empirical individuals. Let us consider Klüver's differences:

1. Spranger's type concept implies a reference to value, whereas Weber's type is designed to point the way in a formulation of hypotheses, thus being a methodological instrument.
2. Spranger's types are supposed to be the final outcome after "faithful observation" of reality. Weber's have not this foundation in observation.

Weber (220) lays great weight on understanding. We can only understand when there are subjectively understandable goals or purposes. He points out (p. 256) that a category like "striving for gain" belongs to no psychology. This is because the same striving can be directed in other directions.

He opposed the natural scientific method with the statement (p. 256): "The processes of heredity, e.g., are not understandable in a subjectively meant sense, and they are less so the more exact the natural scientific investigations of their conditions become."

With Jaspers (K. Jaspers, *Allgemeine Psychopathologie*. Berlin, Springer, 1913) and Weber there is no question of a new discovery, it is a methodological procedure. One has for example constructed the ideal type of mania (gaiety plus incoherence plus pressure of emotion). Such a method does not result in unrelated enumerations ad infinitum, but discovers relationships which are ordered and meaningful. Genetic understanding is placed in opposition to the static understanding. To arrive at a static understanding is the task of phenomenology. (See Klüver, 113).

This all rests on the so-called "verstehende Psychologie," the study of relations. It is pointed out that we have a construction of types which are sometimes illustrated by particular cases, but are not proved by them.

Jaspers denies the inductive approach to types. We are

not dealing with averages but "specific" structures which may be very infrequent. The individual case as such is not important; the "type" viewed from the standpoint of the individual is always "false". Anschauung is the basis of understanding.

e. William Stern.

Perhaps no man has delved as deeply into the problems of personality as William Stern. Unfortunately Stern has not been able to produce either a typology or a system that stands equal to some of the prevailing ones. Jung, Rorschach, Jaensch, Kretschmer, Viola, Pende, Draper, and many others have worked with the type concept, often with far less insight into the actual problems than Stern possessed, yet they have succeeded in forging ahead while Stern has remained behind. This does not dispense with the great value of what Stern has elaborated in his system of personalism and differential psychology.

Since we must refer in the methodological section to Stern's views, a survey of them can be given here in some detail. Stern points out that the person is an undivided whole, and any theory that proceeds from parts will do violence to it. By studying only a part of the individual, the total relationship is lost, and we only have one side of the personality (210, p. 17). Stern points out that this is a very painful limitation of all philosophical treatment of the personality (p. 17). There are only two ways to avoid this difficulty: the singling out of concepts must be viewed as methodologically necessary and is

purely artificial; then a point of view must be selected that is most centrally placed, which makes possible the union of all concepts in the total picture.

Stern distinguishes formal, contential, and structural properties. He views the individual as a whole, which very naturally brings him into the realm of philosophy. The question whether we can view the individual as a bearer of certain properties now arises. Let us give a quotation from Kronfeld (151) concerning this point p.35:

We can now summarise here what has been said by stating that every theory of the relation of the character to the properties is dependent on the relation of the whole to its parts. When William Stern used the concept of entelechy for the totality of the personal character, this designation is just one of the philosophical expressions which the theory of character has received. In it as in every such theory is expressed that the whole, i.e. the character, is more than the sum of its parts, namely of the properties. The properties constitute the character; every single one has its special place within its structure - and the character is to an extent only the form of the unity of the structure and coexistence of these properties. One can also express this relation theoretically different: one can use the concept of law and maintain that the relation between the character and each of the properties related to it is a law, or that character itself is nothing but the contents of a law which could be read off from its related properties. . . Or one can consider the factor of the relationship of the properties to the unitary form of the character morphologically, so to speak, and apply the concept of structure.

Stern also distinguishes between phenomena, acts, and dispositions. The phenomena make up the raw materials for the act. He points out that the individual is more than an aggregate of physical and psychic phenomena. "Thus, these hypothetical elements do not have a mechanical but a 'personal' character:

the multiplicity and splitting of the phenomena present in the individual find their explanation and summary in attributes which proceed from the individual or rest in him as far as he is a whole (cf. Wheeler's law of derived properties). The act is not merely a chain of phenomena, but a factor which gives to these events in the moment the unity of directions, subordinates them to a common goal. The unity does not depend on the participating phenomena (cf. Wheeler's law of configuration), but on the closed attitude towards the goal; and this goal is related to the individual as a whole, to his self-preservation or development. There is no division between a psychic and a physical side of goal-activity."

We see here that Stern was approaching some of the fundamental problems facing modern personality workers. The emphasis on the whole, the recognition of form and contents, the more dynamic interpretation of structure, and many other factors were expressed by him.

Stern sets up three categories of the person: multiple unity, teleology, individuality. Our perception often presents us with things as though they were unitarily limited realities, which they are not in reality (clouds, sand pile, etc.). The difference is ascertained when these things are studied and found to consist of parts put together, along with the mechanical laws controlling them. Only when this reduction is not possible, where the cause of an event is a result of the structure as a whole, can we call this structure

a real unity, a person. Stern (210) expresses this p. 18:  
 ".-. .there where causality appears in the form of immanent teleology is the structure, which is at the same time the source and goal of the teleological action, a person."

Stern considers the striving for a goal as the point of departure for a study of the person. This is because the other points do not imply a whole. He thus brings in the concept of the causa finalis. Sigwart (203) has denied that science can study final causes in the Aristotelian sense, and limits science to the study of formal causes. We must examine Stern's views to see whether he is considering the Aristotelian view.

He points out that things can have a purpose, but this purpose is not within the thing, but without. This is called heterotelia. The person, on the other hand, is purpose, i.e. the purpose is immanent. This is called autotelia. Now there are two goals in the person, self-preservation and the unfoldment of the self. The person strives to maintain himself in his totality, and this is the conditio sine qua non of his existence. But just to maintain the existence is not enough, this would result in unchangeableness. This leads to the second goal, the unfoldment of the self. This means that there must be an inner activity and change.

Stern now distinguishes between a real and an ideal person. The real person is how he actually appears. The ideal person

is the one who corresponds to the unfoldment of the self if this were pure and completed in an unmixed condition. Although this final completion is not reached, it is a positive force in the individual's life.

When the ideal part of the individual is emphasized, Stern uses the term 'personality'. The personality shines through the real person as he appears in life. The person is a compromise; the personality as an ideal is never completed (210, p.21).

Stern emphasized that this separation of the ideal and real person is purely conceptual. It has tended to lead one towards a special class for the ideal person, it became 'soul', 'character' and so on. There is an evaluative concept, and the mixing of evaluative concepts with theoretical considerations naturally leads to a break between actuality and theory. Stern does not wish to discuss the value question, and emphasizes that such a separation of the person is not possible, since it is a whole, an autotelia. He especially turns against using the concept of the ideal with that of the psychic, since the self-unfoldment is just as psychophysically neutral as the person. Stern also warns against using the ideal person in a psychological sense, it has a purely teleological meaning.

Just as Spinoza divided 'esse' into existentia and essentia, Stern divides the person into the preservation of existence, and preseveration of the essence of the individual. In the first there are no qualitative differences, the individual

either lives or he does not live. In the second there are all degrees of differences.

One of the chief characteristics of the preservation of the essence of the individual is perseverance. Stern points out that Hering attributed 'memory' to organic substance as a property. This 'memory' or perseverance is psychophysically neutral. The individual has both psychic and physical 'constants', skull and face form, lines of the hand, hair color, body posture, manner of walking, and many others which he shows throughout many years in a constant manner. This constancy is not passive, but is constantly reproduced in spite of inner metabolism, inner and outer changes, and so on. In the mental sphere there are also constants which we call talent, temperament, and character.

Stern emphasizes that this persistence of the constants is independent of the contents of what is maintained. Persistence is the function, the contents may vary with the different conditions, including heredity, environmental conditions, and other conditions.

We will not go into the elaborate discussion of other problems facing the personality worker as presented by Stern. We see from the foregoing discussion that Stern is making a distinction very similar to the Aristotelian teleology. The personality is the entelechy of the body. We are inclined to view this phase of the problem as unapproachable, as Sigwart has

pointed out, but it must be emphasized in any theoretical discussion. We must now go to Stern's views of types.

Stern gives the following definition of a type (209, p.168)

A psychological type is a dominant disposition of a psychic or psychophysical neutral nature, which a group of people possess in a comparative way without this group being divided univocally, from the other groups.

This definition contains the following points: (1) the type is common to a group of people; (2) the dispositional factor; (3) flowing transitions between the types; (4) not limiting the division to one part of the individual is life.

Stern claims that the type is not a class. He means by class a biological classificatory principle. He states that there are differences between the classes in biology, whereas the differences between the types are flowing transitions from one to the other.

Of extreme importance for this study is Stern's treatment of the type problem in relation to quantitative determinations. He states (209, P.174) that there is a danger of changing the type into a class, and then attempting to find quantitative measures of the class. He points out that logic has concerned itself with classification, the differentia specifica, the classes and subclasses, whereas the problem of types as a continuum has scarcely received any attention. Stern points out that Sigwart has brought this out more than any one.

Stern criticizes Kant who set up his theory of temperaments and considered them so rigid that transition forms between them

were impossible. Whenever types have been set up transition forms have always been found. These transition forms have again been relegated to a class and have been called mixed types. Sterns summarizes this problem with the statement that it is impossible to classify the psychic variables into rigid groups, therefore a typology can never be sharpened to a class division (209, p. 175).

Stern (209, p. 181) set up type-schemes <sup>(1)</sup> by which types are formed. There are three: monotypical, antitypical, and polytypical.

Monotypical types are classified contradictorily, i.e. according to the presence or absence of type-attributes. Either the individual has some attribute or he lacks it. Statistical treatment of this can be given.

The antitypical classification is not contradictory but contrary. From an indifferent point two contrary forms of an attribute stretch out in two directions; and the goals of these directions become type centers. At times the indifferent region is the field of a mixed type. Thus, the way an individual judges, comprehends, etc. leads to the setting up of an objective and subjective type. Between these two tendencies is a mixed or harmonious type. Kraepelin (119) used this form in his study of work, grouping people into morning and evening workers.

The polytypical variation occurs when a group of quali-

tatively different type forms are set up on one attribute which cannot be included in a one-dimensional scheme. This typology is either entirely unsystematic, or it can be reduced to a crossing of several simpler schemata. An example of this is the theory of temperaments. This classification recognizes the fact that types of temperament are complex and consist of a mixture of simpler types. One can vary the simple types anti-typically, thus forming various combinations.

Several of these classifications have been used by prominent psychologists. Their importance has not been very great in a practical way, but they have constantly drawn attention to the differences between individuals. Following are some of the most important of these classifications, of course remembering the classification of Hippocrates.

Kant (*Anthropologie in pragmatischer Hinsicht*, 1798) crossed two pairs of opposites: feeling-activity, and excitement-relaxation.

Helwig (B. Helwig, *Die vier Temperamente bei Erwachsenen*, Paderborn, 1888) set up two pairs of opposites: strong receptivity-weak receptivity, and strong reaction-weak reaction.

Wundt (242) based his classification on strong-weak, and quick-slow.

When we review the names of men who have set up such classifications, such as Dorsch, Herbart, Bahnsen, Carus, Höfding,

Ebbinghaus, Heymans, Külpe, Kreibig, Klages, Ach, Meumann, Ribery, and many others besides those already mentioned, we find many of the most important psychologists.

These classifications have an historical basis, dating back to Hippocrates. Psychologists have naturally been drawn to them, but they have not led to much practical use. The chief drawback seems to be in the difficulty of establishing criteria for the types, not in the fallaciousness of the anti-types used. There is also the added difficulty that the anti-types, while actually existing, do not stand in the proper relationship to the whole, i.e. they are not formal designations, but rather contential designations. We shall consider this point later.

#### f. Lewin.

Lewin (136) has not been directly interested in characterology, but he has approached many of the same problems facing the characterologist, and has developed many aspects of the new field theory. In his discussion of laws he makes the following statement (p.388): "The ascent from experience in a single case to the general law corresponds to the ascent from the 'example' to the 'type,' to a type that is invariable in respect to the historical-geographical time-space indices." Lewin makes the distinction between the different members of a quantity and the quantity itself.

He points out that the type has nothing to do with the

frequency with which this type is realized in the historical course of the world. Gold, for instance, has certain properties and it is immaterial whether it is distributed in great quantities over the world at all times, or whether it is quite rare. Thus the frequency of a certain type is immaterial. He emphasizes that the type is not identical with the totality of the members of the type. The 'type' gold is not identical with the 'totality' of the gold in the world (p. 389). Overlooking this fact is the main reason why one so frequently considers a type and a quantity of members as the same. "also the empirical 'type' must not be identified with the universality of its representatives in the historico-geographic world" (p. 389).

This concept of the type shows a certain similarity to the 'essence' as given in phenomenological logic (see Husserl(79) and Gibson (55)). The type is characterized by being so and so (Sosein), not by its existence. Therefore, it would be foolish to attempt to use different representatives of the type for the proof of the correctness of the description of the type in question; because such a type is defined by being so and so, not that it exists (pp. 390-391). The statement: Another representative of the same type has the same properties, is therefore a tautology.

Let us quote the following statement (p. 391):

It is somewhat different when one asks the question whether type A always shows the property b or whether cases occur in which type A does not possess the special property b. In this case one does not mean with the term 'type A' in reality

a 'univocally definite type (final species), but a more general class of types which all have certain attributes A in common, and one asks whether there are within this general class types that possess the attributes A but not the attributes b. (The term 'there are' is a type concept of 'systematic' relationship, i.e. it concerns the presence of a type or the relations of types to one another and not the existence of single concrete individuals. The question cannot be answered by seeking as large a number as possible of the members of the same type, but only by seeking representatives of different special types, whereby a single representative of every special type suffices for answering this question.)

Very important is Lewin's idea of a conditional-genetic type. He points out that for the scientific determination of a conditional-genetic type one example in one situation cannot be used. One must proceed through a variety of situations, and then define a certain conditional-genetic type only as a type T when under the conditions A it appears as a phenotype a, under the conditions B shows phenotypically the behavior b, etc. Thus one does not proceed in the scientific description of such a conditional-genetic type to conceive of the type as a quantity and then to investigate as many members of this quantity as possible in order to infer from it to the other members. "Rather it suffices to investigate a single example of the conditional-genetic type in each of the situations in question, only a greater range of variation of situations must be used" (p. 393).

Lewin now turns to the distinction between phenotypes and conditional-genetic types. He gives two principles in this connection (p. 398):

1. Events that are phenotypically closely allied can be very different in respect to their conditional-genetic type, and

conversely in respect to their conditional-genetic type the same or closely related events can belong to entirely different phenotypes.

2. A phenotypically relatively unitary event whose phenomenal description can be made by the correlation with a single unitary type can consist conditional-genetically of a series of completely different processes whose grouping merely gives the illusion of a unity; and conversely the course of a series of events quite different from one another may come from one unitary process controlled by a single law.

Lewin now turns to the consideration of the conditional-genetic type (p. 406): "The description of a conditional-genetic event type takes place by means of a statement of 'its law.' Indeed, we represent the thesis that a law is nothing other than a description of a certain conditional-genetic event type."

Lewin's idea of type approaches very closely the idea of class in biology. The type or class gives certain properties of a large number of members, but merely studying the members will not prove the class, since this exists by definition. Statistical treatment of members has nothing to do with such a type.

In his discussion of the phenotypes and conditional-genetic types (genotypes) he is approaching the same problem as discussed by characterologists and especially by Stern. He recognizes that in studying behavior, either as a physical

or human event, one must constantly keep two aspects of the event separate in order to avoid confusion. In his example he indicates that a single example of a type taken through various situations will show different phenomenal (phenotypical) behavior. This implies the presence of some more stable structure to account for the variation in behavior and leads to a distinction that has not yet been made; namely, between the formal and contential aspects of behavior.

As Lewin views a law, we see that he is thinking of a unitary type of event. The law in its operation may show other deviations (phenotypical manifestations) which might mislead one into thinking that what one sees phenomenally is the manifestation of the law. An example might be taken from Wheeler's law of least action(229). The phenomenal behavior of an individual may seem quite devious to the observer, in fact, one might draw the conclusion that the behavior refutes the law. But when this phenomenal aspect is disregarded, and a closer analysis is made of the underlying structure, both of the environment and of the behavior, it could be demonstrated that the law is still being manifested (genotypically but not phenotypically).

As was said before, Lewin has not contributed much to the field of characterology, but he has started a school that shows some promise of contributing a great deal. Problems of memory, learning, and reality have been studied from this dynamic point of view by students of Lewin (Brown (20), Ovisiankina (164), Zeigarnik (243), and others). Closer to character-

ological problems is the work by other students on psychic saturation and satisfaction, anger, and Freudian mechanisms (Dembo, 31), Hoppe (74), Freund (50), Mahler (150), et al.). There is no doubt that they are approaching fundamental problems for personality, and the future will show whether they can give the basis for a science of personality, or whether it will have to come from some other source.

g. Freud

Let us now turn to another important movement in the field of characterology. This movement arises from Charcot's study of hysteria and is represented by Freud. Freud (47-49) has classified his material, and his anal, oral, and genital types often show similarity to the prevailing classifications. Freud represents, however, a typology based on the libido in psychosexual genesis. We can state at the outset that this limitation of the personality to the sexual sphere, however important it is in practical life, often excludes some highly important aspects of the other spheres of the personality. For this reason we must consider Freud's contributions somewhat hampered by undue limitation on the one hand, and by too great a generalization of the sexual sphere on the other. This is reflected in the wide rejection of psychoanalysis by scientists, psychologists, psychiatrists, social workers, and others. Attempts have been made to bridge over the difficulties, but certain very definite things have hindered this which we must consider here in the light of types.

From the positive side, Freud recognizes development, and

he especially recognizes types based on psychosexual genesis, all of which places him in complete accord with the entire Struktur movement.

We see that Freud has viewed man on a biological basis. Repression, the unconscious, the dynamics and economy of the drives and their ramifications throughout the entire psychic life of the individual are of extreme importance. Psychoanalysis attempts to analyze the genetic elements of the personality and from these to aid and understand the individual. In the light of the cultural science movement, this method is highly inadequate. The individual emerges as a whole, consisting of the structure of the individual plus the structure of the environment. The analysis then will tend to lose the unity of the whole, as all analytical methods do. The Freudians by studying the past history of the individual in the light of his psychosexual genesis uncover complexes that have arisen earlier, and by making these conscious they are eliminated by the individual. Science asks why do some people have certain complexes, others not, why do just these people have complexes and others not? This brings us back to the original problem of the inner structure of the individual as opposed to the environment. Why is it that a dog at one period in an individual's life plays such a tremendous role of influencing an individual's life, even causing him to run from the altar as he is about to marry a girl he loves? This behavior may be traced back to the simultaneous occurrence of a sex experience and a dog which is repressed into the unconscious but which

later appears as a strong influence in the individual's life. While it may be true that this simultaneous occurrence of two things accounts for the later action, some other individual seems to be entirely untouched by these occurrences and such a violent reaction does not appear. To say that everyone has such reactions always leads to overgeneralization.

The present writer does not wish to criticize psychoanalysis, especially since it has contributed so much to the study of the personality. The present discussion has only concerned certain methodological points. If the psychoanalysts will be tolerant enough to allow modern characterologists to investigate their cases on the basis of the Struktur concept, some of the scientific difficulties will be cleared up. If a structural type is found to tend towards complexes, as this seems to be the case, other types tend to resolve their complexes immediately, the biologists and characterologists can bring these facts into the total body of science. But when individuals are treated at random, some with success, some without, there is no scientific check on what has happened, there is no way of studying on a comparative basis the various cases. The psychoanalysts must therefore classify their material using the recent changes as a basis, or they will be open to constant criticism because of their lack of comparative material. Work such as done by Mahler (150), Dembo (31), Brown (19), and others is an attempt to study the dynamics of Freudian mechanisms. This work is perhaps the most fertile of all

recent attempts to reduce these mechanisms to scientific terms.

#### h. Jung

Jung (103) realized some of the defects of the Freudian systems and he gave psychology one of the most important classifications that has been developed. Its value has been so great that every personality worker should be thoroughly familiar with Jung's interpretations. An extremely concise statement of his view is contained in the opening words of his book. (p. 9):

In my practical medical work with nervous patients I have long been struck by the fact that among the many individual differences in human psychology there exist also typical distinctions: Two types especially became clear to me which I have termed the Introversion and the Extraversion Types.

When we reflect upon human history, we see how the destinies of one individual are conditioned more by the objects of his interest, while in another they are conditioned more by his own inner self, by his subject. Since, therefore, we all swerve rather more towards one side than the other, we are naturally disposed to understand everything in the sense of our own type.

Jung points out that both introversion and extraversion are present in everyone, each individual tending to swing one way or the other. Since the individual attempts to compensate for this swing by emphasizing the opposite tendency, many difficulties arise when the individual attempts to judge his own type.

Jung emphasizes (pp. 10-11) that his types were not a deductio a priori, but a deductive presentation of empirically gained understanding.

Since both forms of this mechanism are present in each individual, and since each may assume the dominance, a pure type is never possible. A pure type would mean that one or the other of the mechanisms would cease, an impossibility since both are intimately connected in the totality of the personality. Nor does the dominance of the one signify that the other may not be prominent in certain situations.

He further points out that within each type there may be extremely wide differences. This also makes possible a further differentiation of individuals. Jung considers subtypes under the two main groups (p. 14). He sets up four functions: thinking, feeling, sensation, and intuition. "Everyone of these types can moreover be introverted or extraverted according to his relation to the object in the way described above" (p. 14).

We see that Jung is presenting some very important points that have appeared later in the development of typology. He recognizes the presence of certain functions in every individual, but the direction, the fundamental activity of these functions is different. By grouping people together according to the subject-object relationship, the type is established. This does not break individuals up into different beings, but distributes them in accordance with the dominance of variables present in the entire species.

Jung has given one of the most masterly literary presen-

tations of his types that exists in psychological literature. There is hardly any one who has had constant contact with large numbers of people who does not recognize these distinctions. This is further supported by the long lists of dichotomies which one finds in almost every psychologist who has concerned himself with people. Added to this has been the rapid development of the same dichotomy in psychiatry (manic-depressive psychosis and schizophrenia). This has not been confined to psychiatry and psychology, but we find poets and philosophers setting up the same dichotomies. Schiller expounded on the differences between the naive and sentimental poets, a distinction that quickly brings up the extraversion-introversion concept. Nietzsche set up the Apollonian and Dionysian types, which again correspond to the general dichotomy. Even William James pointed out with great clarity the differences between the rational and empirical scientists, calling the first the tender-minded, the latter tough-minded.

The two aspects represented by Jung are the general-attitude types and the function-types. The general-attitude types are differentiated by their attitude towards the object. The introvert's attitude is an abstracting one, he must face the problem of how the libido can be withdrawn from the object. The extravert takes a positive attitude towards the object, and his subjective attitude is continually being orientated by it.

Jung considers the relation between subject and object,

when viewed biologically, a relation of adaptation. There are two different ways of adaptation in nature; the one is by increased fertility, accompanied by a relatively small degree of defensive power and individual conservation; the other is by means of self-protection, coupled with a relatively insignificant fertility. The extravert represents the first, the introvert the latter.

In considering the question of the origin of his types, Jung points out that two children, in spite of the greatest possible similarity of external conditions, will assume different types. Since the environment is not adequate to explain this difference, it must be sought in the individual's own disposition. He concludes this discussion with the following statement (p. 416):

"As regards the particular disposition, I know not what to say, except that there are clearly individuals who have either a greater readiness and capacity for one way, or for whom it is more congenial to adapt to that way rather than to the other. In the last analysis it may well be that physiological causes, inaccessible to our knowledge, play a part in this. That this may be the case seems to me not improbable, in view of one's experience that a reversal of type often proves exceedingly harmful to the physiological well-being of the organism, often provoking an acute state of exhaustion.

Hinkle (73) in America also set up types based on the subject-object relation at the same time or even before Jung's types were given in their final form.

While Jung's types have found wide confirmation of the basis of empirical data, an accurate determination of these types has not been forthcoming. It has already been pointed

out by many workers that the social attitude is not adequate to determine introversion-extraversion, since it is only one variable and may not be in direct correlation with the total personality. This means that the individual may take the objective or extravertive view of life in most things, but due to some circumstance he may be introverted in respect to the social side. One other factor has made the determination rather difficult. Since the individual is asked questions concerning the factors of introversion-extraversion, the compensatory influence may so hinder an accurate statement from the individual that the results will be valueless. When clear-cut cases are obtained, it might be supposed that they are bordering on the pathological. These difficulties may have discouraged some personality workers, but there are other methods and ways of getting at the fundamental dichotomies of personality types.

#### i. Adler

Adler represents another of the deviations from the Freudian psychoanalytical movement. He and Jung are the two most important of the rebels. Adler ( 1, p. 1) points out that psychologists have peculiarly limited their fields, not only in what they are investigating, but also in their methods. He states( p.1): "They act as if experience and knowledge of mankind were, with conscious intent, to be excluded from our investigations and all value and importance denied to artistic and creative vision as well as to intuition itself." These

psychologists then study psychic and physiological phenomena and in the end as Adler states (p. 1): "By this procedure they naturally rediscover the interdependence and connection in individual expressions, implied from the very beginning in their schematic attitude toward the psyche."

An important point of methodology is included in the following quotation (p. 1):

Either the foregoing method is employed or an attempt is made by means of small, if possible measurable individual phenomena of a physiological nature, to construct psychical states and thought by means of an equation. The fact that all subjective thinking and subjective immersion on the part of the investigator are excluded - although in reality they dominate the very nature of these connections - is from this view-point regarded as an advantage.

Adler points out that this separation of the investigator from the matter studied belongs to a type of natural scientific investigation that is now antiquated. He shows that this method has been "replaced everywhere now by views that attempt to grasp living phenomena and their variations as connected wholes, biologically, philosophically, and psychologically" (p. 2)

Further (p. 2):

By starting with the assumption of the unity of the individual, an attempt is made to obtain a picture of this unified personality regarded as a variant of individual life-manifestations and forms of expression. The individual traits are then compared with one another, brought into a common plane, and finally fused together to form a composite portrait that is, in turn, individualized.

Adler then points out that the goal is the most important thing in understanding the individual's life. He says that we cannot think, feel, will, or act without the perception of

some goal. Life activities can only be fully grasped when the goal has been set up. This view is quite dynamic. The goal of superiority is the objective of the human psyche. But this goal is not to be found in reality, it belongs to the fictions such as described by Vaihinger. It may not even be conscious to the individual, but it controls his entire life.

The early life of the child shows throughout its entire development a feeling of inferiority in relation to its parents and the surrounding world. This is due to the immaturity of its organs, and the superiority of those surrounding him. This feeling of inferiority is the cause of its restlessness, its desire to do something. From the dynamic view the child seeks compensation for this inferiority in some way.

Thus life is influenced by a fictitious goal, the goal of superiority. This is expressed by a feeling of inferiority which brings about the various compensatory mechanisms. Life then is made up of these mechanisms and can be explained and guided by them.

Adler coined the word 'individual psychology' for his system. He differs from the characterological movement by the lack of types. Let us consider some of the criticisms of Adler's system. It must be remembered that Adler has pointed out many important points for both psychology and characterology. His dynamic view of the goal and compensation, his emphasis on the whole, and many other points are in line with

many of the recent developments in psychology.

Roback (180, p. 296) has criticized Adler on the grounds that actual life situations do not point to such a compensation. While Beethoven's hearing defect may have led to compensation in music, Roback points out that men like Schubert, Halevy, Rimsky-Korsakoff, Bizet, Raff, Offenbach, Bruch, Rheinberger, Paine, and we can add Toscanini, were near-sighted, and that according to Adler's theory they should have compensated for their visual defects and have become oculists or painters. It might also be added that other composers who later became deaf did not reach the heights of Beethoven. In short, there is something besides the organ inferiority to explain Beethoven's greatness.

Other criticisms have concerned his emphasis on the neurotic type (see Kronfeld (131), p. 437). Adler has been giving an excellent description of the neurotic type, but we cannot generalize from the one type to other types. This is the tendency of medical and clinical men who generalize from the abnormal individuals with whom they come in contact to all individuals.

Let us consider Adler now in the light of the present study. We see that some very important distinctions are lacking in his work. Jung has just pointed out that the functions of feeling, thinking, and so on are different in different individuals, not specifically, but in the manner of their relationship to the object. While it may be true that we cannot

think, feel, will or act without a perception of some goal, the attitude we take towards this goal, as Jung has pointed out, is different with different dispositions. Adler, therefore, does not go deeply enough into the problem of individual differences, and thus to the problem of grouping these differences into types. He makes the first step, but then stops short.

Freud, Jung, and Adler are all dynamic in their theories, because they are seeking certain drives within the individual which will explain the highly complex behavior found in everyday life. With Freud the libido is sexual, with Jung it is merely psychic energy which is used for biological adaptation, with Adler it is a goal activity for superiority arising from organ insufficiency. While it might be admitted without argument that all these views are correct, they do not go far enough, they do not account scientifically for the differences found in people. This is, of course, the fundamental criticism by the characterologists of the psychoanalytical movement. We see, further, that they do not furnish a comparative basis. Since they tend to overlook the fact that not all people are alike, at least in their theory, they shut off from science the possibility of making more elaborate studies on certain types of human behavior.

#### j. Rorschach

One of the most fruitful attempts to bring Jung's empirical deductive types in line with more accurate determinations and measurements is represented by Rorschach. Rorschach (185)

has the honor of having devised one of the most remarkable tests in the history of psychometrics. It has had none of the difficulties of the intelligence tests, which were confined to ages, standardized groups, and which had so little predictive value. The Rorschach test has had wide use in all countries, at all ages, and in the hands of an experienced worker it is one of the most valuable tests in the entire field of personality work.

Rorschach (p.87) points out that Jung's original libido was a somewhat broadened Freudian concept. Later it was extended to include all manifestations of the will in the Schopenhaurian sense. This change also produced a change in the concepts of introversion-extraversion. Up to that time they had been considered pathological conditions. Jung now considered that there are two types of people, the extraverts and the introverts, who are perfectly normal. The fundamental function of the extravert is feeling, that of the introvert is thinking. A pathological condition arises only when this fundamental function of each type gets in conflict with the unconscious secondary function (in the extravert this is thinking, in the introvert this is feeling pp. 87-88). Rorschach summarizes his stand on this problem in a passage that has caused some confusion to personality workers. Following is a direct translation of the passage (p. 88):

"In order to avoid all misunderstandings, I emphasize that I use the concept introversion in the following discussion in a sense which has only the name in common with Jung's introversion concept. The clinical picture of the kinaesthetic type, as is shown on the basis of the form interpretation test, is not the picture of the introverted individual as Jung describes

him, but rather the picture of the introverted individual that corresponds to the ideas of the usual language usage.

In the light of Rorschach's preceding discussion, we see that he is referring to the idea of an individual who is turned inward or outward, rather than of the changing idea that has come from psychoanalysis. Rorschach gives a further refinement of the introversion-extraversion concept by distinguishing the state and process of these two functions.

The active process is called the introversive and extratensive tendencies, which are normal. The passive, or abnormal, tendencies are called introversion and extraversion. This distinction between the state and process is interesting. The manic patient represents a pathological condition by being helplessly extraverted, the schizophrenic by being introverted. Normal individuals tend one way or the other, being capable of shifting as the necessity arises. Only when this shift becomes difficult is there a pathological condition arising from a lack of adaptation.

Rorschach brings out some very important distinctions in his work which must be considered here. It is so important that the entire passage can be quoted (p. 94):

The experience type of a person is not his general psychogram. It only indicates how the individual experiences, not how he lives, for what he strives. An individual with very strong introversive components and with less strong extratensive components can in his behavior be pronouncedly extratensive. Another person with the extratensive experience type can appear outwardly introversive, which, nevertheless, does not occur as often. These discrepancies between the experience type and life can only be explained by the fact that the actual

energy, the amount of energy effective at the time, the will, the libido, or whatever one calls it, is only directed towards one part of the possibilities of experience. It is only the drive that makes out of the dispositional "components" active tendencies. Under favorable conditions, as later examples will show, it can be found what part of the experiencing apparatus in a given case is predominantly activated. The experience apparatus with which man experiences is a much wider structure than the apparatus with which he lives. For experiencing man possesses a series of registers of which he uses only a few for the actions of life, so few as to border on to stereotypy.

The experience apparatus indicates how broad the apparatus is with which the subject could live. It cannot in itself - with the exception of especially favorable cases - indicate what parts of the apparatus activates the subject to active life.

This is a further recognition of the double aspect of behavior. Whenever the problem is approached by accurate means, the difference between the phenomenal reactions and the underlying structure becomes more prominent.

#### K. Heymans.

Now let us consider Heymans (72). Stern set up differential psychology, Adler individual psychology, and Heymans has written on special psychology. These men have realized that certain problems in psychology occupy a field to themselves.

Heymans (p. 1) defines general psychology as treating of the general and what is in agreement. Special psychology treats of special things, differences in conscious phenomena. General psychology seeks laws which can be demonstrated in every individual; it ascertains, for example, the relation of two stimuli to one another, laws of association, and so on. In the formulation of these general laws, individual differences find no place; just as little as in the law of gravitation do the specific weights of the substances find consideration.

Heymans emphasizes that there are not qualitative differences, but almost always quantitative differences. The criminal has some morality, the idiot has some intelligence, but they differ greatly in the amount. Heymans considers the ideal for special psychology to consist in setting up a character formula so that only values would have to be substituted.

Although the ideal is hardly to be reached, Heymans sets up types consisting, as we shall see later, of formal aspects of the personality. He is not concerned with the traits, but with those factors that are present in all individuals, but which vary from individual to individual, and which even vary in the same individual. He follows Ribot (178) and considers activity and emotionality as two factors present in all individuals in differing degrees, yet influencing the lives of these individuals in proportion to their presence or relative absence. The other factor used is the primary and secondary functions established by Gross (59).

Heymans in conjunction with Wiersma (68-72) carried on an investigation that is now well known. Some 3000 individuals were typed in Holland. Correlations were set up, and certain positive results were obtained. This represents a very interesting use of the questionnaire method.

#### k. Jaensch

Jaensch's work (84-94) is of tremendous importance for per-

sonality workers, yet it is unfortunately little known in America. He is considered the discoverer of eidetic imagery, and beyond that little is known. His wide research work, his philosophical discussions, his extensive influence in almost all countries testify to his importance.

He is attempting to found a philosophical anthropology on the basis of natural scientific and experimental experiences. He views the personality as a unitas multiplex in the sense of William Stern, and sets up a typology which includes both the experimental and understanding branches of psychology.

Jaensch, like all workers before him, found two types: the integrate and disintegrate. His typology is based on organismic principles. The organism is at first an undifferentiated homogeneous mass of protoplasm. There then takes place a process of differentiation and specialization. Biology has studied this process in the embryonic development and in the lower organisms (Coghill, Child, Ariëns Kappers, Tracy, and others). Jaensch begins with the small child. He found evidences of an integration of the perceptual processes. By integration is meant the undifferentiated functioning of an organism which later shows a specialization of organs. Thus, eidetic imagery is one form of the original union between the various senses, it represents a primitive state. Some individuals never specialize as far as others, and these show a closer integration of all their functions. They think, feel, experience things as a whole, rather than in highly specialized and

differentiated ways. The artist, according to Jaensch, represents this warm flow of general integration.

Jaensch has developed his typology on the basis of a scale of increasing disintegration (we prefer to say increasing specialization) of the psychophysical organism. E. Jaensch first came under the influence of his brother W. Jaensch who belonged to the medical profession. The first types thus took on a distinctly clinical connotation. The tetanoid and Basedowoid types were familiar clinical types in the medical profession. The use of calcium and also the capillary microscopy were developed by W. Jaensch (95). E. Jaensch attempted to make his typology more psychological than medical, and the frequent changes in his designations of the types has created extreme confusion in workers who have not followed his work closely and in its entirety.

Let us run through the descriptions of the types. The  $I_1$  type shows a constant and strong integration of the psychophysical organism. He is somewhat feminine and soft. He is very receptive towards the world and participates in all occurrences around him. When scientists are of this type they show an inner relation to their objects of study, an open empathy into nature, and they are especially receptive for artistic and literary works. Their emotions pass quickly. Their moods change frequently and are not bound to outer influences. They have an excellent memory, even for the small

things. They are sociable, natural, concrete, and easily satisfied.

The  $I_2$  type is more concerned with his own world. His memory is not as good, and then only for those things that are related to his own ego. He is more serious, more critical, less natural, with a tendency towards introspection. He is more abstract than the other type. He constantly shows a tendency towards integration, but only reaches it in high points in his life.

The disintegrate type lacks inner coherence with the world, he lacks empathy and artistic experience; the world is viewed objectively from certain standpoints. His motor reactions are expressionless, often forced. He is a man of duty and purpose. He even is sociable for a rational and practical purpose.

We recognize in these descriptions the eternal dichotomy of people. Jung's introvert-extravert, James' tough-minded and tender-minded, Bleuler's syntonie and schizoid, and so on. Jaensch, of course, makes a finer distinction between the extremes on the basis of his experiments. By viewing people on a continuum, the types could be greatly increased if desired. By first setting up a dichotomy, it is possible to orientate the entire field. For Jaensch the type represents merely a degree of integration which can be ascertained by suitable experiments.

## m. Heider

There is a very distinct tendency in Germany to speak of levels of structure (Schichtenstruktur). This recognizes that there is an original undifferentiated organization of the protoplasm which, due to environmental and social factors, develops in various directions. The original functions are specialized in different directions, often opposite directions, and can only be understood when studied in the light of their original association. Types represent this directional differentiation. Jaensch has elaborated this idea and men like Zietz and Werner (244) even explain apparent movement on the basis of these levels, or, as they call it, on the basis of psychophysical adequation. (See Werner, 226). Wellek (224) has attempted to show the same thing by pointing out changes in language throughout history, showing an increasing specialization from an original unity.

An attempt to establish a typology on the basis of levels of structure was made by Heider (63). Let us consider his attempt. He begins with a discussion of the four levels of structure. Consciousness is not simple, but manifold, it is a system in which are zone or circles or levels. There are different kinds of consciousness, object consciousness, condition consciousness, feeling consciousness. The question is asked: "What clearly distinguishable structural levels can be ascertained in the increasing articulation or differentiation of the psyche out of the original unity of consciousness to the

complete structural level union?"

He gives the four levels as follows:

1. Here and now. This is a shallow consciousness, undifferentiated, complete automatism between stimulus and psychic reaction. It lacks "psychic transcendence." This is taken from W. Wirth. This is the consciousness of animals and children. Heider (13) points out that this has been studied by Köhler (Nachweis einfacher Strukturfunktionen beim Schimpansen und beim Haushuhn. Abhdl. d. K. Pr. Akad. d. Wiss. Jhg. 1918, Nr. 2.), Koffka (Die Grundlagen der psychischen Entwicklung, 1921), H. Driesch, F. Krueger, and others).

This level is a totality and is not replaced by the other levels, but is drawn through them, so to speak (p. 414). It is characterized by the lack of blockages.

Level 2. Time and space. Psychic transcendence.

Level 3. The original unity is split into the ego-pole, the conscious 'individual.' Subject-object relationship.

Level 4. Awareness of the individual totality.

Heider points out that Spranger proceeded from the single psychic act, and in this way obtains the dominants. Heider wishes to go farther than Spranger.

Heider now takes up the study of the specific functions of the four levels (p. 440). Feeling is the fundamental function of the first level. He compares his use of feeling (Empfinden) with A. Messer's use of sensation (Empfindung). He calls

this the psycho-vital plane. It is the function of contact. This is an objective, passive function.

The next function of the first level is called 'psychic grasping.' Both Bergson and Koffka have alluded to this psychic grasping (psychic movement). M. Palagyi has pointed out that animals sitting still carry out in their minds the complete act of pouncing on an animal.

The next function is memory or reproduction. It gives the continuity of action.

The last function is drive.

All these functions are specialized and differentiated during the individual's life, and a study of their dominance and variation will lead to types. He considers the other three levels with their fundamental functions. This follows closely the general view held in Germany by the majority of the psychologists. The various manifestations of these levels give the type.

#### n. Kretschmer

Let us now review hurriedly some of the other systems using types. Kretschmer (125) has attracted a great deal of attention during the last ten years. His measurements of patients and the establishment of body types with their subsequent correlation with the psychoses has produced a mountain of literature during the last few years. This extreme attention which Kretschmer has drawn to himself is not entirely deserved, since

the Italians have been working diligently along the same lines for much longer. His chief importance is due to the correlation of body types and psychoses. Since this brings out the eternal dichotomy again, his work is of especial interest to characterologists. Kretschmer shared the contempt for statistical treatment of personality problems, and his results are on the borderline of not being statistically acceptable (126). It is only an added confirmation of the stand that statistical treatment has not produced the important contributions to the field of personality during the last ten years.

Kretschmer sets up his body types on the basis of the averages found from the entire group of his patients. The individual case can obscure the type, whereas the best cases represent the type. This is an explicit recognition of the variables in the personality. Kretschmer's types are not ideal types, but more or less empirical. He also looks back through history at the eternal dichotomy. As a psychiatrist his work has not advanced the theory of types.

His personality types have been arrived at by empirical data, obtained both from the clinic and from a study of normal individuals. Kretschmer sets up a continuum between his cyclothymic (circular moods) types and the cycloid (borderline to abnormality) and the circular psychosis (manic-depressive psychoses). In the same way his schizothymic type varies through the schizoid to the schizophrenic. It is an easy matter to see that these types correspond to the prevailing dichotomies without reservation.

Kretschmer has made one of the most important distinctions in this connection that has been made in personality work. He has pointed out that there are two proportions of the personality: the diathetic proportion and the psychaesthetic proportion. The diathetic proportion concerns the cyclothymic type, and ranges from exaltation to depression. This means that emotional reactions of the primary type fall along a scale which extends from depression to exaltation. They seem to represent a mixture of depression and exaltation, sometimes the one predominating, sometimes the other. This gives the emotional tone of the individual. Some individuals are heavy, retarded, tend to look on the dark side of life, have thoughts of suicide, yet they often show humor and warmth, but their usual tone is one of depression. This corresponds closely to the personality make-up of manic and depressive patients, and in normal life to the variations in the cyclothymic type. The personality worker recognizes that these variables may change, may show mixture, yet he does not look at the phenomenal aspects of the behavior, but views the variable in the light of a greater whole, namely the type. The cyclothymic types that extend down towards the more depressed pole are more inclined to like to be alone, to dislike large social gatherings, and might even respond with introverted social answers to a personality questionnaire. Just in this one fact rests the reason for the repeated failures of questionnaires based on the social attitude alone. It was always assumed by these personality workers that the extravert shows no degrees of social like or dislike,

a completely static view. The modern characterologist views the social attitude as one variable in the total personality, and it may tend one way or the other, depending on the environment, the individual experience, and on other factors. While the majority of the cyclothymic types will be fully sociable, so that we can say that they are extraverted in general, not all members of the cyclothymic type will be extraverted to the same degree. In fact, some may be more introverted than some of the schizothymic types, who may, for some reason or other, show an increased activity of the social variable. Since the types are not different in kind, i.e. there is a biological continuum, the social attitude may be considered a variable in both types, which tends to be positive in the cyclothymic type, and negative in the schizothymic type. But this does not mean that one and the same individual may not vary from time to time in his social attitude, that the introvert may be extraverted, the extravert introverted. Hence, the social attitude is a too unstable variable to be used in determining types. While the majority of people classified as cyclothymic types may actually be extraverted, this only has statistical value, not predictive value in the individual case.

Now let us turn to the psychaesthetic proportion. This proportion consists of a scale ranging from irritability to dullness. Kretschmer makes the statement: "The key to the schizoid temperaments is given to him who has clearly apprehended the fact, not that most of the schizoids are either

supersensitive or cool, but that they are supersensitive and cool at the same time, i.e. in entirely different degrees of mixture" (p. 132). Thus it is possible to find extreme sensibility in the schizothymic type which may be coupled with extreme intelligence, while at the other pole we may find dullness and extreme stupidity. Here again there is an extreme difference between two members of the same group, but they show more similarity to each other than to members of the other types.

That there is a swing between exaltation and depression in the manic-depressives, and a swing between irritability and dullness in the schizophrenics anyone can verify by spending some time in a hospital for the insane. After this has been clearly apprehended, as Kretschmer states, the personality worker will soon recognize these swings in the normal individuals with whom he has to deal. These differences are not differences in kind, but in degree and structure. There are glandular differences which determine not only the body build, but also these fundamental affective reactions.

Kretschmer, like Lewin, Stern, Rorschach and the others, has recognized the dual aspect of behavior, and his two proportions explain the apparent inconsistency between a type and its social behavior. This distinction has been brought out in many ways, but it is always there in some form.

### III. Methodology.

#### 1. Introduction

One of the most violent disagreements of the present day in psychology concerns the problem of methodology. With the cultural scientists pointing out that natural science can do nothing with the subtle differences in human behavior by means of measurement and quantitative studies, and also stressing the need of understanding the intuition as a method, with the natural scientists on the other hand crying that these men with their subjective methods are unscientific, one sees the great need of clarifying the situation. Science is knowledge, not some system, not some arbitrary standard set up by a few men. These men in declaring that the others are unscientific are using evaluative concepts, and such concepts used by the natural scientists are in direct contradiction to their own principles. This conflict is very real today, and the scientific journals are being filled more and more with articles discussing points of methodology. It has actually reached the point that any new data obtained by experimental means is of little value as long as the methodological considerations are being subjected to a constant fire of criticism. It would be useless to perform experiments on types if the methodological understanding of what is meant by types is lacking.

The need of types in psychology can be illustrated in many ways. Very interesting is Henning's (66) attack on the

law of Prägnanz. The Gestalt psychologists say that there is a tendency for subjects over a period of time to forget the unessential parts of a picture, leaving only the essential parts, i.e. the form becomes more dominant. Henning points out that experience refutes this, since not all people tend to remember or make form more dominant.

Henning conducted some experiments on 367 subjects, mostly children, using pictures and situations. He showed that there were two types: those that are bound to the pictures or situations, and those that tend to change them. These were correlated with Jaensch's integrated and disintegrated types.

This experiment is quite illustrative of a very important point. Henning points out that Gestalt psychologists have set up a law and have generalized it for all subjects without having actually attempted to study whether it holds in all cases. This is the old psychological fallacy of overgeneralization. The typologists point out that type differences are often so extreme that it might easily be possible for one group of individuals to conform to the law, the other group might not. It is unscientific to set up a law which is supposed to apply to all individuals, i.e. a generalized assumption from the results of a few cases, without having actually tested it on the wide differences found among types.

In the preceding section the attempt was made to cover the outstanding typologies of the present day in the light of their

views of types. Certain demands were made on any typology that might be formulated. It is the purpose of the present section to consider the methods by which types are ascertained, and other implications.

As we view the type, it is a requisite for any scientific methodology. The inductive collection of data is not adequate to explain and understand behavior. The natural scientist has committed a grave error of logic. M. R. Cohen (26) has pointed this out very clearly in the following illustration. Three people, x, y, z, are given a serum for pneumonia and all recover. From this it is concluded that all people will be benefited by this serum. Cohen points out that one premise has been overlooked; namely, that this induction will be true only when the individuals are typical of a class and do not belong to some special class. This means that scientists have often assumed that all individuals are the same. Psychologists have been especially prone to commit this fallacy, and when individuals differed they were ruled out as poor subjects.

The significance of this for psychology is that experiments conducted for the purpose of collecting data will not have validity when applied to life because the one premise is missing. Until it is known whether the subjects used belonged to the same type, i.e. were typical of a particular class, no conclusions can be drawn as to whether the data will apply to all individuals. The idea of the uniformity of nature has strengthened the tendency to overlook classes or types.

We can state then that experimental data will have little value for life unless it is known whether the individuals used were typical of the entire species, or fall into special classes or types. This applies equally well for old and new psychology. It is simply a methodological procedure, not a theoretical consideration.

Cohen has also made a very interesting point in connection with scientific methodology. He has pointed out that the scientist does not proceed from the collection of particular data to the setting up of universal laws, e.e. by a process of induction, but works both from the particular and from the universal at the same time. As the universal becomes more firmly established by the detailed data obtained by scientific research, the data also become more significant in the light of the universal. This is a process of working both sides of the method at the same time. This agrees with the point we made in the preceding section that types based only on induction are inadequate. We must also have the concept of a type as a universal, then the collection of data will strengthen this type, and the data will become significant in the light of the type.

One other point of extreme importance in methodology is the question of relations. We have seen that all the cultural scientists have been stressing the point that without relations there can be no understanding. It has been pointed out ad nauseum that quantitative studies have not contributed to an understanding of the subtle differences in life. These studies

have contributed to the mechanics of the processes involved, but have not been able to throw much light on the other more vital problems. It has been pointed out quite frequently that the reason for this is that the total situation has been neglected, the relations have been lost through the measurements and analyses.

How is it possible then to approach these more subtle problems? As an illustration let us consider body build. Can we reduce a total body structure to mathematical measurements? We find from a perusal of the literature that all such attempts have resulted more or less in failure. Why is this? The answer is very simple. It is of far less importance to know how tall a man is, how great the thoracic circumference, the trunk and limb lengths, than to know how these are all related when viewed as a whole. The actual height of a forehead is of far less value than its relation to the total face picture. What good are quantitative measures when they do not express relations?

Does this mean that such a reduction to quantitative measures is impossible? Is intuition (the perception of a whole) the only possible method? Judging from the present results, the answer must be that far more understanding has been obtained by intuition than by quantitative measures. But intuition is highly subjective and will never satisfy the scientific mind completely.

We must now consider how to get around the difficulties. This problem has received much attention from scientists and logicians. The Viennese school of neo-positivists has pointed out some of these difficulties, and has made a very decisive step in overcoming them. They recognize, as have the characterologists, that there are two aspects to behavior, that there are two aspects to every event. In characterology these two aspects are called the phenomenal and structural manifestations. In philosophy and logic they are called the formal and contential aspects. Carnap (22) has even gone so far as to suggest the transposing of all science into formal and contential language. Formal language will be transposable into other branches of science. The contential language will only be understandable to the science in question. He views physics as the one science which will furnish this universal or formal language. Others have suggested mathematics.

We can ask why there are two aspects and why there is a difference between the form and contents of either behavior or physical event. The answer is that in the form is contained the relations, in the contents these are lacking. In logic we have the form and contents of thought. The form is the same, the contents vary. We can know the form without knowing the contents, and we can know the contents without knowing the form. The syllogism represents a form of thought, what makes up the <sup>S</sup> syllogism represents the contents. We can vary the contents quite radically without changing the form.

Spranger, Carnap, and many others have pointed out that only formal data can be universal. Meaning, which is composed of relations or form, is transmitted as a whole, not by a quantitative study of parts. We can thus grasp form as a whole (intuition), whereas the contents measured and separated from the whole have no meaning. The very essence of meaning consists in this formal aspect. Things must have form or they have no meaning, they are chaotic.

The significance of this for characterology is that we must study the formal aspects of the behavior in order to obtain meaning. This excludes statistical studies, quantitative measures, and the inductive collection of data when we are after meaning or relations. We are not placing an evaluation on the methods, but merely pointing out that the formal approach gives meaning because it represents the totality of the event, the second method does not give meaning because it gives accurate quantitative measures of the contents of that event. Both methods are necessary in science, and in reality inseparable. We are considering them apart for practical reasons only, and there will be a transition from one to the other. In typology the emphasis is placed primarily on the form as opposed to the contents. This avoids confusion in the collection of data. The desire of the organismic school is to make science a unitary whole. Carnap and the neopositivists are making the distinction of form and contents, which will aid in classifying data, and thus in making comparative studies possible.

In obtaining criteria for types, then, we must deal not with quantities, not with how much of something an individual has, but with the relations of many attributes within a total field. The relationship of the parts gives the clew to the type, not the quantity of these parts. Sigwart (203) many years ago brought this out with great clarity (pp. 406-407):

If understanding of the particular can only be gained by first seeing clearly the larger and more widespread connections which are present in the comprehending consciousness, if the only safe starting point for psychological investigation is a general survey of the whole constitution of developed consciousness, it follows that the direct observation of particular events, and more especially the experimental methods, however much they may contribute to accuracy and precision, can yet have only a subordinate importance in this department. They can never give us more than fragments, nor directly determine the conditions given in the particular case, since amongst them are included habits of thought and will which do not enter as such into consciousness: they presuppose, if they are to be of any service at all, these comprehensive views, and their results so far have done, perhaps, more to show the extent of differences between individuals than to teach us any general uniformity. This is itself a service; and beyond this they are important as enabling us to support or verify hypotheses which, starting from the whole of our present life, we form concerning its gradual growth. But from the fragmentary elements which alone they can give us, we are unable to construct the whole.

Another very excellent statement of the same problem is found in Jevons (96, p. 53):

There is little use in obtaining exact measurements of an effect unless we can also exactly measure the conditions with which the effect is to be connected. It is absurd to measure the electrical resistance of a piece of metal, its elasticity, tenacity, density, or other physical qualities, if these vary in degree, not only with the minute and almost inappreciable impurities of the metal, but also with its physical condition. If the same bar changes its properties by being heated and cooled, and we cannot exactly define the state in which it is at any moment, our care in measuring will be wasted, because it can lead to no law. It is of little use to determine very exactly the electric conductivity of carbon, which as graphite or gas carbon conducts like a metal, as diamond is almost a

non-conductor, and in several other forms possesses variable and intermediate powers of conduction. It will be of use only for immediate practical applications. Before measuring these we ought to have something to measure of which the conditions are capable of exact definition, and to which at a future time we or others can recur. Similarly the accuracy of our measurement need not much surpass the accuracy with which we can define the conditions of the object treated.

This definition to which others can recur at some future time reminds us of the present problem. Today we see that it is the type or form which gives meaning to the contents which are measured. By reproducing the form, a comparison of measurements can be made.

Wheeler (229) has expressed the same in modern form in his law of derived properties. He states that a trait of character derives its properties from the total personality. A trait in one child means quite a different thing from the same trait in another child, for the total personalities<sup>2</sup> are different. "Therefore, the differentiated traits must be studied in their relation to the wholes of which they are parts." From this it follows that it would do no good to study a trait, to measure it, to reduce it to a mathematical formula, since the same trait means something entirely different in another individual.

The function of the type then is to give meaning to quantitative data obtained. The type itself is not obtained by quantitative data, since it is an expression of relationships, not of quantitative amounts. The type is a Gestalt, a form, a whole, a configuration, and an attempt to analyze it and

measure it will be the same as studying the parts out of relation to the whole. This is in agreement with Gestalt principles, with organismic and even the cultural sciences. It does not deny, however, that measurements of parts can be made and that these will be of value, but it points out that in order to have meaning, insight, understanding, we must know the relationships, not the quantities of the parts.

The type is a device for tabulating certain structures, certain personality configurations, so that some one else can repeat an experiment under the same conditions. As Jevons stated, it is a definition of conditions to which others can recut. As was pointed out in the first section, the type is not entirely within the organism, it is not entirely without, and it is present also as dynamic change.

Wheeler (232) expresses the relationships in terms of laws. The law furnishes the basis of comparison and also of study. This places the laws at the basis of both behavior and methodology. As applied to the personality they follow closely the organismic point of view, which places emphasis on wholes and relationships, the prerequisites for understanding. The laws are really corollaries of these two principles, or perhaps of the one principle of wholes. The previous discussion merely illustrates the problems that have led to the setting up of these laws. They cannot be disproved or proved, since they start from one principle, namely, that the whole represents an organization. If this is denied, a very improbable

thing, the laws are no longer valid. If it is admitted, the laws follow of necessity.

Let us see whether types would be possible from the organismic point of view. They are certainly impossible if they are considered statically. If they are viewed as dynamic patterns, there is no reason why the organismic point of view cannot accept the points just made. The type, as expounded here, represents a continuum within a field. This leaves the entire question of potentials, gradients of energy, field properties, and so on open to investigation. The type merely furnishes the conditions under which a certain reaction takes place. It represents a general empirical pattern that repeats itself again and again in life. Individuals constantly group themselves together on the basis of certain behavior patterns, and while there are no sharp boundary lines between them, they can be compared better when taken in these groups than when taken without regard for their obvious differences. The laws are just as applicable. As was stated before, it is not a question of theory but one of methodology.

Since these laws illustrate admirably many of the points made in the previous section, it might be well to quote them in full. These are the laws as applied especially to the personality (231, pp. 237-238):

1. The law of field properties. Before the child's personality can be understood it must be observed as a whole in the complex life situation in which it is found. Personality

possesses a field property or form of its own which is called in everyday language by the name of individuality. Individuality, then, is the property of the whole over and above its parts. The parts are traits of character, taken separately.

2. The law of derived properties. Each trait of character derives its properties from the total personality. A trait in one child means quite a different thing from the same trait in another child, for the total personalities are different. Therefore, the differentiated traits must be studied in their relation to the wholes of which they are parts.

3. The law of determined action. When seen as a segregated whole, the total personality determines the nature and value of each individual trait. In turn the total personality must be seen in terms of the social whole of which it is a part, for it is that social whole - the human nature-pattern that surrounds the individual - that determines the nature of the individual personality. The individual personality is an adjustment to the types of personality around it and to the demands which these personalities make upon it.

4. The law of individuation. Particular traits of character emerge from a primary, undifferentiated, and nondescript personality. Each trait is related to all the others as it emerges. The several traits emerge together. In turn, the personality as a whole individuates from a field of human nature that we call society.

5. The law of field genesis. The child's personality evolves as a whole. It is an expanding, differentiating total pattern.

The pattern is not a bundle of so many separate traits; it is not a whole constructed out of parts, it is all 'one piece' from the beginning to the end.

6. The law of least action. The child's personality is constantly striving towards the goal of balance or equilibrium. It demands harmony within itself and between itself and its social environment. Each trait that develops is a process of resolving a state of disequilibrium; each act carried out is a process of resolving tensions induced by social environment. One trait develops in the course of balancing another.

7. The law of maximum work. A trait of character never changes without a change in the total personality. Correcting an undesirable trait is a process of readjusting the personality as a whole; all other traits undergo a change at the same time. Similarly, when a given trait is induced, or when it is improved, the total personality is changed. The effect of strengthening or diminishing a particular trait can be observed in changes that occur in all other traits.

8. The law of configuration. The effect that corrective measures will have upon a given trait depends upon the extent to which all other influences are affecting the personality. In other words, the personality never responds to an isolated influence. It responds to that influence in its relation to all the others that are exerting an effect at the same time. There is no one to one correspondence between a particular outside influence on the personality and the change going on within the

personality. Each change that the personality undergoes can be understood only in the light of a total situation.

At the close we must consider the methodology used by the typologist. We have already given in the summary of the preceding section some of the fundamental points for all typology. Let us repeat these in a more specific manner.

Types gained from empirical data are not adequate, but a jump is made between the actual data and the ideal type, which is more perfect in the mind of the investigator than it is in the majority of cases in nature. Thus, only a few people illustrate the type. From the discussion we have found that this jump has been made, and we have the dichotomies cited there which are very similar in their descriptions. We shall discuss in a following section the types used in this work. For the present we can say that the prevailing dichotomies have been identified with one dichotomy which we call primary and secondary types. Thus we find that the following groups run throughout the history of typology:

1. primary type	secondary type
2. extravert (Jung)	introvert
3. cyclothyme (Kretschmer)	schizothyme
4. integrate (Jaensch)	disintegrate
5. tough-minded (James)	tender-minded
6. romantic (Ostwald)	classical
7. objective (Stern)	subjective
8. hypoevolute (Pende)	hyperevolute
9. macrosplanchnic (Viola)	microsplanchnic
10. pyknic (Kretschmer)	asthenic (leptosome)

TABLE I

Comparison of dichotomies of personality types.

The terms 'primary' and 'secondary' types will be used interchangeably with other dichotomies.

Data collected then for use by the typologists cannot be treated in the same quantitative objective way as is done in natural science if there is any desire for meaning or understanding of the personality. Statistical results are of extreme interest in studying the types, and statistical treatment of the various tests will be given in this work. But in the light of organismic principles, these quantified data cannot be used in reconstructing the whole.

Since the type is not located entirely within the organism, we cannot rely on quantitative measures for determining the degree of presence of a type. In fact, this sort of method is a reductio ad absurdum of the scientific method. So much of the type transcends the objective data that quantifying the results will only lead to failure.

Accurate measures can and must be made, however, since we are considering the type as a partially unfolding plan within the organism. To this extent quantitative measures must be made and will give insight, especially for comparative study, into these plans.

In closing, <sup>it</sup> must be said that the one-sided insistence for data of a certain kind with the exclusion of all other is hardly in line with the development of knowledge. Subjective data has been condemned, in many cases, justly, but if progress can be

made by the use of subjective data, there is no scientific justification for its exclusion.

It is emphatically denied that subjective data is used in this work in the ordinary sense of the word. The method is actually far more objective than some of the so-called objective tests. It presupposes, as does any accurate technique, considerable training. That a 18-year old freshman cannot learn the technique in two hours of study is no justification for considering it subjective. Results are comparable when made by trained observers, as is the case in all sciences. They are not comparable when made by inexperienced people. The mental testers have simplified their tests to the point that any one can give them after a short study. They tend to condemn other tests that require experience on the part of the tester. Since the experienced tester can do so much more, even with these simplified tests, there is not much room left for argument about the matter. The present technique is not considered, therefore, as a difficult method, but it is difficult enough to require more training and more maturity than the usual psychometric test tries to require. It is not designed for general school work, so that any school marm can type her pupils, but it is for the specialist in the field of personality work. This limitation of the test will explain the writer's insistence on training, both in giving and understanding the technique.

## 2. Primary and Secondary Types.

It is now necessary to state clearly the nature of the types used in this work. The writer has introduced the terms 'primary' and 'secondary' types (M.A. Thesis, University of Kansas, 1932) to replace the other dichotomies. This means that a typical extravert is the same as a typical primary type, without considering the distinction as resting entirely on the libido. The integrate types of Jaensch are included in the primary type in this work. Kretschmer's cyclothymic type corresponds to the primary, and his schizothymic corresponds to the secondary.

The terms 'primary' and 'secondary' were taken from O. Gross' book on the "Cerebral Secondary Function" (59). Gross differentiated the activities of the nervous system, pointing out that the primary function of the nervous system was an immediate reaction without an after-effect. This would lead to chaotic thought (flight of ideas in the manic-depressive) if there were not some after-effect in the nervous system. This he considered to be a part of the metabolism of the cells. The secondary function is the after-effect, and its increase would lead to such a condition as found in schizophrenia.

Whether this is true of the nervous system or not, Gross did describe the behavior of what we call the primary and secondary types, and it seems to correlate closely with all

the other dichotomies. The names were thus extended to included types. Roback (180), Jung (103), and Heymans (72) have all used the concept of the secondary function.

As has already been emphasized, the dichotomies have been obtained by various means, and any confusion surrounding them arises not from the empirical facts, but from the difference in the descriptions and methodologies used. For this reason it was considered expedient to retain the empirical findings, but at the same time to use a nomenclature that would include all the dichotomies. It was for this purpose that the terms 'primary' and 'secondary' types were substituted for these other terms.

Let us now consider the theoretical side of these types. The baby represents the potentialities of development. Sex, personality differences, perceptions, motor activities, and other forms of behavior are only in their structural potential condition in the baby. The baby develops throughout its life and either elongates to six feet six, or remains within the normal height of human individuals. Its personality appears, its sex becomes more pronounced, its motor reactions become more specialized.

Just as in all other phenomena of nature, some individuals will show less specialization, others more. It can be assumed almost without argument that we shall obtain a scale of development from less specialized to highly specialized individuals, with the majority of people falling into a middle group. Lévy-

Bruhl (135), Boas (14), Gesell (53-54), Irwin (80-83), Piaget (172-173), Koffka (115), and many others have made studies on the developing and specializing human organism. This has been supported in biology by works of Child (23), Coghill (24-25), Kappers (104), Tracy (215), and others. Biologists such as Ritter (179), Bertalanffy (8), Woodger (241), and others have taken up this problem with especial interest. This movement is best represented in psychology by Wheeler (229-232), Koffka (115), Jaensch (84-94), and others. Wheeler (229) in recognition of the undifferentiated state of the organism at birth and the increasing development throughout life has completely reversed his textbook of psychology, and has placed the usual introductory chapters of academic psychology, which treat of the nervous system and sensations, at the end, and the usual final chapters of academic psychology, which treat of social behavior, at the beginning, thereby completely revolutionizing the point of view. This is supported by Jaensch's claim that the perceptions and ideas are not the elements of consciousness, but are the final products of a long period of development. Jaensch has made a study of the development on the basis of experiments, and has established his types on the degree of differentiation of the organism. Wheeler developed laws which express the relationships and necessary corollaries of development. Coghill (24) has stated definitely that integration is the primary condition, and reflexes and other reactions of the organism, formerly thought to be the elements of behavior, are individuations within a total pat-

tern. Wheeler has included this under his law of field genesis.

There is little difference in the fundamental ideas of the men, although there is a difference in emphasis in their systems. Those interested in personality work tend to base types on this new aspect of organismic biology. Perhaps at no time in the past has biology and characterology been so close together.

Jaensch represents the most complete typology, but in criticism we must say that it is narrowed down to the study of perceptual development of the psychophysical organism. The wide work in psychomotor reactions is not included, although there is no reason why it could not be incorporated in such a typology as developed by Jaensch.

We can say then that a typology, to be biologically valuable, must be based on the increasing development of the organism. The theoretical and experimental basis for this determination of types is of next importance. While the existing typologies have all arisen from different points of view and by means of different experimental data, their close similarity makes it possible to include all of them in one grand scheme of development. Any method whatever that throws light on the specialization of the organism in question will be valuable in determining the type.

Let us consider the development of types. The original harmony, or integration of the processes, leads to an easier

flow of the emotions. The more specialized the organism becomes, the more the emotions are subordinated to the higher mental processes. At the extreme pole, we find individuals who show little emotion, and that only in jerks. They cannot go easily from one state to the other, and they seem to get mixed in the direction of their emotional behavior so that they laugh when they should cry and cry when they should laugh. Bleuler (12) has explained this by the ambivalence of the emotions. This inability to flow back and forth between two poles of emotional behavior is due to the highly differentiated condition of the organism, to the increased disintegration of the psychophysical organism (Jaensch). Any jerkiness in the emotions, any inconsistency in the behavior would indicate this advanced behavior. Just as the reference from White (see pl 11, Sec. II) has pointed out that the differential diagnosis between manic-depressive psychosis depressed form and depressed schizophrenia rests in the jerkiness, the incoherence, the lack of easy flow of the emotional reactions.

The body build naturally tends to be in harmony. If there are two fundamental tendencies, as Viola (p. ) has pointed out, the more the elongation and the width of the organism are in harmony, the more the individual will retain his roundness. The pyknic type of Kretschmer represents this harmony, and we can speak of the primary type of body build as corresponding to this general tendency towards symmetry and harmony of the whole, although there may be some dissymmetry of the parts.

Bleuler has called this type the syntonic type because of the harmony. The more the body tends to elongate, the more the one tendency seems to predominate. This indicates increasing specialization towards the secondary type. This is why schizophrenia, certain personality configurations and the body build, all tend to occur together. As was found in this work, they do not necessarily have to occur together, and there can even be crossing, as reported by Munz (157) and almost everyone who has worked with body types.

One deviation from the general idea was brought out in the experimental part of this work. It was found that the mixed type shaded off from the primary on the one end, and into the secondary on the other. The body build thus did not represent a sharp division between the three types, but shows a gradual transition from one to the other. This brought about the condition that some mixed types showed excellent pyknic body types, and other mixed types showed perfect asthenic builds. From the diagnostic side this means that the body build alone will not differentiate the types. There will be a very definite tendency for primary types to have pyknic builds and secondary types to have asthenic builds, but the mixed group will show both types of build. In any case, the understanding of the personality of the individual, aside from his personality type, will be aided greatly by the type of body build which he possesses. We could never speak of a pure primary type who was shading off into an asthenic build. He

would show this difference very decidedly in his behavior.

Now let us consider the following diagram.



Figure 1.

Psychophysical development.

Everyone will fall some place on the scale, and the arbitrary divisions into primary, mixed and secondary types merely locate the individual on this scale. At first this will be a rough localization, but in time more and more accurate means will no doubt be developed in order to ascertain where the individual is located. These means may come from biology as well as from psychology.

An individual at a will differ from an individual at b, but both will be included in the same type, and both will differ from an individual at c who in his turn differs from one at d. This difference within the type is confusing to the older psychologists, especially the atomistic schools, where there is a tendency to view things as fixed, and such differences as these within a type would be used by them to disprove the theory of types in general. As has been pointed out,

the type is merely a label, and when we say an individual is a primary type, we mean that he falls some place between two limits, not that he is some fixed pattern which is exactly or almost exactly the same as every other primary type. These divisions are arbitrary, yet they are not pure fantasmogoria; for they have been established by centuries of empirical knowledge. Perhaps there has never been the clear division into mixed types, as has been perfected in this work, but the two general classes have been described again and again.

The fact that the mixed type has appeared so clearly in this work has tempted the writer to consider it as a subject in itself, and its title might have been "The Psychology of the Mixed Type."

We must consider some of these points, since they are the most outstanding contribution contained in this work. The borderlines between the primary and mixed, and the mixed and secondary are not fixed static lines. There is every reason to believe that different workers would locate individuals differently when they fall in this group. But this confusion would not be great, and a personal error might be calculated for each individual. This would be a small matter in any case, since when there is doubt about whether an individual falls into one group or the other, the fact remains that he is a borderline case and can be treated as such.

Now let us characterize the mixed type. As the individ-

ual progresses from the primary type into the mixed, we find him carrying over not only the body build, but also the personality make-up of the primary type. (For an expression of this, see Heider (63) in Section II). Some of these individuals who test mixed by the present technique could hardly be distinguished from the primary type. They will show a primary type of emotion, and will show little inhibition and jerkiness so characteristic of the secondary type.

Now when these individuals are blocked, they will show a type of behavior very similar to that of the hysteric. Psychiatrists often find it extremely difficult to distinguish in these individuals between hysteria and light attacks of mania. Both show outbursts of emotion, a tendency to destroy, and so on. It is also in this group that one finds split personalities. These are individuals who split into two or more personalities that exist side by side. It would seem that with an increase in the secondary function there goes a tendency to split. When the split occurs at this point on the scale the individual actually splits and lives two lives. Later the individual seems to make his adaptation, and splitting takes the form of a flight from reality without the formation of two separate personalities.

This split in the personality is the most outstanding part of the mixed type. This is especially prominent in the behavior of the individuals. Since the emotional component is more primary, these individuals may lead highly dissipated

lives. But they can go from the gutter into the finest environment without feeling any inner conflict at all. This might be called 'systematization' of the mixed type. They systematize their lives into separate compartments, instead of splitting into several personalities. This systematization can be in science, when systems are set up and defended against any arguments or logic from without, or can be in religion, or any other field of thought. When these systematizations become too rigid, the individual comes in conflict with his environment, and he is confined with the diagnosis paranoia. This represents a gradual transition from normal conditions to abnormal.

Since the emotional components of the individual are now coming in conflict with the higher specialized secondary function, we shall expect to find all kinds of conflicts, aberrations, sexually and otherwise, paradoxical behavior, eccentricities, and so on. The mixed type thus represents a possibility of all kinds of conflicts and deviations from the normal. It is characterized principally by the extremes in the behavior. The normal primary type shows a certain limit of fluctuation, but the mixed type will show a far greater one. The mixed type will show the greatest possible extremes in behavior, all existing side by side.

This view of the mixed type is not fabricated out of thin air, but is based not only on experience, but also on findings by other men. In the description of the neurotic personality

as given by Adler (1 - 2), Wechsler (221), and others, we find all these characteristics of the mixed type. The feeling of inferiority shading off into a delusion of persecution on the one hand, the feeling of superiority shading off into a delusion of grandeur on the other, are both highly characteristic of most members of the mixed type. The delusion of reference is one aspect of this peculiar personality make-up (see Kretschmer (124)). The prevalence of homosexuality or homosexual tendencies are highly characteristic of this group.

From this it is seen that such wide extremes as intense religious feelings and the very depths of vice can both be found in the mixed type. Both can be explained in the same way. Phenomenally the behavior is diametrically opposed, genetical-structurally it is the same. This is also the type that the Freudians find most amenable to psychoanalysis.

Now let us consider some of the literature bearing on the above theory. The writer unfortunately has not had opportunity to test many epileptics. Those with whom he did come in contact showed all signs of being mixed types. Descriptions of the epileptic personality such as Rosanoff gives (187) is only a repetition of our description of the mixed type.

Maeder (149) has pointed out that epileptics are very erotic and show every conceivable direction and means of sexual gratification. They are very often hypochondriacal. They all have definite homosexual tendencies. They show such infantile forms of sexuality as exhibitionism, coprophilia,

masochism, etc. An outstanding example of this type is the Russian Dostoyevsky. All these characteristics belong to the mixed type.

Kreyenberg (127) has made a study of 700 cases of epilepsy. His findings are of extreme importance. Below is the result of his correlations with body build:

	men (500)		women (200)	
pyknic	17	3.4%	0	0
leptosome	58	11.6%	30	15%
athletic	161	32.2%	64	32%
leptosome-athletic	43	8.6%	12	6%
dysplastic	221	44.2%	94	47%

TABLE II

Kreyenberg's correlations of body build and epilepsy.

These figures show a very decided tendency for the epileptics to fall into the athletic, athletic-leptosome, and dysplastic groups. Since the athletic type is generally recognized as a mixed type, this is added proof of the general personality make-up of the mixed type. The extremes in epilepsy are little different from those found in normal individuals. There is lacking the direct pathological conditions, but the personality make-up is so distinct that people may show it who never show any signs of epilepsy. Rosonoff (187) has made this one of his clinical types, and Moxon (155) has shown this personality type among historical characters.

When we consider the psychoneurotics, the paranoids, the epileptics, the homosexuals and the hebephrenics (to be discussed presently) in the mixed group, we find that in normal life there are individuals showing all these traits in a milder form.

When we turn to the behavior of the hebephrenics, we find that they show very infantile forms of behavior, often with fairly good intelligence in life. They grimace, have mannerisms, show all kinds of bizzarre and fantastic behavior. When we turn to representatives of the normal mixed type we find exactly the same thing. We can find men with good intelligence and education often showing a foolishness in behavior in direct variance to their conduct on other occasions. They may show grimaces, often screwing up an eyebrow, or other mannerisms. We find far more mannerisms as a whole in this group than in any other. They are prone to strike poses, often being quite dramatic in their manner. We might look on this as one reason why paranoids very often show the same tendency to strike poses, and who would better give them an example than Napoleon who was suspected of being an epileptic personality (see Lombroso(140) and others.).

Thus we find in the mixed type all forms found in these general classes of abnormalities. Since the primary type seems more closely associated with the least complicated psychosis, viz. manic-depressive psychosis, and the secondary with schizophrenia, the mixed type represents the most varying types of

behavior and abnormalities. The most severe psychotic condition is paranoia, the most severe disease is epilepsy, and the most severe organic disturbance with paranoid personalities is paresis.

The technique used in this work has made it possible to isolate the mixed type with a degree of accuracy that was not possible using the prevailing tests. Since not all of the mixed types belong to the athletic type, it was extremely difficult in the past to determine the borderline cases. In the present work almost all individuals six feet tall or more in height were mixed types.

In the first sections it was pointed out that the phenomenal behavior of individuals may be different, whereas the structural basis may be the same. The mixed type presents this condition almost in exaggeration. Those who doubt types because one individual is highly religious, the other is a psychopathic personality who can make no moral adaptation, have not yet been trained to think structurally (configurationally), as Spranger states. The soil for these varied manifestations is quite fertile, and whether beans, corn, or wheat come out of the soil is immaterial. It is not by studying the produce from a soil that we arrive at a history and knowledge of the soil, but by studying the soil itself. We must study the underlying mixture of tendencies and functions in the mixed type, rather than the phenomenal behavior as has been done in the past.

Such work as has been done by Luria (143-144) is a step in this direction. Luria failed in our eyes because he had no way of determining the mixed type. His two types, the stabile and labile, do not correspond to the primary and secondary types of this work. As we have just seen, the primary type is stable at the affective level which we consider more primitive (cf. the vegetative type of the French). As the secondary function increases the individual shows more and more conflict. As he goes over into the secondary he shows less conflict because he is living at a higher level (cf. the cerebral type of the French). The conflict type is the mixed type, and we should expect that there would be greater variation in this type than in the primary and secondary types. This would then correspond to Luria's labile type, whereas both the primary and secondary types would correspond to his stable type. This shows the need of setting up a more inclusive typology in all psychological work.

It will be noticed that the ordinary traits of character and the older faculties have been left entirely out of consideration. Intelligence, for instance, does not enter in as a measure of difference between the types. All types can be intelligent, all types can be quite stupid. Intelligence does not necessarily go with biological specialization. This is using the word 'intelligence' in much the same way as the mental testers use it. If we consider intelligence as biological adaptation and specialization, we should find the highest specialized individuals among the secondary types. But since in-

telligence has a social evaluation, it is possible to find secondary types in the insane asylum. This does not mean that they are not highly specialized, but society puts a negative evaluation on them, the so-called bionegative evaluation of Lange-Eichbaum (134).

### 3. Practical use of Types.

We have pointed out that there is a close association between the type of personality and the psychoses. Types would thus aid the clinician in locating the individual on a biological scale of development, and from this position in understanding what to do with the individual. Overt behavior would thus be discounted, case histories and the very questionable methods associated with the reports of others about an individual would be eliminated. The true position of the individual might be at variance with his phenomenal behavior, and the trouble might be due to this conflict, not to other things. This is the chief advantage of the typology in clinical work.

As modern typology began to develop, criminals were studied on the basis of types. It was found by V. Rohden (183) that on the basis of the Kretschmer types criminals fell into definite groups of crime. The correlation between temperament and crime was found as follows:

1. Higher percentage of crimes among schizothemes than among cyclothemes. (60% schizophrenics and 4% manic-depressives).
2. Relative in frequency of beggars and crimes against the rights of property among the cyclothemes.
3. Relative frequency of incendiaries and emotional crimes (homicide and moral crimes) among the cyclothemes.
4. In general, the schizothemes show more social crimes, while the cyclothemes show more emotional crimes.

From the present study this work shows some flaws. There

is complete agreement between the primary type and emotional crimes. This is merely a manifestation of the emotional nature of this type. But the secondary type does not necessarily correspond to the schizotheme as studied by Rohden. He no doubt, on the basis of body build alone, included a good percentage of what we call the mixed type. This type also includes the psychopathic personality, and the higher number of social crimes, or the inability to adapt to the social environment, is quite characteristic of the mixed type. Downey (35) has also found correlation between her rapid-fire subjects and the primary type.

Thomas (214) has probably given one of the best psychological discussions of the criminal on the basis of typology that has been written. He points out the same relationship between the emotion of the primary types and the emotional crimes.

J. Gross (51) has gone into the psychology of testimony in children, and has brought this in line with the Jaensch types.

In the field of education types are playing more and more a role. The literature has become so extensive that only a brief survey of the most important work can be given. Schumacher (197) has shown that there is a correlation between the excellence in theme writing and the integrate (primary) type in children. Liefmann (138) has made investigations on

the relation of body build to school performance. Pfahler (170) has attempted to establish a complete pedagogical typology. An extremely interesting experiment was performed by Bonte (15) on suggestibility and the reports of the types. This has not only a pedagogical significance, but also is important in the testimonials of children in court. Such a case as reported by Busemann (21) is an illustration of what role types can play in court room procedure. Krasusky (122) has made an elaborate study of the personality reactions of preschool and school children. Work by Scholl (194-196), D. Katz (105), E. Stern (206), Rombach (184) Lopfe (142) and others shows the differences between children in simple perception as well as in their personality reactions. The elaborate experiments of Kroh (129-130) and others is highly stimulating for a more thorough investigation of types in education.

The inclusion of studies of profession on the basis of types is another step, and may lead to a better understanding of vocational guidance than now exists. The examination of medical men by Briedé (18), of artists of various kinds by Pannenberg (165-167), gives an example of what can be done in this direction. Kroh (128) has made a study of eidetics among German poets, and K. Gross (58) has given a very interesting analysis of Jack London in respect to eidetic imagery.

The practical use for medicine cannot be too highly appreciated. Draper (36, 37), Pende (169), and others have brought out quite interesting correlations between body structure and

disease. Kretschmer (125) and the men who have followed his work have shown almost in every case correlations between body build and the psychoses. Work done on blood groups with the attempt to correlate temperament with these groups by Furukawa (51) shows farther possibility of making even further studies in the field of types and medicine. The effect of chemicals on the personality, such as sodium amytal, has opened new possibilities of a biochemical approach to the study of personality types.

We see, therefore, that the use of types is a methodological advance in the scientific method. They also furnish a practical means of understanding human behavior, and of making comparative studies possible.

#### 4. Psychomotor Reactions.

##### a. Review of Literature

One of the most important indices of the internal structure is the psychomotor reaction. The increasing specialization of the type brings with it a finer differentiation of the various movements carried out by that type. When we refer to Spranger's statement that the theoretical man is never the man of action, we see that with increasing mental specialization goes an increasing inability to act. This leads in schizophrenia to blockage and complete inability to move.

Let us summarize the literature showing differences in the psychomotor reactions. Enke (43) reports that the leptosomes and athletic types have a greater ability to split their attention. They cannot go easily from fixed attention to some other form, they have therefore a greater perseveration. The pyknics can go easily from one thing to another, i.e. shift their attention. He states that the leptosomes tend towards systematizing, abstracting and theoretical thinking, and show an analytical attention. Very important, he points out, is that the pyknics are very sensitive to color.

Enke and Heising (42) showed that the ability to complete several attention series at the same time was connected with the splitting of attention. They found that the leptosomes could retain more division series of geometrical figures than

the pyknics. The pyknics showed the tendency to project fantasy products into the forms. This is connected with the well-known fact that pyknics tend to enliven their environment, since they themselves are overflowing with life and show close coherence with the environment.

Another series of experiments was made by Enke (44) on the motility of the Kretschmer types. The experiment consisted in letting the types tap on a metal plate. It was found that the pyknics tapped faster when they were allowed to wander around on the plate with the stylus than when they were required to tap in one place. The leptosomes and the athletics showed little difference. Since van der Horst (75), and Kibler (106) performed the experiment with normal tapping, a comparison of their results can be given:

	pyknic	leptosome	athletic
van der Horst	12	27	-
Kibler	11.7	16.4	-
Enke	12.8	28.1	22.8

Table 3. A comparison of the results of van der Horst, Kibler, and Enke.

It can be seen that Enke's results agree with those of van der Horst more closely than with those of Kibler. It can also be seen that there is a general tendency for the leptosomes to tap faster than the pyknics.

Enke next required the types to count with a metronome. It was found that the leptosomes and athletics showed poor adaptability, especially with the timing of their breathing, they tended to get out of breath. The pyknics adapted themselves immediately. It was also found that the leptosomes counted too fast.

One other part of this experiment consisted in using an ergograph and turning a color wheel at the same time for 30 seconds. The subject was then required to add 20 single figures in his head. It was found that the pyknics showed an increase in speed with distraction, while the leptosomes remained the same.

A very interesting experiment was performed by Enke (43). 133 subjects were used with a tremometer. The subjects had to trace a figure at their normal speed. Every contact with the sides was recorded by means of an electrical counter. It was found that the leptosomes made the fewest mistakes in the shortest time. The pyknics came next, and the athletics were last. This shows that the leptosomes were more capable of finer movements than the others.

Van der Horst (75) has conducted some very elaborate experiments on the Kretschmer types. A small plate was pressed down by means of the fingers, and the electrical contact was recorded on a kymograph. It was found that the schizophrenics were faster than the circulars. Among the normal leptosomes it was found that they ranged from 23-29, the average being

27 in 10 secs. The pyknics showed an average speed of 12, but two cases were excluded who showed a speed of 41 and 36 respectively.

Some very interesting work has been done by Luria (143). Luria found two types, the labile and stable, when their emotional reactions were studied by means of a delicate recording device attached to their hands. His selection of extreme cases bordering on the abnormal on the one hand, and normal on the other tends to cloud his results.

Of extreme importance is an elaborate piece of work done in Moscow in the Psychoneurological Clinic for Children under the direction of M. O. Gurewitsch. This work was done by Jislin (97), who studied the handwriting of the Kretschmer types. Let us list some of the characteristics:

Pyknic:

1. Every word forms a flowing totality.
2. The letters are rounded.
3. There is a normal slant to the writing.
4. The general impression of the handwriting is lightness, flow.
5. Micrography is not found.

Asthenic:

1. Splitting of words.
2. When words are united it is not the flowing union of the pyknic, but a peculiar union.
3. Unevenness and irregularity of the letters in size, form, and slant.
4. No rounded letters, but sharp pointed letters.
5. When evenness and roundness are found, one has the impression that much effort was used.

6. Micrography.
7. Petrification of the writing, neither a change in speed nor in emotion.
8. Unusual slant to the writing.
9. The handwriting of the asthenics show greater variation than those of the pyknics.

These differences were made on the writing obtained from men. Women show less variation than the asthenics. They show little micrography and little splitting of the words. In short, they show more the pyknic type of writing.

It is of interest to note that Mohr and Gundlach (152-153) did not obtain the same results as van der Horst. They did not find a normal rate of tapping.

Another very interesting experiment is this connection was made by E. Enke (40). Two groups of people, pyknics and leptosomes, were brought into a room, and with no other stimulus than to lie down on a bed and rest, the time it took to reach rest was measured by means of a psychogalvanometer. The pyknics all came to rest within 15 minutes, some even falling asleep in that time. Practically no leptosomes came to rest in that time, and the majority never did come to rest within the limits of the experiment. Naturally, none went to sleep.

The reactions to pain, pressure, odors and so on were studied. In general it was found that the leptosomes are on a tension which is not easily resolved. The pyknics create a tension when needed and resolve it easily. This is another proof of the adaptability of the pyknic, and the perseveration

of the leptosome. The leptosomes do not show their feelings, often giving the impression of being cold and emotionless, but when measured by the proper instruments, it is found that they are constantly on a greater tension in an experimental situation.

While the results of all these experiments differ somewhat in some points, certain general tendencies can be ascertained from them. It can be found that the secondary types are more specialized as to their motor reactions. They tend to write smaller, maintain a rhythm even against considerable distraction, can do several things at once, can split their attention to such a degree that they only see certain things at the expense of others, tend to get on a tension even in the simplest situation, tend to maintain this tension in spite of rest, tend to perform fine motions with great skill and more elaborate motions with awkwardness, tend to be jerky. The primary type shows the opposite of most of these attributes.

It was in view of incorporating these various reactions into a single test that a handwriting test was devised to bring them out. Size of the handwriting, speed, reaction under distraction, connection of words, and many other psychomotor reactions can be ascertained with comparative ease by means of this test. The test is entirely dynamic, and is not correlated with any 'traits' of character, as the older graphologists attempted to study. It is based solely on the dynamics of handwriting as influenced by structure and environment (the field).

b. The handwriting test.

A strip of paper is placed before the subject upon which is written the following sentence: "This is a sample of my handwriting. I hope it is good." It is written as one sentence on a single line.

The following instructions are given: "I want you to copy this sentence at your normal size and speed, just as you ordinarily write". A sheet of white typewriter paper is placed in front of the subject lengthwise, not as it is ordinarily used in writing. The subject is asked to write his name and age in the upper left-hand corner. This position of the paper gives more room than the usual position. If the subject turns the paper, it is again placed in the original position, and he is told that he must write in that position.

There are five parts to the test.

1. Normal size and speed. Three trials are taken, and the time is recorded by means of a stop watch.
2. 1st distraction. The following instructions are given: "Now write the same way, but count at the same time, one, two, three, four, five, and so on as long as you write." Some subjects ask whether they should count fast. They are told to count at any convenient rate. If they do not ask, nothing is said. Time and the final number reached by the subject are recorded. Three trials are taken.
3. 2nd distraction. The following instructions are given: "Now write the same way, but count just as fast as you can." Time

and the number reached by the subject in counting are recorded. Three trials are taken.

4. Suggestion. The following instructions are given: "Now in counting fast you probably noticed that you wrote faster." A pause is made to observe the subject's reaction. Then the instructions are continued as follows: "This time, I want you to write as you did the first time, at your normal size and speed, but still count as fast as you can." Most subjects do write faster when counting fast, and they attempt to return to their normal size and speed. Others have not written faster, but when the above statement is made, they quickly affirm that they have written faster. This is an acceptance of a suggestion, and is recorded. Regardless of whether the individual actually has written faster, the instructions are given the same way. Three trials are made and the time and number reached by the subject are recorded.

5. Speed. The following instructions are given: "Now this time we have a speed test. You are to write as fast you can, but without counting." Time is recorded for three trials.

If the subject fills one page, the paper is turned over, and if he fills the other side, a new sheet is given. The sheet was turned in the middle of a test if necessary, rather than attempting to get three trials on one side of the paper. This often gave a characteristic difference when the subject had to

begin to write with no sentence above him on the paper, and he had to turn to the copy before him.

The lengths of the lines are measured from the farthest left projection to the farthest right projection. The average of the three trials is taken for each part of the test.

## 5. The Rorschach Test.

### a. Review of literature.

The Rorschach test has had wide application in all fields of psychometrics and psychodiagnostics. It is fast becoming one of the most valuable tests in the entire field of psychodiagnostics. Much of the literature is now available in English, especially in Vernon (218, 219), Beck (5-7), Oeser (162, 163).

The use of ink blots dates back to 1895 when Binet and Henri (9) devised a test for the investigation of individual differences. Soon after Dearborn (29, 30) in 1897 gave a technique for the use of ink blots as a test of imagination, association and other psychological functions. From this time on ink blots have been used in some form by various workers for various purposes.

It may be of interest to point out certain general differences in the use of the ink blots. One method uses an ink blot to arouse an image in the subject's mind, and the time elapsing between exposure of the ink blot and the naming of some object is recorded. Another method stresses the contents of what is seen. For instance, it is noted whether the subject tends to use verbs or nouns and adjectives to describe what he sees, or whether he describes objects as a whole or in parts. Finally, ink blots have been made synthetically and used to ascertain certain tendencies of the perceptual processes.

The first use of the test placed emphasis on association

and on the number of interpretations given in a period of time. Examples are to be found in the works of Sharp (201), Dearborn (29,30), Kirkpatrick (107), Bartlett (3), Parsons (168), and Schwegler (198). Schwegler used the interpretations of the ink blots to ascertain certain differences between his introverts and extraverts, taking into consideration both time and contents. Whipple (234) gives an account of tests with ink blots in his Manual.

In contradistinction to this use of the ink blot we find an entirely different method, and it is to this method that we owe an increased knowledge of certain problems of personality. Rorschach (185, 186), a brilliant Swiss psychiatrist, worked years on the test that now bears his name. He experimented with ink blots made by dropping ink on paper, after which the paper was folded so that a chance form resulted. He selected certain of these for use as a test. He later discarded this method and used ink blots synthetically obtained. By mixing in color and increasing the size and symmetry of the blots he obtained a much broader field of investigation than is the case with the smaller ink blots used by other workers.

Modern personality workers, especially those interested in types, have used the test as Rorschach devised it. Munz (157) studied the reactions of people with the pyknic body build to the Rorschach test. This was an attempt to study Kretschmer's body types psychologically. Lópfe (142) studied the reactions of 10 - 13 year old children to the Rorschach test. Mohr and

Gundlach (152, 153) also studied Kretschmer's body types using among other tests the Rorschach test, and found interesting results in respect to color and form as well as to the Kretschmer types. Oeser (163) performed some experiments in the field of perception following Jaensch and the Marburg school, the Rorschach test being used as a part of the method. Another recent work using the Rorschach test was made by Oeser (16) in a study on the abstraction of form and color. Vernon (218, 219) has also devoted much time to the Rorschach test.

Kirkpatrick (107) in his study found that his younger children below the fourth grade saw more objects than those above this grade. This result is most remarkable, since the young child has fewer mental images than the older child. Kirkpatrick explains this as follows: "The smaller number of objects seen in the spots by the children of the fourth, fifth and sixth grades is probably to be explained by the fact that children of those ages have become more critical in their sense perceptions as their ideas have become more definite and as they learned from life's experiences and from training to be more careful in their judgments."

This explanation states generally what has happened, but the new data given by Jaensch would lead us to say that the older children see fewer objects because their perceptual processes have differentiated more, and there is no longer a one-to-one correspondence between the objective stimulus and what they report. The younger children have this one-to-one correspondence,

and it is not until later that they lose it, either partially or completely.

Very interesting in this connection is the experiment performed by Stern (207). He found that younger children when shown incomplete drawings will recognize them quicker and better than older children. Here again we find that the older children have lost the close one-to-one correspondence between the stimulus and what they see. The differentiation process has gone on so far that images and perceptions are widely separated, and the results cannot be predicted, as is the case in young children.

Gesell (53, 54), Irwin (80-83), and others have given many illustrations of these principles in their works on infants. They have taken up the idea of maturation and differentiation in the development of behavior.

There are very few instances in the literature where the Rorschach test has been changed or modified. Schwegler (198) used colorless blots, and Struve (213) used changed blots.

Loosli-Usteri (141) was the first to use the Rorschach test in France and reports few movement responses in her 10-13 year old children. This is of extreme importance for the developmental theory set up by us.

There have been some attempts to correlate the excellence of form responses (standardized on large numbers of subjects)

with intelligence. Schneider (192) performed such a piece of work using Bobertag-Hylla, Binet-Simon and other tests. Beck (5, 6) has done extensive work on the feebleminded. Juarros (99, 100), studying abnormal children, found that the more retarded the development the faster the responses are given. He also found that there were few color and movement answers, thus representing the coartated type according to Rorschach. Pfister (171) has also attempted to study the feebleminded. He found that almost all feeblo-minded gave no movement responses, but did give color responses. He differed from Rorschach by finding that oligophrenic details were lacking in about half the cases. Beck has also disagreed with Rorschach.

In the psychiatric world the Rorschach test has been considered a great aid in differentiating the mixed neuroses. Veit and Kretschmer have reviewed its use (216). Mazkevič (151) has stated that the Rorschach test aided in discovering latent pathological complexes. He considered it better than Jung's association test for complexes. A very interesting discussion of the difficulties and results of the Rorschach test is given by M. Müller (156).

Twins were investigated to see whether they gave different responses to the Rorschach test. M. Bleuler (12) tested 141 subjects and found close similarity between twins, especially in the original responses.

Halvorsen (61) has attempted to correlate the Rorschach

test with graphological studies. This is a very fruitful attempt, and if the graphological criteria can be kept dynamic, it should lead to a greater insight into the personality types as shown in the handwriting.

Enke (41) made a very elaborate investigation of the Rorschach test. 200 subjects were typed according to the Kretschmer classification, 116 being measured and the rest typed by inspection. Among his pure pyknics he found that 75% were extroverted. Of the mixed pyknic types 72% were extroverted and 9.3% were introverted. The athletic and mixed form types reacted 30% extroverted and 45% introverted. The leptosomes 30.2% were extroverted and 47.1% introverted. Of the dysplastics 20% were extroverted and 60% introverted. This shows that the correlation between the pyknic build and extroverted type is higher than between the other builds and temperament, although there is a greater frequency of the corresponding type.

Enke explains the lack of correspondence with the non-pyknic types as due to the primary color responses. Both Rorschach and Munz found this difficulty, and Enke points out further that primary colors with a leptosome type do not mean the same as with a pyknic type, especially when the leptosomes give several kinaesthetic responses which are opposed only by primary color responses.

One other finding of Enke is of interest. Jung has claim-

ed that hysteria is the typical disease of the extraverts. Enke found that his hysterics showed both forms of body build, but 25% more were extratensive than introversive.

b. Methodological considerations.

Let us now consider the Rorschach test in the light of general methodology. Vernon(219) has pointed out many important differences between the Rorschach test and other tests. Let us quote him (p. 90):

From the outset the reader should realize that Rorschach's method is not an ordinary psychometric test; adequate norms, and data on the objective reliability and validity of the various scores which it yields, are conspicuous by their absence. Its chief aim is a qualitative one, namely, to aid the clinician in obtaining a schematized intuition into the total personality of his subject or patient. To apply statistical standards to each separate score is unsound, since the significance of such a score is deemed to be dependent on the whole of the psychogram; in other words the results of the test must be interpreted in the light of the "form-quality" of the subject's personality. Hitherto, therefore, the validation of the test has been largely subjective, consisting of verbal comparisons between case-studies of the subjects and diagnoses based on their ink-blot psychograms. Its background lies in the typology of Jung, Jaensch and Kretschmer, rather than in the psychometry of Thorndike, Terman and May. And its apparent failure to conform to the objective standards of present-day testing can only be comprehended in terms of this fundamental difference of background.

This means that the test is practical. It arose from empirical data, and has been used by trained clinicians. The tendency to standardize and reduce data to norms from tests really is reversing the normal progress of a test. For example, at the present time a test is made out, then it is standardized on large numbers of individuals. The fallacy of this method is that the value of the test drops in proportion to the objectification of the results. A score from such an ob-

jective test has statistical reliability, no one denies this. But the clinician cannot deal with statistical probabilities when there is a patient or subject in his office who may be one of the exceptions. The chances may be 10,000 : 1 that the individual under consideration will belong to a certain group on the basis of a standardized score, but the clinician may be faced with just this one exception. As has already been pointed out, the clinician for practical reasons is interested in the quality and not the quantity of certain individual differences and similarities. An unstandardized and unobjective test like the Rorschach test is far more valuable to him practically than the whole series of standardized objective tests, simply because this test offers him a means of penetrating certain difficult reactions in human behavior.

This is of course no argument against standardization, even of the Rorschach test, but it is an argument against objectification and standardization of new tests. Many valuable tests have been ruined by the immediate attempt to quantify the data. One of the most important tests ever devised in America was the Downey Will-Temperament test. A glance through the literature on this test will show repeated attempts to objectify, standardize and correlate the test statistically. The repeated failure has reflected, not on the premature attempt to reduce a new test to objective terms, but on the test itself. Discredit of a test because of statistical failure is a bane to psychometrics. When a test has been used by

trained and experienced clinicians and found to be valuable, statistical data can be collected and used to supplement the test. But before a test has been given a chance by clinicians, long statistical studies are made and a good test may be rejected on the flimsy grounds that it cannot be adequately treated statistically. It must be emphasized again that this is a practical argument and not a theoretical one. There is probably a greater need today to be practical than ever before. The increasing inability of psychologists to treat adult problems points to the need of a more practical consideration of psychometrics.

In conjunction with Vernon's statement of the Rorschach test, we can quote Rorschach's own view (186) of the test (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 is unfounded. 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.

There has been a good deal of bitterness between the "objective" school of psychology and the "practical clinical" school. The first views the latter as being unscientific and subjective, the other considers the correlations and statistical treatments as sheer triviality. It is not a question of which side is right but it is most decidedly a problem of preventing either side from dominating the field of psychometrics. Both extremes are bad, and an attempt must be made to tread between the two. The pres-

ent study leans more towards the practical diagnostic side, rather than towards blind objectivity, but the attempt is made to reduce the diagnostic method to terms that can be understood by wide groups of trained clinicians.

c. Use of Rorschach test in this research.

We can give here a short account of what parts of the Rorschach test were used. Originality, oligophrenic responses, excellence of form responses, evaluation of the contents of responses, succession form of responses were not used. The reason for this was that the test is only one part of a diagnostic procedure to determine the type of the individual. Whether the individual is intelligent or not does not concern the type. The above factors were used as indicators of intelligence.

Only the Rorschach ratio was used. This is the ratio of Kinaesthetic responses to color responses. Rorschach distinguished between color-form and form-color responses. The color-form responses are determined primarily by the color, but the form is also included. He gives this type of response the value 1. The form-color response is determined primarily by the form, but the color is also included in the interpretation. Since the form predominates, i.e. since this type of response represents a transition between pure form and color-form, it is given a value of  $1/2$ . The kinaesthetic responses were given the value of 1.

Kinaesthetic	1
Color-form	1
Form-color	1/2
Color	1 1/2

This ratio does not depend on the number of responses, since if the number were increased the ratio would remain the same.

We must now consider some deviations from the Rorschach procedure. The kinaesthetic responses were evaluated only when the subject expressed tension within the picture. Rorschach considered any interpretation of a human being to be kinaesthetic. In the present work such an interpretation was not considered kinaesthetic unless the subject stated that the human being was in action, bending, twisting, whirling, etc. The attempt was made to reduce kinaesthetic responses to a minimum and to clear-cut cases. Color responses are easier to evaluate, and the distinction between the color-form and the form-color is not difficult, neither is it of any great importance since there is only a difference of one half point between them. With some experience, especially after testing for some time in hospitals for the insane, it will be apparent to the tester when a subject gives strong indication of kinaesthetic responses without actually giving one. In the absence of color responses the individual would then be typed introversive.

The question may be asked how color and kinaesthetic re-

sponses can be determined. Are they subjective evaluations of the investigator? With a little practice it can be stated that they are quite objective, and in 90% of the cases all workers would agree on the evaluation. The color responses are quite simple. The kinaesthetic responses are more difficult, and there is a greater variation in the interpretation of what a kinaesthetic response really is. Rorschach and most men who have used the Rorschach test have not found it advisable to instruct people in this point by pure description, but subjects are taken and the individual is standardized, so to speak, instead of the test. Descriptions can be found in Oeser (162, 163), Beck (5-7), Vernon (217-219), Rorschach (185, 186), and other workers using the test. These descriptions will not aid much until the individual has had a chance to sit opposite typical types and see what really constitutes kinaesthetic responses. The writer (202) has tended away from this rigid classification of responses, and views the test as an increasing specialization of the perceptual processes. This makes the kinaesthetic response a highly complex response including in its structure strong tension or movement in the report. This is so clear-cut, after it has been experienced a few times, that its use can be made quite objective.

This leads to the evaluation of the ratio. Since Rorschach attempted to do much more with the test than was attempted in this study, many of the distinctions he made are of no value in this work. His coartated, ambiequal, and dilated types are of no value in this work. In this work the individual was con-

sidered solely as a primary or secondary or mixed type.

One of the most troublesome features of the present work arose in the evaluation of the ratio. Since the present work considers the types on a continuum, there can be no sharp lines, and whenever the quantitative measures from tests approach a borderline, the difficulty of placing the individual increases. The handwriting test, quite fortunately, did not offer this difficulty, since the relative size of the writing was always definite enough to be evaluated. But with the Rorschach ratio this was not the case.

Let us take up what actually happened. Many subjects do not respond with either kinaesthetic or color responses. This gives a ratio of 0 : 0. The question arises whether the individual is to be considered a primary or secondary type on the basis of this ratio. One of the first cases where this difficulty arose was a woman in the state hospital. Her handwriting test was distinctly primary, her body build was secondary, and her entire make-up presented a secondary appearance. Her reactions to the Rorschach were distinctly primary, with the exception that she gave a 0:0 ratio. Objectively then the patient would have to be considered a primary type, a quite obvious fallacy since she showed resistance, negativism, even some catatonic symptoms. The hospital staff diagnosis was not in agreement, and fluctuated between a psychoneurosis and catatonia.

From the results of studying other subjects well known to

the writer, it was finally decided that the 0:0 ratio represents a borderline condition, so that the individual may be primary or secondary, depending on the other factors. This is the one difficult point of the Rorschach test. It was found, however, that the tendency was quite definitely towards the secondary when the ratio is 0:0. Only when the individual is predominantly primary in everything else, especially body build, can the ratio 0:0 be shifted towards the primary side.

The other ratios are not difficult to evaluate. Any number of kinaesthetic responses opposed to no color responses or any number of color responses equal to or less than the kinaesthetic responses will be considered secondary. Any number of color responses opposed by no kinaesthetic responses or by fewer kinaesthetic responses will be considered primary.

In practice it will be found that the actual ratio can vary a good deal without in any way changing the diagnosis. In fact, individuals can be instructed in the different responses and can give responses in contradiction to their types without fooling the tester. This is based not on the objective data, but on the functional analysis of the individual's behavior. In this work naive subjects were used, and the actual ratio was used in order to make the work scientific. The experienced tester however, should be warned not to overlook the functional side of the test, which is one of the most valuable in the field.

The absurd idea that there is a direct correlation between the number of kinaesthetic responses and the degree of introversion is not made. The responses of the Rorschach test represent, not the total personality, but are signs of certain perceptual stages of development. These signs may or may not be in direct correlation with the total personality. In any case, they indicate the stage, not the quantitative amount of specialization of the perceptions. This, of course, rules out intelligence and education.

d. Procedure of giving the Rorschach test.

The following instructions are first given: "I am going to show you some pictures, I want you to tell me what they are, or what they could be." The first card is placed before the subject. The subjects usually give one answer and think they are through. They are asked if they see anything else. They usually ask whether they are to try to see as many things as possible. The answer is that they are not to try to see a great number of things, but to say what comes to them easily. This usually suffices, and no more difficulty is obtained. No questions are asked about the interpretations until the end. At times, the question may be asked whether the individual is looking at one part of the picture or at the whole. The question is worded as follows: "Just how do you see that?" The subject then points out what he sees, and the result can be recorded. All responses are recorded.

Doubtful responses are checked and the subject is asked

about them at the end. The procedure is very simple, and the accounts given in the abundant literature on the Rorschach test will supplement these remarks. There was little deviation from the usual procedure, except as pointed out above.

## 6. Body Structure.

### a. The problem

Let us consider first the body build. The body contains the material portion of the individual; its form, its functioning and its changes present what we know of life and its manifestations. Throughout the history of the world we find men attempting to correlate certain features of the body form and certain character traits. This is supported by everyday life. Children, animals, and adult human beings rely on certain signs and expressions of the body for their reactions to other individuals. The very difficult problem in philosophy and psychology of how meaning is transferred from individual to individual, whether psychic events within the individual can be directly perceived, or whether we infer the mental states of other individuals from certain signs has agitated workers throughout the centuries. Whether we perceive mental states by empathy (Lipps) or by inference and analogy, or in some other way is a very important question to settle (see Lisser, 139). There is no doubt that every individual relies on signs presented by morphology and dynamic changes in expression for their understanding of other people. The attempt to reduce these subtle changes to quantitative terms has been a miserable failure.

It is unnecessary to go into the history of earlier attempts to solve the problem of morphology and character. Palmistry, graphology, physiognomy, phrenology were all attempts to

correlate body structure or expression with character traits. The failure of all these attempts was not due to the fallaciousness of the idea - there is no doubt that the morphology and dynamic expression of the individual are closely connected with that individual's essence - but was due to methodological considerations. The fact that out of a million different specimens of handwriting, the handwriting of some individual known to the layman can be selected, proves this beyond a doubt. (see Savdek, 190) The recognition of individuals by their gait and their posture is an added confirmation of the unity of body structure (always in the dynamic sense). We must not criticize these attempts as unscientific until we are able to show what fallacies were committed.

The fallacy is not difficult to find. The traits of character in the old sense were behavior reactions of the individual to his environment. These traits were honesty, ambition, courage, intelligence, and so on. One glance at the list will show that these traits are not simple elements of the personality, but reactions of the individual as a whole to the environment. They are thus composite and complex. For this reason no correlation could be established between the morphological aspect of the individual and the behavior of that individual. The attempt of charlatans to predict behavior was based on the same fallacy. Why should there be a correlation between a line of the hand, or a line of handwriting, or any other morphological feature and some future events? This is a static way of look-

ing at things.

This procedure has not yet been eliminated from the fields of psychology and education. It persists in the form of the intelligence. The attempt to correlate intelligence with other forms of behavior is only a refined method of palmistry or phrenology. The similarity consists in the attempt to reduce dynamic traits to static measures. The morphology of the body is far less dynamic than the character traits, therefore there can be no correlation between them.

b. Historical account of body types.

The question now arises whether body form can be used in personality work. We find as we begin to study the problem that body types have persisted down through the ages. From 400 B.C. down to the present there have been classifications of body types. This brings us to the problem of types again, and whether the body types can be correlated with personality types, or rather whether the body form can be used as one of the variables in the determination of types.

Let us consider some of the divisions throughout history. Hippocrates (400 B.C.) set up his habitus apoplecticus and habitus phthisicus. From this general dichotomy we can set up the following table.

Hippocrates

habitus apoplecticus

habitus phthisicus

A. de Haller (Swiss 1750)

Halle (French) 1797

thoracic abdominal muscular nervous and cephalic

F. Thomas de Troisvevre (French) 1821

thoracic abdominal cranial

Rostan (French) 1826

respiratory digestive muscular cerebral

Benecke (German) 1878

habitus quadratus habitus arthriticus

Virenius (Russian) 1904

epithelial connective muscular nervous

Claude Sigaud (French) 1908

respiratory digestive muscular cerebral

Bryant (American) 1913

carnivorous herbivorous mesoplastic subplastic (?)

Bean (American) 1912

hyperontomorph mesontomorph

Carus 1853

phlegmatic athletic asthenic

Viola and Naccarati

macroplanchnic normosplanchnic microsplanchnic

Pende

hypervegetative hypovegetative

Chaillon and Mac-Auliffe

Added mixed types - cerebro-muscular, musculo-digestive, etc.

Davenport

fleshy medium slender biotype

Stockard			
	lateral		linear
Kretschmer			
	pyknic	athletic	asthenic
Gurevitch			
	fluent, balanced dexterous, plump	crude, angular, good in rougher acts	feeble, awkward

TABLE IV

## Historical survey of body types.

## c. Theoretical considerations.

The similarity and persistence of these classifications throughout the centuries is of interest and importance for the personality worker. Recent attempts to correlate body form with personality types, with psychoses, with motor reactions, with dynamic aspects of handwriting, with disease, and with many other formal features of the personality have been bringing to light many important discoveries. We see that there is a trichotomy rather than a dichotomy of body types. In general there seem to be fat or broad types, muscular types, and long slender types. The muscular type is considered more a mixture of the other two, rather than a distinct type. We also find that these types are not often represented in their pure form. The pure type is not the rule but the exception. This is one of the main features of types, and also shows the dynamic nature of body form, which is at the same time relatively constant. We also find the difference between the phenomenal ap-

pearance of the individual and the underlying structural basis. Two individuals may be quite thin at one moment in time. The same quantity of food can be given to both under the same conditions, and one will increase rapidly in weight, the other only slowly. When we ask why this should be - and this is a common observation of actual life - we can answer that the phenomenal state of both individuals did not necessarily mean that both were structurally the same. They could have both belonged to different body types, consequently their metabolisms and the deposition of fat on the body would go on at different rates and show different results. This also does not mean that all individuals of the same type will increase with the same rapidity. But in general, the members of this type will tend to put on weight more rapidly and easily than the members of the other type who also show variation within the type. We must therefore consider the body build in the light of the entire type problem.

From all these men it is seen that there have been certain constant forms of morphology throughout the ages. There have been connections made between the form of the body and the accompanying personality form. When it is asked why there should be two general types morphologically with degrees of mixture, we must turn to biology for an answer. The recent work in maturation and differentiation of the organism as represented by Child (23), Coghill (24,25), Tracy (215), Kappers (104), and others is an attempt to answer these questions. It will be in-

teresting to consider some of these facts in the light they throw on the development of body structure. Viola set up the following ontogenetic law: "The ponderal (weight) evolution, or increase of mass, and the morphological evolution, or change of proportion, are in inverse proportion to each other. The more an organism evolves ponderally the more does it evolve morphologically."

Let us quote some very pertinent statements from Pende (p. 35).

According to Viola, the original evolutionary spurt which the organism receives ab ovo seems to be divided into two distinct forces. One of these determines the increase in the somatic mass, or the growth, and the other brings about the morphological transformations, or the differentiation. An unbalance of the two energies of development occurs - possibly from causes intrinsic to the evolutionary impulse or possibly from extrinsic causes related to the degree of ease with which the germ plasm is nourished and the quality of the nutriment furnished by the environment in which it is developing - and while the germ assimilates to excess and increases in size, it slows down its evolutionary morphological course, or vice versa.

But since the vegetative system of the living being provides for assimilation and for augmenting of the mass, while the animal system, or system of the life of relation, provides for the transformation of energy, that is, for the relations with the environment, and hence for changes of form which establish variable and even more complex relations with the environment itself, we can formulate another law from the one already cited, namely, that the two great systems distinguished by Bichat, the vegetable and the animal, are in inverse ratio of development in ontogenetic evolution - the greater the development of the vegetative system, the less developed is the system of relation; and conversely, the stronger is this latter, the less developed is the vegetative system.

According to Viola's studies, this evolutionary disharmony between the two systems constitutes the primary natural reason for the arising of two great antithetic types of deformation or deviation from the average of normal human constitution. The type in which the bodily mass is in excess over the proportions and in which the vegetative system preponderates over the animal Viola calls the megalosplanchnic (a type having a large trunk within which are the organs of the vegetative life). The type in which, conversely, the morphological differentiation and the animal system preponderate over the total mass and

the vegetative system he calls the microsplanchnic.

Viola rightly interprets the first type of deviation, our hypervegetative, as one morphologically hypoevolute, a type which approaches that of the child in bodily proportions; the opposite type, the microsplanchnic, or a hypovegetative, he regards as a hyperevolute type, that is, one in which the bodily proportions which distinguish the adult from the child are even more pronounced than in the adult himself.

The ontogenetic principle established by Viola finds confirmation in a fact that has been brought out by many authors, and especially by the accurate measurements of Godin, namely, that, in normal growth, phases of growth in width alternate with phases of growth in length. The former are represented by an increase in bodily mass, especially in the volume of the trunk (thorax and abdomen), while the latter find their expression in an increase in length of the extremities and a greater development of the central nervous system, the system of animal life.

According to Godin, this law of alternations, as he calls it, between the development in breadth and in length is also found to exist in the individual segments of the body. Now it happens, in accordance with the great biological law of error, that some individuals deviate from the average in an excessive development in breadth and others in excessive development in length. Hence there arise two ectypes which can be identified with the megalosplanchnic and microsplanchnic ectypes of Viola, namely, the brevilineal (brachymorphic) and the longilineal (dolichomorphic) types.

Thus we have determined the fundamental criterion for a first analysis of constitution, for a first judgment upon the existence within this constitution of a state of morphological balance or imbalance, to which, as we shall see, there nearly always corresponds a dynamic balance or imbalance. In other words, we have determined the criterion of the relation in the individual between the degree of development attained by the vegetative system and that attained by the animal system, or between the width and the length of the body, respectively.

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Recently J. Kaup (Die Biologie der Person, von Kraus-Brugsch, 1, 211) has arrived at the conclusion that the volume of the viscera and the relation of this to the length and breadth of the body is the most exact criterion for the judgment of constitutional harmony or disharmony. It is interesting to note that Viola has started from the seriation of the trunk's volume and from the proportion between the trunk and other measurements in building his table of degrees.

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This is the rational criterion because it is guided by a law that governs the phenomena of normal ontogenesis. With Viola we shall assume the size of the trunk to be an expression of the vegetative development, and the length of the limbs to be

an expression of the animal development. To these may be added certain descriptive characteristic notes about the head, face, skin, etc., to complete the criterion of the degree of morphological differentiation.

With a certain amount of practice the fundamental relation of these two lines of development can be established on sight, by simple inspection, but to determine the exact degree of disproportion we must adopt Viola's anthropometric procedure.

Of all the theories this one seems to fit in with not only biological principles of the present time, but also with the new psychological principles. Differentiation takes place in a homogeneous mass of protoplasm in certain directions, depending on the intrinsic structure of the protoplasm, and on the outer environmental influences. In short, we can consider the entire process as a field, which brings it in line with the principles of organismic biology and the field theory. Since there may be a disproportion in the development, and since this may take two general directions, we account for the prevalence of two main types throughout history. This would indicate that morphology is dependent on two opposite variables (length and breadth) and if these were in perfect harmony, the organism would be round. When this harmony is destroyed, the organism either tends to be ponderable or tends to elongate.

Along with the body structure goes the personality and psychological reactions. This is perfectly logical, since we are considering the organism as a whole. Since the less differentiated (hypoevolute) type tends to be vegetative, have more interest in eating and the joys of life, tends to be less highly specialized mentally, we have a perfect picture of the extravert, cyclothymic, primary, manic-depressive, tough-minded,

objective, type. As this original harmony becomes disrupted, we find the body elongating, the stomach and digestive organs sink into the background, the individual becomes less interested in the joys of life and more ascetic, and shows a more highly specialized mind or central nervous system as Pende states.

#### d. Body types in entomology.

Before going on let us turn to an entomologist who is considering the morphology of insects. W. M. Wheeler (233) points out the prevalence of long-bodied and short-bodied insects. He draws a parallel between these insects and the two general types in man. He has gone to some length in drawing parallels between the insect asthenics and pyknics. Very interesting is the following statement (p. 5):

The general impression produced by the insect asthenics and pyknics is that of mutations which have somehow managed to survive among the great mass of athletic species, but it is doubtful whether they have arisen as such saltatory variations.

This indicates the prevalence of the mixed groups even among insects. Wheeler also recognizes that these morphological differences cannot be explained entirely by the environment. He states (pp. 5-6):

The differences between the two types cannot be due to the quality of the food, because there are predatory and phytophagous species in both groups. That they differ in metabolism is probably. The pyknics, like the human analogues, are certainly great feeders compared with the asthenics - compare, e.g., the appetite of a dung-beetle with that of a walking-stick insect, and structurally there is a great difference in musculature, the muscles of the asthenics being long and slender while those of the pyknics are short and voluminous.

#### e. Distribution of body types.

Since these body types are rooted in the biological mani-

manifestations of organisms, the prevalence of the types is of importance. The French workers, Sigaud (*La forme humaine*, Paris, 1914), A. Chaillon and L. Mac-Auliffe, (*Morphologie médicale*, Paris 1912) report the following distribution of body types. The respiratory type includes 30% of the population, predominantly the coast population and those living in the mountains. The muscular type includes 47% of the population, principally workers and peasants. The digestive type includes 14% of the population, especially the inhabitants of the rich southern provinces, also of Flanders, Normandy, and Bretagne. The cerebral type includes 9% of the population, but 25% of the free professions. (See Kronfeld, 274)

The muscular type is made up of 47% of the population which is approaching half. If it is true that the muscular type is a mixed type, this would mean that half the people belonged to the mixed type.

Bauer (*Beiträge zur klinischen Konstitutionspathologie*, Dtsch. Arch. klin. Med. 126, 196 ff. 1918) studied types in Vienna and found only 30% pure types, and 60% mixed types, with 10% that could not be classified into one of the four types. (See Kronfeld, 274)

Viola, Pende, and others (see Pende p. 57) have found 50% mixed types, and only 50% could be classified into the two principle types (brachymorphic or dolichomorphic types). It is evident that if two tendencies are either in balance or out of balance in several directions, the majority of people will

not reach the form of the pure type.

f. Development of body types and the possibility of their change.

Since the hypoevolute types show more primitive reactions even with increased education and intelligence, one might be inclined to view the evolution of types as progressing from the brachymorphic types to the dolichomorphic. This is further justified when it is considered that the baby represents this brachymorphic condition, and with increasing development passes through stages resembling very closely that of the brachymorphic type, whereas it continues to go over into that of the dolichomorphic. In the perceptual world we find that Jaensch has given much data in support of this view. There is an increasing disintegration from birth on. This would mean that the brachymorphic types would tend towards the dolichomorphic, rather than the other way around. This is supported by the fact that schizophrenic patients retain both their body form and personality make-up, never going back towards the manic-depressive pole. Manic-depressives, on the other hand, show a tendency to move towards the schizophrenic pole, sometimes in their body build, sometimes in their mental reactions. In this way, psychoneurotics tend to approach the schizophrenics rather than the manic-depressives. This does not at all alter Pende's theory, since it accounts for the prevalence of the two types. Empirical data indicates that the direction of development is towards a more highly specialized one; and since the dolichomorphic types are more

specialized, they represent the final stage in the development. One must avoid the fallacy of thinking that the dolichomorphic represents the highest type biologically. Since even the lower animals show this difference in body build, such an assumption would be erroneous. It cannot be denied, however, that the long body is correlated with more specialized functions of relation. This can be observed throughout the entire animal kingdom. It is only in man that the finer psychological differences become manifest. This theory might eventually lead to a rejection of the evolutionary theory.

A further indication of this is found in recent work with drugs. It has been found that sodium amytal and bulbo capnine only produce results in animals possessing a neocortex (see Henry 67). Since the cortex represents the most highly specialized part of the nervous system, and since the dolichomorphic types are considered to have a more highly specialized nervous system, we can conclude that they stand on a higher level than the other types.

These biological considerations cannot be solved at the present time. We can assume that there are two general ectypes, one of which tends to have a more specialized nervous system. Since each organism begins as an undifferentiated whole, we can assume that it will resemble (but is not identical with) the development of the less specialized type. This means that the secondary type shows phenomenally the same behavior in early life as the other type, but later differs more and more from

it, not only in body build (elongation), but also in the psychological sphere. We can thus state that the organism represents a line of development from a less specialized undifferentiated condition to a more specialized and differentiated condition. The perceptions and other components of the organism show this same general direction of development. Since many factors contribute to this specialization, it can be expected that it will show various anomalies as to time, speed of development, and so on. Just as a boy of 6 years may show the sexual development of a man, we may find the rapidity of the development of the secondary type either speeded up or retarded. It will remain for biologists to find explanations for these changes.

One other question must be considered whether types can be changed within reasonably normal circumstances. If a primary type of body build is present in an individual, is it possible to change this body build by intensive feeding? By this is not meant abnormal feeding, or changes such as with glands or operations. In the same way it may be asked whether the secondary can be changed into a primary. Life answers this question. Some people can eat enormous amounts of food without taking on flesh, whereas others only have to look at food to put on several pounds. These differences are quite apparent in everyday life. With these individuals the ability to change their type would approach the impossible. While the body types are dynamic and not static, the changes within the organization do not take place as rapidly in some as in others.

Of course, the individuals on the borderline would be greatly influenced, one way or the other, by food. Well defined types therefore tend to maintain themselves even against extreme changes in the environment. Less well defined types may be shifted one way or the other by environmental influences. Since the specialization of the nervous system is not changed to a less degree of specialization under normal conditions, if it can be thus changed at all, it remains relatively constant. The return to more primitive forms of thinking in the schizophrenic may thus be due to overspecialization with a subsequent disintegration of the processes. The blockage leads to a more primitive level of psychosexual genesis, and there is regression, as the Freudians express it. In general, therefore, certain structural components of the personality do not show radical changes corresponding to changes in the environment. Even when there is a breakdown into a psychosis, the personality changes maintain themselves, and become exaggerated.

Some workers have considered that body types change throughout life. It might be thought that the baby is pyknic, the child is asthenic, and later the old man is again pyknic. Sigaud and the French school considered the types unchangeable throughout life. Viola believed that the types are unchangeable and independent of change with ages. Zweig found that although a definite tendency to the four Sigaud types is already apparent in youth, they are not so unchangeable in the course of life as Sigaud had claimed. Especially the digestive habitus shows progressive increase with age. Bauer also found age displacement

of the Sigaud types. Florschütz found in a large statistical material that asthenic individuals do not lose that type, but with advancing age the type becomes even more apparent. (See Wertheimer 228).

Verschner has pointed out that the characteristics least effected by environmental influences are: stature, length of extremities, absolute and relative to stature are the ears, nose, eyes. Those most influenced are the length, breadth, depth, and circumference of the trunk, excluding shoulder and thorax breadth, body weight, length, breadth, and length-breadth index of skull. (See Wertheimer, 228)

Wertheimer (228) states that the pyknic type is more frequent with advancing age. Bauer found this also for the digestive type of Sigaud. For clinical correlation this is of special importance, since manic-depressive psychoses occur more frequently in middle age. Möllendorf has pointed out the importance of the age factor for these correlations. He found the asthenic type more frequently among his young patients and the pyknic more frequently with advancing age. (See Wertheimer, 228).

Whether development is reversible is a question of extreme importance for biology. As we have viewed the types, they rest on biological development, and if development is reversible, types can change into one another. We admit the possibility to a change towards greater specialization, but not the reverse.

White (236, 237) has gone into the problem and has arrived at much the same conclusion. The line of immortality follows along the less specialized organisms, the one-celled organisms that divided by fission. The more complex organisms must reduce certain cells to a more primitive form if they are to reproduce. He calls this dedifferentiation. The question remains, however, whether the process of development in organisms is entirely reversible.

It has been noticed that when schizophrenics become bodily sick, they come back to reality, i.e. they get better. It has also been noticed that when plants are injured, they give more fruit, and this same phenomenon has been noticed in man, especially in tuberculosis. The tendency towards a more youthful form when the organism as a whole is threatened may perhaps be nature's attempt to reverse the process of differentiation. There is, however, no convincing proof that the process is reversible except to a slight degree in man.

Let us quote a statement by White (236, p. 120):

Child is not altogether willing to admit with Lille, Loeb, Driesch, Schultz and others that development in animals is a reversible process. Inasmuch, however, as the complexities which have been built up by the process of differentiation, may be disintegrated by the process that he calls dedifferentiation, he believes the process of development is regressible. Differentiation is progression, and dedifferentiation regression, but perhaps through stages very different from the stages of progression, therefore the term regressible is preferable to reversible.

This brings us to the considerations of Klages (109).

Many psychologists today are turning to the question of reality

and its increasing force in man. Not all individuals possess the same degree of reality, and just as the small child can hardly distinguish the outer from the inner world, there are adults who are more similar to this form than to the more highly specialized forms.

This is called the integrate type by Jaensch, and represents a more primitive form. Animism in primitive man, and many other well-known facts of primitive life point to a greater integration in primitive man than in later civilized man. Jaensch (85) has gone to some lengths to demonstrate this point, and uses Lévy-Bruhl in many of his views.

With the increase in specialization goes a splitting with the world, since the inner world is sharply differentiated from the outer world. This leads to reflexion, even to the denial of an outer world. The mind-body problem is only possible when society as a whole specializes and when individuals within this specialized society specialize themselves. The mind-body problem is not possible in the early stage of development in society. (See Lissner (139), Klages (109), Jaensch (84-84), and others.) Klages has pointed this out, and shows that with the increased specialization of the mind (increased differentiation of outer and inner worlds) the mind tends to split life from the body. This means death, and the end of the process of differentiation is not some higher goal, but death. White has also pointed this out.

Now the primary type with its tendency towards a round

harmonious body represents a less specialized condition than the secondary with his greatly elongated body. The primary stands still, so to speak, i.e. remains closer to the original undifferentiated state.

The attempt to explain the personality from the body structure is futile, since the organism represents a whole within a larger whole. Consequently the body structure represents only one part, although a very important one, of the entire organism within the environment. It also follows that by changing the body build the other parts of the organism may not show a corresponding change, although there will be some change.

#### g. Racial types.

Wertheimer (228) has also considered the problem of racial body types. He agrees (pp. 49-51) with v. Rohden (182) that there is no connection between the constitution and the race, as the Stern-Piper theory states. Stockard (211) believed that the English people of the upper class show more often the linear type, Germans of the upper class more often the lateral type. Bean (4) states that there were originally four races in Europe which are now reduced to two. Thus, the Celt and Alpine are much alike, as are the Nordic and Mediterranean. Wiersma (239) has made a racial study and found two main types, the Alpine or broad type, and the northern which is long and pigmented.

Stockard (211) has pointed out further that the linear type tends to predominate where the iodine supply is good, whereas

the lateral types are found in the mountains and areas with poor iodine supply. He considered the typical differences as most prominent during the twenties, before this the type is not yet fully expressed, after thirty it is becoming modified by age changes. He claims, however, that the type can be diagnosed at all ages.

Stockard's description of the two types is extremely interesting. The linear type: eyes close together, base voice, nose bridge generally high, lower jaw small and narrow and usually not strongly developed, neck long and small in circumference, the shoulders are square, high and angular, arrive at puberty rather early than late and differentiate rapidly, skin thin and sensitive. They are as a rule active, energetic, and nervous, quite self-conscious and thus constantly exerting considerable nervous control. In normal health they rarely laugh aloud and when suddenly shocked they resist the reflex jump and never scream. They pass for cool, calm individuals with steady nerves, but the body is constantly held under nerve control and they are actually nervous, usually suffering more after a shock than on the occasion.

The lateral type: lateral lines are far apart, head brachycephalic, the interpupillary distance is wide and eyes are far apart. Lower jaw is large and strongly developed. The neck is short and large in circumference. The shoulders are round and sloping. This type tends to wear glasses. Show great fluctuations in weight, 15 or 20 pounds in a short time. Arrive at puberty a little late and are slow in differentiat-

ing. The voice tends therefore to remain tenor. The two types are more clear in men than in women.

Pende (169) has pointed out that in all countries where studies have been made two types have been found. The Greeks, French, Russians, Germans, Italians, Americans, and others have found the same general dichotomy. It is true, however, that when one goes through mountain districts, such as in Switzerland and Bavaria, there seems to be a tendency for the broad fat types to predominate, whereas in the northern countries the tall slender types predominate. This is merely an impression, and when a more accurate observation is made, it will be found that both types are present. If it is true that there is a tendency for one type to predominate, and this seems very reasonable, it does not mean that the distribution is changed much. In considering the literature and experimental work done, it might be said that the pure types would vary one way or the other, whereas the mixed group would remain constant at around 50%. This would still give a normal curve with a slight tendency to skew, depending on the environment. The presence of iodine naturally effects the glandular system, and would influence the distribution slightly.

#### h. Body types in children.

Now let us turn to some attempts to distinguish types in children. K. C. Rothe (188), stimulated by Kretschmer's work, attempted to study the types in children attending Viennese

schools. The children ranged from 8-14 years. In many cases previous history was available, and many of the children were followed for several years after. From the body form he set up seven types: fat, plump, small, strong, poles, red-haired, sick.

The very fat children represent glandular disorders. He found that they were good natured, dependable, good workers, and offered little difficulty in education. The plump group corresponded to Kretschmer's pyknic type. They tend more to be lazy than the fat type. The small children are exceedingly active, and may show psychopathic tendencies which make them problem cases.

The strong are Kretschmer's athletic types. Rothe states that the athletic type may develop from the leptosomes or from the pyknics under favorable circumstances (sport, occupation, etc.) but seldom from the thin small children.

The poles are the leptosomes of Kretschmer. They offer little difficulty in school and are model pupils. He states that a school made up of such children would be exceedingly boring.

Rothe seems to think that the red-haired group present a special type of personality. The last type, the sick, are those suffering from some ailment, and may develop into the other types when well.

These types have great importance for education, since they can be recognized easily. All of Kretschmer's types were found, but other types were included which evidently represented either mixtures or deviations from the general types. Of importance is that Rothe believes that the athletic comes from the pyknic and leptosomes, but not from the very thin children. This would indicate that Rothe has become confused. The small children evidently belonged to the leptosome group to begin with. The tall pole-like children, while looking asthenic in their early years, evidently can develop into athletic types when they are given the right training. This seems to indicate either that Rothe did not distinguish between the asthenic and the athletic at these early ages, or the athletic type is not a distinct type.

Krasusky (122) has approached the problem directly and found that the Kretschmer types could be distinguished in early childhood. He used 800 children ranging from 1 1/2-16 years of age. Krasusky gives a very excellent review of Russian literature which also testifies to the fact that the Russians have been very active to the study of body build.

Krasusky found that there was little work available for an anthropometric study of children. He was faced with the problem of either setting up norms himself, or of resorting to simple inspection. In his review of Russian literature concerning the possibility of reducing body types to mathematical formulae, the general consensus of opinion was that

this was not possible.

A direct quotation for Prof. W. G. Stefko's speech at the Pan-Russian Pedological Congress in Moscow (1928) on "The Present Stand of the Theory of Constitution and the Anato-clinical Scheme of Constitutional Diagnosis" will summarize the prevailing opinion in Russia. He states: "In the determination of the constitution there are and can be no mathematical formulae according to which it would be possible to make a diagnosis of the constitution. The method of constitutional diagnosis must be made up of both anthropometric data and of subjective evaluation with clinical or anatomical investigation." (Krasusky, p. 15.)

Krasusky attempted to solve this problem by setting up a chart of 32 fundamental features of the types. These were later extended to include other features found primarily in children.

Very interesting are the various distributions. At the level 1 1/2-3 1/2 years the distribution was 34% pyknic, 54% mixed, and 20% asthenic.

At the level 4-8 years: 35% pyknic, 44% mixed, and 21% asthenic.

Later ages showed: 26% pyknic, 44% mixed, and 30% asthenic.

By averaging these different levels, we get a distribution of 32% pyknic, 47% mixed, and 21% asthenic. This is approaching a normal curve with a skew towards the pyknic end. Since the pyknic is also the more primitive vegetative type, it would seem

likely that there would be more of them than of the more highly specialized asthenics. It is also of special interest that the distribution of these types seem to agree with the distribution of personality types found in this work. There seems to be a definite tendency for the pyknic types to predominate over the asthenic, while 50% of the individuals fall into a mixed group.

It will be noticed that Krasusky does not use the athletic type, but views the types as showing a continuous transition from pyknic through the mixed group to the asthenic. The correlation between the body build and the corresponding personality type ranged from 75% to 79% agreement.

It will be remembered that Binet (9-11) went into a study of handwriting, physiognomy, palmistry, and body build in order to find some indication whether there is a correlation between body structure and intelligence. Naccarati (157-161) also attempted to find a correlation between height and weight and intelligence in normal individuals. As we have already pointed out, these men did not consider the double aspect of all behavior.

Liefmann (133) made a study of school children in relation to their mental and bodily health as compared with their intelligence. Montessori (154) also attempted, as did Binet, to bring the study of mind and body together. These attempts were interesting, but the new dynamic view of life makes a different

approach necessary without denying the fundamental assumptions.

In America the attempt of Doll (34) to use anthropometry as an aid to mental diagnosis is well known. Further attempts in this direction with more emphasis on the whole personality are needed.

i. Body types and disease.

The attempt to correlate body types with various diseases dates back to the time of Hippocrates. That diseases produce typical clinical pictures is known to every medical man. Within recent times the study of disease and body build has become more intensive. It is generally recognized that not all people will have the same disease, but some tend to have certain types of disease, others will have different types. Naccarati (157-161), Pende (169), Draper (36, 37), and others have attempted to carry these studies into the realm of accurate measurement.

This attempt is faced with the same difficulty as faced the older attempts to correlate structure with dynamic traits. Disease is dynamic, and there may be no correlation between these dynamic pathological conditions and the relatively static body build. This difficulty has been met in the same way as in other fields. Body structure is traced back to biological development, and disease, body build, personality structure, and many other aspects of the organism are studied in the light of this development.

Pende has gone farther than any one in this respect, and

represents one of the most complete systems existing at the present time. Pende in medicine and Jaensch in psychology are furnishing the basis for future typology.

j. Difficulties in determining body types.

At the close a few words about the practical determination of body types will be necessary. Since many workers after having used measurements find that their use of simple inspection is just as accurate as the measurements, there has been a tendency to dispense with measurements altogether. This has naturally led to violent criticism of the method. From the practical standpoint, they are right. In preparing scientific works, however, they will have to resort to measurements.

Stockard (211) found that Kretschmer's athletic habitus was difficult to determine. He believes that the athletic type may be engrafted on any type but the extremes. Farr (46) viewed the two extreme types with a mixed group between. He also pointed out that the pyknic men often resemble women, whereas female asthenics approximate the male type. Kollé (117) states that it is difficult to distinguish biometrically between pyknic and athletic women. Pyknic and athletic men can only be distinguished biometrically by the size of the abdomen. Wertheimer and Hesketh (227) emphasize the difficulty of finding clear types in women.

This would indicate that women as a class are less specialized than men. Quantitative tests have failed to show much difference psychologically. The body structure represents

more difference. On a statistical curve women will be shorter, have smaller skulls, tend to be brachycephalic, will show fewer deviations from the normal (supernumerary digits, transposition of the viscera, cleft palate, club foot, color blindness, hemophilia, etc.), whereas men with increasing specialization also show greater deviation in the intellectual sphere. There are more feebleminded among the men, more insane, and, finally, more geniuses. This follows Meckel's law that women are less specialized biologically than men.

k. Body types as used in the present research.

We must now consider how the body build is to be used in this study. There is an overwhelming mass of literature confirming the correlation between body build and the psychoses. There is never a one-to-one correlation, but it is always high. We find, however, that purely objective measures (divorced from time) have not been used. Certain anatomical signs were used and actual measurements were overruled when the time concept was included. Thus, the measurements were made and to these were added the dynamic judgments of men with long clinical experience. While this method is in complete accord with modern methodology, many of the older workers will view it as too subjective, even going so far as to claim that it is unscientific. One fact remains, objective measurements without clinical evaluation are mostly useless, and there is no use to make them, since they in most cases end in failure. Yet this is no reason to rule out one of the most fruitful methods

that has been devised in the history of clinical psychology.

Since there is still controversy about the validity of the method, it was decided not to use body build for determining the type, in this work, but to attempt to throw some light on the problem by finding some relationship between the type and the body build. The Pignet index was used. Henckel, v. Rohden, and Grundler (see Kretschmer (125) all used this index on their material and found complete agreement. When we consider Viola's ontogenic law which establishes a relation between the weight and breadth and the height or length of the individual, we see that the more primitive type would have the lowest index. The index is obtained by adding the weight in kilograms to the circumference of the chest (inhale-exhale mean) in centimeters and subtracting this from the height in centimeters. (See Wilder (240). A glance at the following diagram will show the relationship:

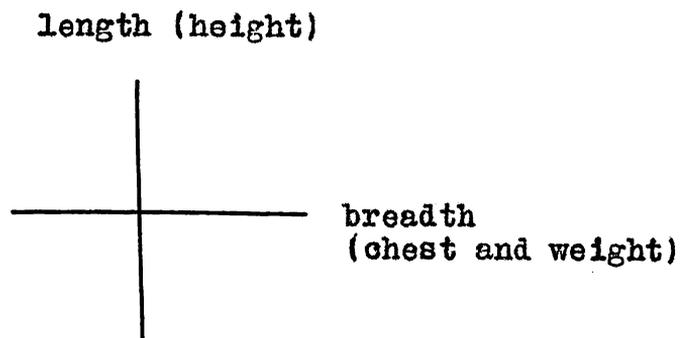


Figure 3. Diagram showing the relation of ponderableness (mass) to elongation of an organism.

The width or ponderableness is made up of the weight and chest measurement. The tendency to elongate is represented by

the height. If both tendencies are in balance, the individual would be as high as he is broad, in other words, he would bend to be round and the index would be 0. Since the primary type represents the least specialized type, his index will tend to fall towards the zero end, the secondary types will tend towards the higher indices. By considering a continuum, every individual will fall along the scale. Thus by arbitrarily considering the scale as ranging from 0-40 with 20 the midpoint, we can classify all individuals as to their body volume.

20

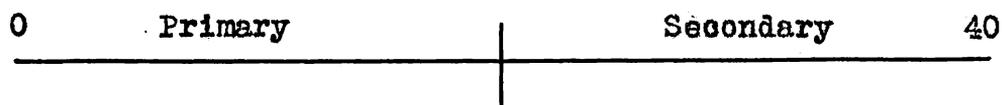


Figure 4. Diagram showing the types in respect to the Pignet index. No division is made for the mixed type.

It must be pointed out that changes in health will greatly effect this index, thereby making it imperative to find how much variation there has been in weight from a previous point in time.

#### 1. Procedure in determining body build.

We can now describe the process of determining the body build. First, the individual is judged by inspection. A general picture of the individual is obtained while standing,

which gives the relationships of the various parts of the skeleton. Stockard's method of determining whether the lateral or the linear lines predominate is used. The angle of the neck and shoulders is viewed. The square angle being more characteristic of the pyknic. Bent shoulders are usually found in individuals tending towards the secondary type. The relative proportions of the lower to the upper part of the body is ascertained. Sometimes this is very difficult, and a knowledge of human anatomy helps greatly in determining the distance from the trochanters to the floor. Pyknic types tend to balance these two heights, while as the individual tends towards the secondary the lower measurements are greater than the upper. This becomes especially noticeable when the clothing is removed and actual measurements are made. The width of the chest is highly indicative, the pyknics having a much rounder chest than the more secondary types.

The shape of the face and skull is next ascertained. The five-point face is characteristic of the pyknic type, the narrow angular face is characteristic of the more secondary types. From the side the pyknics show a flat profile, in the secondaries the nose tends to be prominent and the chin recedes, thereby giving the so-called angle profile.

The hands are also highly characteristic. The typical pyknic hands are quite easy to determine. They are short, pudgy, broad, with wide finger nails. The asthenic hand is long and slender with narrow nails.

The skin is also highly characteristic. This requires some knowledge of medicine, however, or must be obtained by long training. The texture of the primary skin is much different from that of the secondary. The primary skin is vascular, it shows a whiter more pink color. These individuals burn easily in the summer. The skin of the secondary is darker, thicker, and they tan easily in the summer.

From the practical standpoint, these signs are of extreme importance to the personality worker. They aid him in deciding on difficult cases. When many factors in the personality are mixed, some of these accessory signs will aid.

Next the Pignet index is obtained. The height and weight is obtained in the clothing. No correction was made for the clothing. In men it was made under the coat and vest. In women it was made under any wraps that might be worn. This was fairly close to the body and no correction was made for clothing. The inhale-exhale mean was obtained. This index was calculated as described in section k. The present weight was ascertained and the greatest weight at any time in the individual's life was also recorded. This was to ascertain whether the present weight was typical of the individual, or whether he had lost weight at the time of the test.

The above procedure gives the important points in regard to the type. It will be noticed that the procedure goes from the whole to the details. We have given the essential differ-

ences, but it must be kept in mind that few people will have all of them. Most individuals will show perhaps a general tendency for the lateral lines to predominate, the Pignet index is low, but the face may be more secondary in form, and the fingers may be slender rather than thick and stubby. Occupations of various kinds also influence some of the more detailed signs. By going from the whole to the details, however, the general impression is obtained, and the specific measurement must then fit in with this dynamic pattern of the impression. It would be foolish to classify an individual as secondary when the only signs that indicated this are the slender fingers and angular face, whereas the total impression shows a preponderance of lateral lines.

It must also be noted that the mixed type is not included as a special body type. The individual, irrespective of his personality type, is typed for his body build. He will either be predominantly primary or secondary, or he will show a mixture of all characteristics. Whichever way he is, this diagnosis is added to the rest of the results from the technique. If it is doubtful whether an individual is primary or secondary, and if the body build is distinctly primary, the diagnosis of a mixed type will be greatly facilitated, as well as placing the individual on the biological scale. These considerations show that the body build is considered merely a part of a technique, and enters in as an aid, not the final criterion, of the diagnosis of the type.

#### IV. Typological Data

In considering the application of the technique to the wide range of subjects, it must be kept in mind that the results obtained will have a direct practical value which cannot be expressed by means of figures. The qualitative differences in reactions, the insight one gains into each individual personality, and many other points of information are of tremendous importance to the personality worker. These points cannot be considered here, chiefly because the present work is concerned solely with the problem of types, not with the practical investigation of the personality as represented by the individual. Only type differences will be considered. The desire is to make the present work is concerned solely with the problem of types, not with the practical investigation of the personality as represented by the individual. Only type differences will be considered. The desire is to make the present technique as objective as possible, and the figures actually obtained from the subjects will be treated with the idea, not of supplanting experience in the investigator, but of reducing the material to a form readily comprehensible and assimilable to other workers. It must be emphasized again that the data do not prove types, hence statistical treatment with the idea of basing a proof of types of this material is gratuitous. The main purpose, therefore, of this section is to bring out some of the differences found in the reactions to the technique.

## 1. Distribution

### a. Distribution of Normal Subjects.

The first question to be considered is the distribution of types. The number of subjects not in institutions was 185. As has already been pointed out, the types are on a continuum and really should not be considered separately. When they are divided, however, into primary, secondary, and mixed types, the following distribution is found:

Primary	Mixed	Secondary
55 (30%)	107 (58%)	23 (12%)

Table 5. Distribution of types with normal subjects.

The table shows that in the present sampling over half (58%) of the cases fell into the mixed type, whereas 30% fell into the primary group. The low number of secondary types (12%) might be interpreted in various ways. No attempt was made to gain particular types at first, and classes, groups, people who were brought in by friends, and many others were tested. When it was found that there were so few secondary types, the attempt was made to pick out likely secondary people. These usually turned out to be mixed types toward the secondary. Now let us consider some of the interpretations why there should be fewer secondary types.

First, the tendency of the secondary types to withdraw to themselves, to avoid any show or display, to be rather suspicious and sceptical of investigations of their character, would make

this type rather difficult to obtain. The primary types come in readily and of their own free will.

A second possibility might be due to the slower development of the secondary type. Since the secondary type is the most highly specialized, it will take it longer to reach full development. The cases tested showed a wide range of ages, but predominately university students between 18 and 23. It might be assumed that if the same group were tested at 30, the primary types would go over into the mixed, leaving 25% primary, some of the mixed would go over into the secondary making the secondary 25%, and with 50% in the mixed group we should have the normal curve.

A third interpretation would be that the above distribution actually exists, and that if a larger sampling were taken, or even if the same sampling were tested at a later time, there would be no great change in the distribution. It is evident that the distribution is approaching a normal curve. Environmental conditions, education, and other factors of this kind might cause a skewing of the curve in one direction or the other. It must also be pointed out that even using the paper and pencil tests more primary or extravert types are found than introvert types. It is somewhat of a disadvantage to be a secondary of the extreme type, and development may be retarded by the individual himself as he becomes aware of the disadvantages.

A fourth possibility is that university life is not suit-

able to secondary types, and thus only a few are found there. It might be thought that if the general population could be tested, more secondary types would be found. In testing the farmers in the state hospitals, some indication might be found that this is the case. But even there few secondary types are found. The assumption could be made that the real secondary types are the unco-operative schizophrenics. Until some way is found to test these inaccessible schizophrenics, the question must be left open.

The problem might be solved by testing a wider group of individuals. It might also be settled by testing groups at different age levels. The results have, therefore, created a new problem, rather than solved an old one.

#### b. Sex.

It was found that sex apparently played no role in the distribution of types. This means that women do not tend to fall into one type, men into another. There was a total of 94 men and 91 women tested. They were distributed as to type as follows:

	men	women
primary	30	25
mixed	53	54
secondary	<u>11</u>	<u>12</u>
Total	94	91

Table 6. Distribution of normal men and women as to type.

## c. Age

A good range of age was tested for each type, although the majority of the subjects were university students ranging from 18-23. Below indicates the ranges:

Primary	Mixed	Secondary
16-38	12-58	19-36 or 40 (?)

Table 7. Age ranges of the types in all subjects.

Since many primary and mixed types could be found below 20 years of age, it might be viewed as a confirmation of the theory that secondary types represent a more advanced developmental stage. No secondary type was found below 19 years of age. The upper limit could not be stated definitely, since some people do not like to state their ages. 36 years was represented by several individuals, and is about the upper limit. Only one individual, estimated at around 40, came above this age.

## 2. Handwriting.

### a. Time and Size

The data from the handwriting test are of interest both in typology and graphology. The speed and size of the handwriting is of great importance. The question is whether any one feature can be used to the exclusion of others. The type was not based on the following results, but purely on the relative size of the writing. The following table summarized the results.

	Normal time	size	2nd distraction time	size	speed time	size
P.	22"(3.6)	27cm.(5)	21"(5.6)	29cm.(3.1)	17"(2.8)	29cm.(3.5)
M.	23"(4.4)	27cm.(4.6)	21"(5)	28cm.(17.2)	17"(2.6)	28cm.(3.1)
S.	22"(2.8)	23cm.(2.3)	20"(5.4)	22cm.(2.5)	16"(2.4)	22cm.(3.8)

Table 8. Results from handwriting test for normal subjects. The standard deviations are given in parenthesis.

Now let us consider the ranges for each part of the handwriting test.

	Normal time	size	2nd Distraction time	size	speed time	size
P.	15-32"	16-37 cm.	14-35"	18-52 cm.	12-23"	16-47 cm.
M.	15-43"	17-50 cm.	12-44"	19-50 cm.	11-27"	17-51 cm.
S.	17-31"	18-30 cm.	13-40"	16-28 cm.	12-21"	16-28 cm.

Table 9. Ranges for normal types in the handwriting test.

It will be noticed that in every part the mixed type shows the greatest range. This also correlated with the general per-

sonality make-up of the mixed type, which seems to be characterized by extremes.

Another significant point is that the average time does not vary much for the different types throughout the various tests. There is also less difference between the average size of the primary and mixed types than between these two and the secondary. With the primary and mixed types there was a tendency to expand in the average sizes, with the secondary there was a tendency to contract. We thus see that while the types were obtained on the basis of relative expansion of the handwriting, the absolute size also shows the same tendency for the whole group.

Now let us consider the size of the normal writing. 12 cases of the primary type are above the highest size for the secondary. Since this represents 22% of the primary type, it will have a diagnostic value. It will have a negative value, however, since it would merely exclude the secondary types but not the mixed.

With the speeded test 23 primary types exceeded the greatest size of the secondary. This is 42% of the total primary types. Here again it is of negative diagnostic value since it excludes only the secondary types.

With the second distraction 27 of the primary types exceeded the greatest size of the secondary types. This repre-

sents 50% of the primary type. From this it can be seen that the size of the writing with the second distraction has the greatest negative diagnostic value, since 50% of the primary types show a greater size than the greatest secondary. The range for the primary above the greatest secondary was from 28.7 cm. to 52 cm.

It was found that only 1 primary exceeded the greatest size for the mixed type. The size of the handwriting, therefore, will not differentiate between the primary and mixed types, but is more indicative for the secondary, since between 22% and 50% of the primary types write larger than the largest secondary.

#### b. Area.

Of special interest in this test is the area covered by the handwriting. Since each individual was required to write the same sentence, the actual amount of space used for the writing of the entire test can be stated roughly by the amount of paper covered. This does not indicate the actual size of the writing, but merely the amount of paper the subject needed in performing the test.

The ratings were made as follows: First group: those who required 1 page or less; second group: those who required 2 pages or less (but more than 1); and those who required 2 pages and more.

Out of 54 primary types 9 (17%) required 1 page; 27 (50%)

required 2 pages; 18 (33%) required more than 2 pages. The largest amount needed was  $3\frac{1}{2}$  pages, the average being around 2 pages.

Out of the 23 secondary types 18 (78%) required 1 page; 4 (17%) required 2 pages; and 1 (5%) required more than 2 pages. This last case was a borderline case from the mixed type in many other respects, so that this large area was one more indication of the tendency towards the mixed type.

#### Normal Area

	1 page	2 pages (more than one)	2 pages and more
Primary	17%	50%	33%
Secondary	78%	17%	5%

#### Area of handwriting of the Insane

	1 page	2 pages (more than one)	2 pages and more
Primary	41% (10)	25% (6)	34% (8)
Secondary	72% (5)	28% (2)	0%

Table 10. Comparison of normal and insane primary and secondary type in respect to the area of the handwriting.

From these results it can be seen that the primary types show a definite tendency to use more paper than the secondary types. Since 33% of the normal primary types and 34% of the insane primary types covered more than 2 pages with writing, this could be used as a diagnostic criterion for the exclusion of the secondary type. The one case of the secondary type using

more than 2 pages was a borderline case, and by using the area as an added criterion, the individual might be shoved back into the mixed group. The primary insane show a more even distribution as to area than the normal subjects, but this may be due to the smaller sampling. The secondary insane conform rather closely to the normal subjects.

### 3. Rorschach Test.

#### a. Mixing of color and kinaesthetic responses.

Since the division between the types was based on the ratio of kinaesthetic responses to color responses, it will be of interest to consider whether there is a distribution of these responses in the opposite type.

It was found that 28 primary types (51%) gave kinaesthetic responses, but these were overbalanced by color responses. There were 20 cases (87%) of the secondary type that showed color responses which were overbalanced by kinaesthetic responses.

Rorschach considered the color responses as associated with the affectivity and adaptability of the subjects. Since so few secondary types were found in the university population, and since 87% of these showed color responses (adaptability), it might be concluded that these secondaries are more suited for study than others who could not come.

#### b. Mixing of Rorschach and handwriting test.

It will be remembered that any mixing, either in the Rorschach ratio or in the handwriting, threw the individual into the mixed group, i.e. the Rorschach ratio might be primary and the handwriting secondary, and vice versa. It was found that out of 107 mixed types, 50 (47%) showed mixing in the Rorschach ratio, and 56 (53%) showed mixing in the handwriting. One case could not be decided, and the percentage was calculated for 106 cases.

This seems to indicate that the psychomotor reaction as shown in the handwriting test is more primary in the mixed type than the Rorschach ratio. 47% of the mixed type showed a secondary type of reaction in the Rorschach test. Both forms, however, are close to 50%, and the difference found here may be of no significance. Theoretically there is no reason why one test should show the mixing any more than the other.

c. Number of responses.

Another part of the test is of interest. This concerns the number of responses given by each subject. The subject was not encouraged to give many responses, and if he gave more than five or six to a picture he was usually stopped. This was done to conserve time.

It was found that the primary types ranged from 7 to 54 responses. The mean was 22 responses. The secondary types ranged from 11 to 97 (really infinity) responses, with 37 as the mean. Four secondary types (17%) were above the largest primary types.

These results have little diagnostic value unless the number of responses is very great. In this case the primary type is excluded, but not the mixed type.

d. Whole-part responses.

Responses were divided into whole and part responses. The whole response was made when the entire picture was included in

the interpretation. The detail or part response was made when only a part of the picture was included in the interpretation. No speculation was made whether the individual was thinking of the whole picture when he gives a part response, but when the subject points to one part of the picture and interprets this it is called a detail response. The whole responses were recorded in percentage for the types.

The range for the primary types was 18% to 100% whole responses. There were two primary types who gave only whole responses. The average for the 54 cases was 62% whole responses. This indicates that the primary types tend to see the picture as a whole more than in parts. It was also found that 37 cases (69%) gave 50% whole responses or higher. This means that well over half of the primary types (69%) give 50% or more of their responses as wholes.

When we turn to the secondary types it is found that they range from 9% to 85% whole responses. No secondary type gave entirely whole responses as did the primary types. The mean was found to be 47% whole responses. Now taking the number of cases below 50% whole responses, it was found that 14 cases (61%) fell in this group. This shows that well over half of the secondary types (61%) give less than 50% whole responses.

Following is a table of the differences.

Primary -	18% - 100%	average -	62%
Secondary -	9% - 85%	average -	47%

Table 11. Ranges of whole responses in percentage for the primary and secondary types.

Since it was assumed that the secondary type is the most specialized, the increased number of detail responses would fit in with the theoretical considerations.

e. Differences between the types in interpretation.

There was a very decided difference in the way the types interpreted the pictures. The clear-cut primary type had either an immediate response or an immediate denial that he could see anything. After the first response he often considered the matter settled. He was then told to see if he could find anything else. He then would give one or more interpretations and state that he could see nothing more. The entire reaction is characterized by great objectivity. If the primary type states that he can see nothing, it is only a second until he sees something. This initial refusal is entirely different from the negativism found in the secondary types who also refuse at first to interpret.

The reactions of the mixed secondary and secondary types are almost the polar opposite of that of the primary. They take the ward very carefully, examine it minutely, and then give a response. One can see them study the picture in all its details, see their eyes light up when some object is seen, but after several minutes (even running up to 15-20 minutes on a picture) of examination they may state that they see nothing. The primary refuses almost without examination, the secondary refuses after long and deliberate examination. Their entire performance is characterized by extreme subjectivity.

They often give several give several responses for one and the same part of the picture. The primary sees one thing and finds great difficulty in changing this into something else. Some secondaries and mixed secondaries can go on ad infinitum giving responses to one small detail of a picture. They have broken their sharp coherence with the environment, and there is little correspondence between what they see and what they say they see. (cf. Shuey (202)).

One can illustrate this in the following manner. If the responses given by a primary are given to another individual along with the pictures, the second individual finds no difficulty in recognizing what the primary saw. But when the responses from a secondary are given, it is only with extreme difficulty, and sometimes not at all, that one can make out what they saw. Even experienced workers with the Rorschach test find it difficult at times to follow the interpretations of secondary types.

A practical example will further illustrate this point. It was desired one time to have copies made of the Rorschach pictures. Several men were selected who had recognized artistic ability. All they had to do was to copy the originals which were placed before them. When their task was finished it was found that the colors were done excellently, but the shaded sections that were to produce tension and kinaesthetic responses in the secondary types were almost completely lacking. A secondary type looking at the pictures would have the feeling that

they were lifeless, whereas the originals were full of life. This curious result from experienced artists led the writer to make an investigation. It was found that every one of these men was a primary type. They simply had no feeling for movement or tension and could not see the kinaesthetic portions of the drawings. In spite of their good reproductivity, they could not reproduce something that is highly characteristic of the other type.

In general, the impression is gained when giving the test that the primary type sees the picture as a whole, he sees one or two objects and is then satisfied with the result. With the secondary the impression is gained that they dissect the picture and pick out minute details. They can change the picture at will, and many seem able to go on indefinitely. This impression is gained even though the subject does not respond at all.

## 4. Pignet Index.

There was a total of 88 cases measured including the insane. Since there seemed to be some difference between the general bodily condition of the men and women, the index is recorded below for both men and women. The averages are given below.

	Normal		Insane	
	men	women	men	women
P.	17 (12)	27 (10)	10 (3)	23 (4)
M.	19 (42)	28 (48)		
S.	30 ( 5)	30 ( 2)	11 (1)	42 (2)

Table 12. Comparison of the Pignet index in normal and insane men and women. The index is given as a number, and the numbers in parenthesis are the number of individuals measured.

Now let us include the insane group with the normal group:

	men	women
P.	13	25
M.	19	28
S.	27	36

Table 13. Comparison of the Pignet index of men and women combined from the normal and insane groups.

In the above tables we see that the secondary types have the highest average index throughout. In the first table the insane and normal subjects of the mixed type were included together. In all types the women tended to have a higher index

than the men, but they show the same relationship as the men when compared by types. Thus, the primaries have the lowest index, then come the mixed, and finally the secondaries.

Now let us combine all groups together by types. The averages are given as follows:

Primary - 19  
 Mixed - 24  
 Secondary - 31

Table 14. Comparison of the Pignet index of normal and insane groups according to types.

We see that the average index for the primary falls below the middle point of 20 which we arbitrarily set up. The mixed come next, and the secondaries come last with the highest average index.

Now let us consider the ranges for the various types.

	Normal men	women	Insane men	women
P.	9-28	1-47	7-14	9-27
M.	49-45	11-51		
S.	20-40	26-30	11	41-44

Table 15. Comparison of the ranges of the Pignet index for normal and insane men and women.

When the ranges are taken altogether, we find the following:

P. -9-47  
 M. 49-51  
 S. 11-44

Table 16. The ranges of the Pignet index combined from normal and insane subjects according to types.

From the above tables we see that the women not only have the highest average indices, but they also show the greatest ranges in most cases. Just why this should be cannot be explained. It may be due to a tendency for American women to diet.

Of importance is the mixed group. Here we find the most extreme ranges, not only for the men, but also for the women. The range for the men is from a negative 49 to 45, for the women from a negative 11 to 51. This seems to be shown in every thing about the mixed type, they show greater variation in each case.

Of the 10 secondary types measured, only one(11) was below 20. This was a patient who was evidently breaking down into the secondary type from the mixed. He was classified as a paranoid by the hospital, but was considered highly atypical. All others were above 20 as they should be theoretically. The men, in general, conformed in their indices to what would be theoretically expected, whereas the women showed more deviation. In spite of this difference, the general averages conformed to what has already been done with measurements using the Pignet index (See Kretschmer (125) by others

Kretschmer and others have considered the athletic type an intermediate type between the asthenic and pyknic. It is considered as an individual type by some, others consider it a mixed type, and still others deny its existence.

From the present work it is of interest to consider this athletic type in the light of the present typology. To which type does the athletic type of body build belong? Since the types were not obtained by using body build, this comparison becomes of more importance, because the type is based on the Rorschach and the handwriting tests.

It was found definitely that the mixed type did not necessarily have the athletic type of body build. It was found that there was a transition from the pyknic to the asthenic. In fact, all types of body build were found within the mixed group. Not only were all types found in the mixed group, but extremes of body build, perhaps the dysplastic of Kretschmer, were also found here.

In order to bring out the relationship between the athletic type and the mixed type, the following study was made. A height of 5' 10" was taken as a standard, and all individuals of this height or over were brought together. A total of 40 cases was obtained, 2 being women and 38 men. The distribution into types was as follows:

	Men	Women
P.	3 (8%)	0
M.	33 (82%)	2 (5%)
S.	2 (5%)	0

Table 17. Distribution of men and women 5' 10" and over according to types.

It will be noticed that three primary men were of this height and over. All three were extreme borderline cases, and there was some doubt whether to include them in the mixed group or not. This is to be expected, since the types are viewed as on a continuum, and there will naturally be a transition between them. There is a very definite tendency for both men and women who are tall to fall into the mixed group. This bears out the point that the athletic type is a mixed type, but not all mixed types are athletic. This is of extreme importance for the clinician and diagnostician. Experienced clinicians will bear witness to the mixed nature of tall people.

### 5. Significant Questions Showing Type Differences.

In presenting the technique a complete list of questions was used. Since these questions gave an insight into each individual, and were not used directly in the determination of the type, they are not considered here. Several of these questions did show, however, a considerable type difference. The majority of the questions, while often giving a very good insight into the individual, did not show marked type differences. We can consider some of these questions in the following.

#### a. Anger and reconciliation.

The question was asked whether the individual is ever angry. This is followed by the question whether the individual flares up and gets right over it, or whether the anger lasts for some time. This is asked even if the subject replies that he is never angry. The next question is whether the individual is easily reconciled, i.e. makes right up.

	No anger	anger	lasts	quickly passes	grudge	easily rec- onciled
P.	20%	71%	10%	34%	24%	67%
S.	19%	81%	33%	19%	52%	47%

Table 18. Results of questions concerning anger in the primary and secondary types.

These data seem to indicate that anger as an emotion tends to persist in the secondary type. About the same percentage in the primary type report that it passes quickly. The same is true with reconciliation, the primaries show a tendency to hold

a grudge, and less than half report that they are easily reconciled. This indicates somewhat the social attitude of the two types, and coincides with Jung's idea of his extraverts and introverts.

It is also interesting to note that about the same percentage of both primaries and secondaries report that they are never angry. The higher percentage of secondaries who report anger is highly indicative in connection with the general tendency of the secondary type to keep this anger within himself.

b. Morning-Evening workers.

There are some interesting differences between the types as brought out by certain questions. One concerned whether the individual found that he could do his best work in the morning or at some other time (afternoon, evening). Let us review the results.

		<u>Primary Type.</u>					
Morning workers		No difference		Evening workers			
Men	Women	Men	Women	Men	Women		
13	12	4	7	9	5		
Total	25 (50%)	11 (22%)		14 (28%)			
Total 50 cases							
		<u>Secondary Type</u>					
Men	Women	Men	Women	Men	Women		
2	4	2	3	7	5		
Total	6 (26%)	5 (22%)		12 (52%)			
Total cases--23							

Table 19. Morning and evening workers in men and women according to primary and secondary types.

The results can be summarized as follows:

	Morning	No difference	Evening (afternoon)
P.	50%	22%	28%
S.	26%	22%	52%

Table 20. Summary of the results of morning and evening workers according to primary and secondary types.

It was found that there were 16 (44%) women who were morning workers out of 36 women, and 15 men (40%) out of 37 who were morning workers. Only 10 (28%) women were evening workers, whereas 16 (43%) men were evening workers. The women show more morning workers than evening workers.

The difference in types is quite apparent. 50% of the primary types are morning workers and only 28% are evening workers. It is just the reverse for the secondary type, 52% are evening workers and 26% are morning workers.

The next question was whether the individuals had to warm up to their work in the morning, or whether they could begin immediately. It was found that 68% (34 cases) of the primary types (50 cases) could begin immediately, whereas 16 (32%) of the primary types had to warm up.

In the secondary type, 12 (52%) could begin immediately, and 11 (48%) had to warm up.

	Immediately	Warm-up
P.	68%	32%
S.	52%	48%

Table 21. Ability to begin work immediately in primary and secondary types.

While these figures are not from a large enough sampling to draw a conclusion, it appears that the secondary types tend to have to warm up more than the primary types, and fewer of the secondary types can begin work immediately. This slight tendency may be due to the fact that more secondary types are night workers, therefore cannot begin work immediately in the morning.

## 6. Psychiatric Data.

The psychiatric material was obtained from the State Hospitals in Osawatomie and Topeka. The procedure in the present study was reversed from what most personality workers usually use. This was not done intentionally, but came about through the force of circumstances.

Heretofore personality workers have assumed that the extravert is the manic-depressive and introvert is the schizophrenic. Tests are often standardized on this basis. In the present study the writer started out with this assumption, but had no opportunity to verify whether the primary would actually correspond to the manic-depressive and the secondary to the schizophrenic. All the work was done at first on normal subjects, and the results were considered on the basis of this assumption. Later the opportunity came to actually verify whether the assumption held. The writer had already gained considerable experience in dealing with normal subjects on the basis of the test, and the insane were treated in exactly the same way. As has been stated before, the discovery was made that there was a distinct middle group or mixed type, and the relationship of this mixed type to the psychoses became one of the most important developments in the investigation. The results are given in the following.

### a. Distribution.

79 cases were tested in the two hospitals. In practically

all cases they were new admissions and had not yet been diagnosed. There were no case histories, and the writer had little time to observe them on the wards. They were simply typed, and then later the types were compared with the diagnoses. It might be interesting to compare the distribution of the types found in the hospitals with the distribution found in normal life. In both cases there was an accidental sampling, and no attempt was made to influence it.

	<u>Insane</u>	
Primary	Mixed	Secondary
34%	55%	11%
	<u>Normal</u>	
30%	58%	12%

Table 22. Comparison of the distribution of normal and insane subjects.

This similarity in the distribution is interesting. The writer had occasion to diagnose around 40 normal subjects for types used in other experiments. Whenever the distribution was calculated, it was found to conform very closely to the above.

	Men	Women
P.	12	15
M.	19	25
S.	$\frac{2}{33}$	$\frac{6}{46}$

Table 23. Distribution of the insane according to sex.

The above distribution is purely accidental, the writer

Now let us consider the distribution of the diagnoses as compared with the types.

Primary Type.

Manic-depressive	16	
Paresis	1	
Dementia Praecox Paranoid	3	(2 doubtful cases)
Encephalitis	1	
Dementia Praecox Catatonic	2	(1 doubtful)
Unclassified	1	
Dementia Praecox Simplex	1	
Psychosis with psychopathic personality	1	
Arteriosclerosis with psychosis	<u>1</u>	
Total	27	Cases

Mixed Type

Manic-depressive	4	(2 doubtful cases)
Psychoneuroses all Forms	15	
Undiagnosed	1	
Dementia Praecox Hebephrenic	4	(1 doubtful)
Dementia Praecox Simplex	2	
Dementia Praecox Paranoid	8	
Dementia Praecox Catatonic	<u>10</u>	(2 doubtful)
Total	44	Cases

## Secondary Type

Manic-depressive	1
Involution Melancholia	1
Dementia Praecox Paranoid	1 (1 doubtful)
Dementia Praecox Simplex	2
Dementia Praecox Catatonic	<u>3</u>
Total	8 Cases

Table 24. The distribution of the diagnoses according to primary, mixed and secondary types.

Let us first arrange the psychoses according to types. The figures in parenthesis represent the doubtful cases, which were considered doubtful by the staff, not by the writer. The symbols are, Manic-depressive--M.D., psychoneuroses--PN, dementia praecox paranoid form--D.P.P., hebephrenic form--D.P.H., catatonic form--D.P.C., and simplex--D.P.S.

	M.D.	PN	D.P.P.	D.P.H.	D.P.C.	D.P.S.
P.	16	0	3 (2)	0	2 (1)	1
M.	4 (2)	15	8	4 (1)	10 (2)	2
S.	1	0	1 (1)	0	3	2

Table 25. The distribution of diagnoses according to types, excluding all but the so-called functional cases. The numbers in parenthesis indicate the number of doubtful cases.

This gives the distribution including the doubtful cases. By excluding all the doubtful cases we get the following dis-

tribution which we can use in our theoretical considerations.

	M.D.	PN	D.P.P.	D.P.H.	D.P.C.	D.P.S.
P.	16	0	1	0	1	1
M.	2	15	8	3	8	2
S.	1	0	0	0	3	2

Table 26. Distribution of diagnoses according to types, excluding all but the so-called functional cases, and also excluding the doubtful cases.

In order to make a further comparison, another table can be given in which the theoretical distribution is compared with the types. This division will be the manic-depressive group, the mixed group (paranoia, psychoneurotics), and the dementia praecox group, (catatonic, simplex, hebephrenic).

	M.D.	Mixed	D.P.
P.	16	0	2
M.	2	23	13
S.	1	0	5

Table 27. Distribution of the manic-depressives, mixed psychoses, and the dementia praecox group (excluding the paranoid form) according to types.

From the above tables it is seen that there is a very decided tendency for the manic-depressives to fall into the primary group, the psychoneurotics into the mixed, the paranoids into the mixed, the hebephrenics into the mixed, the catatonics into the mixed, and the simplex to scatter along. Table

27 indicates what might be considered the distribution. The high number of dementia praecox forms in the mixed group calls for some explanation (which will be given later).

It is rather important that the two cases appearing in the primary type as catatonics were diagnosed in the same hospital and are both out on parole at the present time. This might lead to some doubt in the case of the diagnoses, especially if the present technique is accepted as differentiating the psychoses according to the personality types. The same is true of the one simplex case in the primary type, who was diagnosed in the same hospital and is out on parole at the present time.

In the light of what has been discovered in the normal mixed types, the present grouping of the paranoids, the psychoneurotics, and the hebephrenics is almost as important as grouping the manic-depressives into one group. The underlying structure of the mixed type permits the appearance of these various forms of insanity which can easily be found in a much less degree among the normal mixed types.

The presence of the 8 catatonics in the mixed group does not seem to fit in as well with the theoretical considerations. The catatonic has been considered pretty well split, although he does retain excellent perceptual contact with the environment. Memory and the other faculties seem to retain their acuity. We must conclude that either the catatonics do not

fall definitely into the secondary group, or the mixed types approaching the secondary group are diagnosed by the psychiatrists as catatonia.

We can give some arguments in favor of the last view. Clear cases of catatonia show mutism, stupor, negativism, autism, *flexibilitas cerea*, and are in general quite inaccessible. It is almost impossible to get these people to cooperate. Those who will cooperate on tests do not show these characteristics to such a great degree, or they have ceased to show them. These are the ones represented in the present study. This might indicate that individuals as they approach the secondary type, who show mixed reactions on the test, tend to show more and more the secondary type of personality. They are not clear over, and yet they show many of the characteristics. Since the existing psychiatric classification is not very dynamic, these individuals cannot be grouped separately from the more acute cases. This would account for the presence of so many catatonics in the mixed group. The one catatonic in the primary group is so doubtful that it hardly need be included.

If this explanation is true, the present technique would be of extreme value in diagnosing and classifying the insane, since their true position could be obtained much better than by a study of the case histories and the ward observation.

All the hebephrenic cases fell into the mixed type. This is very interesting, since the position of hebephrenia is not

known in psychiatry. The Freudian idea is that hebephrenia represents the most highly regressed form of schizophrenia. Since only four cases were tested with 1 doubtful, not many conclusions can be drawn. It might be found that it is the same with the hebephrenics as with the catatonics. The usual hebephrenic is so dissociated that he cannot be tested at all. Those who can be tested may be lighter cases, thus falling into the mixed group.

The present results can offer no solution to the problem. The writer wishes to take the stand that the hebephrenic, i.e. the typical hebephrenic, actually falls into the mixed group. The reason for thinking this way is that the mixed type shows so many parallels in normal life. The writer can muster up a small group of individuals in normal life who show mannerisms, grimacing, posing, silly behavior, and most of the other symptoms of hebephrenia, but in a somewhat subdued degree. This parallel in normal life leads the writer to consider this one of the fundamental characteristics of the mixed type. This would also agree perfectly with the Freudian idea that the hebephrenic is the most highly regressed. It is the mixed type that shows such extremes, both in intelligence and in, perhaps, a return to a more primitive level of behavior.

#### b. Handwriting test.

On the following page is a comparison between the normal and insane results on the various parts of the handwriting test.

		<u>Insane</u>				
Normal		2nd distraction		speed		
	time	size	time	size	time	size
P.	33"	27cm.	35"	31cm.	25"	30cm.
M.	36"	30cm.	33"	30cm.	30"	29cm.
S.	30"	24cm.	25"	23cm.	22"	23cm.
		<u>Normal</u>				
P.	22"	27cm.	21"	29cm.	17"	29cm.
M.	23"	27cm.	21"	28cm.	17"	28cm.
S.	22"	23cm.	20"	22cm.	16"	22cm.

Table 28. Comparison of the normal and insane groups on the handwriting test according to types.

On the whole the insane show slower speeds than the normal subjects. They approach each other more closely in the average size, which is often the same in both groups. Just as in the normal group, the greatest expansion occurs in the second distraction, among the primary insane.

Now let us compare the ranges for the two groups.

		<u>Insane</u>				
Normal		2nd distraction		Speed		
	time	size	time	size	time	size
P.	18-55	20-39	16-76	22-40	15-46	24-42
M.	20-68	20-47	15-74	23-45	14-67	22-47
S.	22-37	20-26	16-32	18-26	14-29	17-25

Normal					
Normal		2nd distraction		speed	
time	size	time	size	time	size
P. 15-32	16-37	14-35	18-52	12-23	16-47
M. 15-43	17-50	12-44	19-50	11-27	12-44
S. 17-31	18-30	13-40	16-28	12-21	13-40

Table 29. Comparison of the ranges for the normal and insane groups on the handwriting test according to types.

It will be noticed that the greatest ranges are found in time for the insane, i.e. they are slower. This agrees with the results of other motor experiments on the insane. There seems to be a tendency for them to be slower than the normal subjects. As was pointed out in the other section, the greatest ranges fall in the mixed groups for the insane just as they do for the normal subjects.

#### c. Rorschach test.

Let us first consider the number of responses. The average for the primary type was found to be 15. The range was from 4-37 responses. The average for the secondary types was also 15. The range was from 5-35.

Insane No. of responses		
P.	15	range 4-37
S.	15	range 5-35

## Normal No. of responses

P.	22	range 7-54
S	37	#angell-97

Table 30. Comparison of the normal and insane on the basis of the number of responses and ranges in the Rorschach test according to the primary and secondary types.

The insane differ considerably from the normal, although there were only 8 cases for the secondary type, there seems to be a tendency for these to give fewer responses than the normal secondary. The small number of cases, however, precludes the possibility of drawing a conclusion from this.

Now let us turn to the whole responses. It was found that the primary types gave an average of 57% whole responses. 18 primary types (69%) gave 50% or more of their responses as wholes. This corresponds to the normal subjects who showed 69% giving whole responses. The range was from 11% to 100%, only one primary giving 100% whole responses.

When we turn to the secondary insane, we find that 62% is the mean of whole responses. It was found that 6 cases (75%) gave whole responses. This differs from the normal secondary types.

Here again the small number of secondary cases prevents any sweeping conclusion. It might be suggested from the results that the approximation of the secondary insane to the primary small number of responses and the tendency towards

whole responses as a proof of the Freudian regression theory. The schizophrenics tend to regress to a more primitive level, which in this case would approximate the primary level. Further study of secondary types will prove whether this is the case, or whether they will show a distribution similar to the normal.

Now let us examine the distribution of color and kinaesthetic responses. Out of 27 primary insane, 21 (78%) showed only color and 6 (22%) showed also kinaesthetic responses which were overbalanced by color responses.

Of the 8 cases of secondary insane, 3 (27%) also showed color responses which were balanced by kinaesthetic responses.

This is a considerable deviation from the normal university subjects. Among the normal primary types we found 51% giving kinaesthetic responses and among the secondary types 87% giving color responses. If Rorschach's assumption is correct, this would indicate that the secondary insane show far less adaptability than the normal secondary types found in the university. On the other hand, the low number of primary types showing kinaesthetic responses is probably due to the lack of education among the insane patients as opposed to the university students. The increase in kinaesthetic responses is correlated with highly specialized mental processes.

Now turning to the mixed types. We find that 19 (44%) showed mixing in the Rorschach ratio, and 25 (57%) in the hand-

writing test. This is in close agreement with the normal results, which showed for the Rorschach ratio 47%, and for the handwriting 53%. This bears out the tendency towards mixing in the handwriting, although there is an approximation to a 50% distribution.

## V. Theoretical Considerations in Psychiatry

Academic psychologists have often brought ridicule and contempt upon themselves by setting up theories and classifications of the psychoses. Clinical psychologists and psychiatrists resent the efforts of academic psychology to theorize about matters when few of these men can go into a hospital and even begin to diagnose correctly. The academic psychologist, in his turn, resents the lack of interest as shown by psychiatrists in his theories, and so there is constant ill feeling between the practical and theoretical schools. It is unfortunate that this is the case, but the fact must be met.

Few theories explain the psychoses, and when the psychiatrist fails in his theories, the psychologist must be especially careful in approaching this difficult problem. Although the psychiatrist and clinical psychologist have failed in explaining or even in being able to cope with the psychoses therapeutically they are in constant contact with these people, and their efforts are from a practical standpoint far in advance of the psychologists. It is from the psychiatrist that most of the prevailing classifications have come.

The problem in psychiatry takes two directions. The first is the question whether the psychoses are distinct entities presenting typical syndromes. Against this view is the generally recognized fact that typical clinical pictures are the exception rather than the rule. If the psychoses were entities

there would not be the transition between them which one finds. Secondly, there is the view that the psychoses are personality manifestations of one disease. If this disease attacks a primary type, due to his personality make-up, he reacts in the form of manic-depressive psychoses. The same is true of the other types. Kraepelin (118) was one of the first to recognize the close association between the personality and the psychoses. One might say as Boven (17) says: "Tell me the personality, and I will tell you the form of insanity."

One thing is common to the functional psychoses; the individuals all suddenly show an inability to adapt to social demands. This they all have in common. Personality differences then become exaggerated, and the various clinical pictures are found. Whether there are several diseases or only one, whether there is an organic or functional disorder cannot be stated. All that remains is to study the personality in its relation to the psychoses.

We have already considered the primary type as less specialized and representing a more primitive level of behavior. It is also quite clear from this why the primary type, when he becomes psychotic, will show maladjustment in the emotional-active sphere, and not in other spheres. We find either an increase in activity with a decrease in consecutive thought

(flight of ideas), or there is an increase in emotional tone (depression) with a slowing down of all higher processes.

Structurally the processes are similar.

As we come down towards the mixed type, there will be individuals who show much the same behavior, but there is an intensification, and the true flight of ideas begins to be replaced by incoherence, jerkiness, bizarre associations, etc. This brings one into the group of psychoneurotics. The systematization of the personality in the mixed type takes the form of delusions of persecution and grandeur. The Freudians claim that paranoia is due to repressed homosexuality. The writer questions the causal relation here, and would consider both paranoia and homosexuality as arising from the same cause.

Gardner (52) has shown evidences of homosexuality in 120 cases with paranoid content. There is no doubt about the concurrence of paranoia and homosexuality, the only question being whether one is the cause of the other. The emotional aberrations in the mixed type could explain the aberrations in the sexual field. The increase in the secondary function could explain the splitting of the personality (schizophrenia) and the systematization of separate fields in the individuals life. This could explain both the delusion of persecution and the delusion of grandeur. There is always a strong feeling of inferiority in the mixed type. His splitting and greater specialization makes him painfully aware of his distance from reality. He finds that he can go off into realms of unreality and lose contact with the practical world. His lack of activity, his inability to think and act easily at the same

time, all make him feel inferior. Everyone has feelings of persecution at times, but this is intensified in the mixed type. The same systematization accounts for the delusion of grandeur, the individual simply does not admit any attack on his ideas, even in the face of irrefutable proof, he still manages to systematize the objections into his system.

Hunt and Guilford (76) by using the reversible perspective have found that the paranoids fall into a group between the manic-depressives and the schizophrenics. This is an added confirmation of the central position of the paranoids.

One other question arises here. A syndrome known as paranoia is distinguished from dementia praecox paranoid form. The difference lies solely in whether the individual shows deterioration. Many individuals show systematized delusions, with delusions of grandeur and persecution, and later go over into the dementia praecox group. A very interesting case to follow in this respect is reported by Polozker (174). This was a homosexual individual who being a male passed as a woman. Pictures show a trend from a feminine make-up to a more masculine as the individual passed over into schizophrenia. This seems to be added proof that the individual first belonged to the mixed type group in which he was homosexual. As he passed over into the secondary group he began to deteriorate and was soon a schizophrenic.

Paranoia seems to be a disease occurring in middle age

rather than early. This would be in complete accordance with the theory that primary types later break down into the mixed group, thus systematizing their lives as they had not done previously. This is also noticed in the body build of a great many paranoids, most of them apparently bring a good pyknic body build with them.

The next step in the mixed group is the neurasthenic who shows mental and motor fatigability and irritability, hypochondriasis, and some depression. Because they are mixed they still show an association between body and mind, with bodily manifestations predominating. One very common manifestation of this group is sexual impotence.

As the splitting increases towards the secondary type, we find the transference of the ailments to the mind. This group shows all kinds of phobias, obsessions, doubts and impulsions, feelings of insufficiency, and anxiety. It is only a step from this condition to dementia praecox. Many psychiatrists look on psychasthenia as the prodromal state of schizophrenia. Often patients are first classified as psychoneurotic, and then later show symptoms of schizophrenia.

As the splitting becomes more pronounced, we reach the last stage or secondary type. Here the manifestations are splitting, autism, shut-in personality reactions, mutism, negativism, resistance, and so on. The body has become emaciated and is called asthenic by Kretschmer.

The hebephrenic group is extremely hard to locate. While it has been considered a part of dementia praecox, it seems to come in the mixed group, probably between paranoia and psychasthenia.

We might set up a table of these relationships.

Personality type	Abnormal deviation
Primary	manic-depressive
Mixed	hysteria neurasthenia psychasthenia
Secondary	paranoia hebephrenia schizophrenia (simplex and catatonic)

Table 31. Theoretical distribution of the insane according to types.

Catatonic excitement seems to be in some respects similar to manic excitement. This emotional outburst is accumulative. Individuals will sit mute and resistive for a year, then suddenly break out in an excited state. After this they return to the same cold state from which they started. This emotional outburst might possibly be a remnant of the older emotional level, which would place them in the mixed group. Judging from the results of the present investigation, this seems to be the case. On the other hand, it may be that these co-operative individuals were more mixed than some of the unco-operative ones. This problem remains for the future.

We have attempted to explain the personality behavior of the various groups, and we have demonstrated that the personality of the abnormal individual is the exaggerated form of that of the normal, but we have not been able to approach the theory of the psychoses. The writer is inclined to view the break-down in the psychotic individual as arising from certain malfunctionings of the central nervous system in connection with the autonomic. The recent work with sodium amytal and other drugs seems to point to this conclusion. This would be in line with the present theory of increasing biological specialization. The problem is one of extreme importance, and should be given more attention than it has been given.

## VI. Final Summary.

In this work 185 subjects (including both men and women) ranging in ages from 16 to 58 years of age, and 79 patients in State Hospitals were typed on the basis of their reactions to the Rorschach test and to a handwriting test devised by the writer. On the results of this grouping certain studies were made.

1. Correlation of type with Pignet index.
2. Correlation of type with psychoses.
3. Correlation of type with a set of questions.
4. A further study of reactions to the Rorschach and handwriting tests other than those used in diagnosing the type was made.
5. Distribution and other points arising from this group material were studied.

It was also considered necessary to go into the problem of types in general. Certain conclusions were arrived at, and a typology for this work was established. These points can be summarized as follows:

1. The type was viewed as a methodological construct. The general dichotomies throughout history furnish the basis for the present classification. The type rests on empirical data but is not derived solely from these data. Lewin's idea of a 'construct' is used here in viewing the type. Since the type was considered more than empirical data, the proof of a type becomes gratuitous because of its methodological definition. This point was also discussed by Lewin and others.

2. 'Primary' and 'secondary' types were introduced to include older dichotomies. This was considered a step in advance, since such terms as extraversion-introversion, objective-subjective, integrate-disintegrate types do not include the entire personality, whereas the use of primary and secondary types was for the explicit purpose of including the total personality. This is justified by the similarities between the various existing dichotomies, although the approaches have been quite different.

3. The theoretical basis for these types was found in the field theory and in organismic biology. The field theorists like Wheeler, Lewin, Brown and others give certain laws for the whole and for the development of the organism. The Jaensch school is also included in this genetic approach. Thus, the primary type is considered the less specialized type, while the secondary represents the most specialized. This does not necessarily mean that all individuals belong to the same type at birth and later develop into other types. The question whether one type can go over into another could not be settled on the basis of this study. Since development takes place in the line of increasing specialization rather than in decreasing specialization, it was concluded that it would be possible for primary types later to become mixed, and mixed types to become secondary. One other source of argument for this view was found in psychiatry. The psychoneurotics tend to develop into schizophrenia, but do not develop in the direction of the manic-depressive psychoses. Paranoia seems to represent such a transition from a primary

type to a mixed type. These points are merely indicated, not proved by the present work.

4. The chief contribution of this view of types seems to lie in the classification of the field of personality work using types. By basing types on biological specialization it is possible to include a wider range of sciences than was possible in the past. The type is a classificatory principle by which individual differences are classified into similar groups. This permits infinite variation, but also emphasizes recurrent similarities.

#### Factual material.

1. The distribution of types seemed to indicate the normal curve. The skew towards the primary end could not be explained. Since the type was based on two tests (the Rorschach and handwriting tests), such a curve might be obtained by chance. It was concluded that this distribution actually exists, since the types correlated with clinical material in such a way that there was a consistent grouping of the psychoses. Another indication that this distribution corresponds to facts is the reference to existing experimental data. The present work was found to correlate with findings as done on other dichotomies.

2. A very important point came out in this work; namely, that the types are independent of sex. In the present work there was almost an even distribution of the two sexes, and no tendency was found for one sex to fall into any of the three groups.

3. Nothing very significant as to ages was found. No secondary types were found under 19 years of age, whereas there were many in the primary and mixed groups under this age. A more elaborate study of the relation of age to the types would be especially valuable.
4. A very significant result was obtained from the handwriting test. It was found that on the second distraction 50% of the primary types exceeded in size the handwriting of the secondary types. This is a verification of the psychiatric study of handwriting, as well as other work done on normal types.
5. The results from the Pignet index, although not as numerous as might be desired (only 88 cases) seem to verify the dichotomy of the Kretschmer types. The increasing index from the primary through the mixed to the secondary type, when all results are averaged, seem to verify the law set up by Viola that elongation and mass are in inverse ratio. The secondary types are thus the most elongated. It was found that women have a consistently higher index than men, although they show exactly the same relations between the types. One other result must be mentioned.

There has been a good deal of doubt whether Kretschmer's athletic type is a type to itself, or merely a mixed type. Anthropometrists have taken both sides. In this work it was found that the mixed types did not necessarily have to be athletic types, although practically all of the athletic types fell into the mixed group. This would indicate that Kretschmer's athletic type is a mixed type, but not all mixed

types are athletic types. This was further illustrated when 40 cases were taken all of whom were 5' 10" or over.

When these individuals were arranged according to types, it was found that 87% fell into the mixed group, and the others represented borderline cases. These findings were considered among the most important arising from the work, and they throw much light on recent studies on body build.

6. A further contribution arising from the study of the Pignet index is the fact that the body build is not sharply differentiated in the types. While there is a dichotomy of body build, this work indicates that this dichotomy does not correspond exactly with the personality dichotomies. The demonstration of this point can be found in the distribution of the body build among the types. While the primary types tend to have the lower indices, and the secondary types the higher, with the mixed group between, individual cases will show some deviation from this, especially in the mixed group. Thus it is possible to find both pyknic and asthenic types in the mixed group. This has led to confusion in workers using the body types, since they have assumed that the body build dichotomy corresponds exactly to the personality dichotomy. The present work shows an error in their reasoning, since the mixed type may have either type of body build.

7. Some interesting verification of previous personality work can be found in the results from questions. It was found that the secondary types tend to remain angry and to hold a grudge. This agrees with E. Enke's work with the psycho-

galvanometer, and with O. Gross' conception of the primary and secondary functions of the nervous system. It was also found that secondary types tend to be evening workers, and primary types morning workers. This again agrees with O. Gross' theory. These are only tendencies, however, and not invariable accompaniments of the type.

8. The distribution of the psychoses according to types proved to be significant. There was a definite tendency for the manic-depressive psychoses to fall into the primary groups, the psychoneurotics and paranoids and hebephrenics to fall into the mixed group. The small number of secondary types tested in the hospitals prevented such a clear-cut division in the secondary group. The most important result is that paranoia seems to belong to a mixed type. This has direct implications for normal mixed types who often show many of the characteristics of the paranoids. The dementia praecox patients falling into the mixed group seems to have a light form and were often released soon after the test. This might indicate a good prognostic sign. Whether the catatonics fall into the mixed group, or whether cooperative catatonics fall into the mixed group, whereas the more severe cases would fall into the secondary group, could not be decided.

There has been a decided need in psychiatry for a more dynamic classification. Often patients have to be placed in groups when they are not at all typical of this group, simply because there is no place else to put them. By including the organismic point of view in their classifica-

tions, it would be possible to arrange them on a series of increasing specialization.

9. Finally, the question of the mixed type was brought out more clearly in this than in any previous work. The mixed type has always been recognized, but it has not been very clearly defined, and it has not been correlated with the psychoses. The extravert-introvert classification with the ambivert as the mixed type recognized the fact of mixture but offered little material for a comparison with wide groups of people. The present technique permits as quick a differentiation of the mixed type as of the two general types. If the Rorschach and handwriting tests are both primary, the individual is primary, if they are both secondary, the individual is secondary, and if either one is one type and the other the opposite type, the individual is mixed. The correlation with clinical material brought out some important groupings. The psychoneurotics, the homosexuals, the paranoids, and the hebephrenics all fell in this group. Since the same manifestations could be found in normal mixed types, this can be considered a very important clinical aid in dealing with some of the problem cases of this type.

## VII. Appendix.

In this appendix we can give a few typical cases in detail. The Pignet index is described on page 139, the procedure of giving the Rorschach test on page 158, and the procedure of giving the handwriting test on page 141. The results from this procedure are given below.

The abbreviations used in the Rorschach test are as follows:

- WF - whole-form - the entire picture is interpreted by its form.
- DF - detail-form - some detail of the picture is interpreted by its form.
- CF - color-form - the color suggests an interpretation and the form completes it.
- FC - form-color - the form predominates, but the color enters into the interpretation
- M - movement or kinaesthetic response - the picture is seen in movement.
- sp - space - the white spaces of the picture are interpreted, not the drawings themselves.

The plates give samples of the handwriting. The entire test is not given in the plates, but only a sample from each part. The average of three trials is given in each case.

## Case 1. Primary Normal.

The subject is a male 5' 6" tall, and shows a pyknic body build from inspection. All proportions tend to be round and harmonious. The fingers are blunt, the hands are broad, the head is round, the profile is flat, and there is a general stocky appearance. The Pignet index is 9. Subject shows a tendency to be bald, although only 26 years old. The

rapport is excellent.

Handwriting test. On the following pages are given the actual results from the handwriting test. By measuring the length of lines we find the following figures:

1.	35.3 cm. 38.0 38.1	av. 37.1
2.	39.3 35.9 41.2	av. 38.8
3.	39.7 40.3 46.1	av. 42.8
4.	41.7 40.1 40.6	av. 40.8
5.	44.3 46.1 49.4	av. 46.6

It will be noticed that there is general expansion throughout, no size falling below the original. This expansion and large size of the writing we have considered as a primary type of reaction

Rorschach test.

The interpretations for the Rorschach test were as follows for each card:

1.	butterfly bat	WF WF	
2.	butterfly	WCF	
3.	part of the anatomy	WF	
4.	b <sup>e</sup> t'le bat	WF WF	
5.	Butterfly rabbit tooth	WF DF DF	(colorless picture)

6. skin of animal candle	WF DF	
7. crab	WF	(possibility that color might have entered in)
8. donkey	DF	
8. moose head	DF	
8. lot of color	WC	
two rabbits	DF	
butterfly	DCF	(blue part of picture interpreted)
horn	DF	
9. men	DF	
vessel	DF	
10. stump of tree	DF	
two small chickens	DCF	(small yellow parts interpreted)
figure A	DF	
flowers	DCF	(brown and yellow portions interpreted)

Total responses 24

Whole responses 10 (42%)

Detail responses 14 (58%)

color responses 1

Color-form responses 4

Rorschach ratio 0 : 5.5 extratensive.

There were no kinaesthetic responses in this test and no suggestion of them. The responses were objective and were influenced by the color. In the color-form responses the subject seemed to be primarily influenced by the color and then by the form.

Diagnosis. Since the body build, handwriting, manner, Rorschach test, and other incidental observations pointed to the primary type, the subject can be diagnosed as a primary type. It must be pointed out that in this work only the Rorschach ratio and handwriting results were used in the diagnosis. When everything else is excluded except



these, the diagnosis is unchanged.

Case 2. Mixed Normal.

Subject is a male, 6' tall, and shows an athletic build. The Pignet index was 21. He was not a pyknic type because of his height and muscular development. He was not an athenic type because of his large build.

Handwriting.

The results from the handwriting test were as follows:

1. 25.3 cm.
2. 25.8
3. 26.5
4. 26.6
5. 26.9

The average lengths of the lines show a steady expansion. This type of response indicates the primary type.

Rorschach test.

The results from the Rorschach test were as follows:

- |                       |      |  |
|-----------------------|------|--|
| 1. butterfly          | WF   |  |
| polar bear looking up | DM   |  |
| back of dog           | DF   |  |
| profile               | DF   |  |
| profile               | DF   |  |
| hind legs of animal   | DF   |  |
| face                  | WF   |  |
| 2. heart              | DCF  | (red spot interpreted)                           |
| beak of bird          | DF   |  |
| spade                 | DapF |  |
| head of rooster       | DF   |  |
| beak                  | DF   |  |
| claw                  | DF   |  |
| gate                  | DF   |  |
| 3. twig               | DF   |  |
| dog                   | DF   |  |
| camp fire             | DFC  | (position of parts and finally color entered in) |

	table	WF
	legs of animal	DF
4.	owl	DF
	head of dog	DF
5.	animal	DF
	profile of dog	DF
	paws	DF
6.	hide of animal	WF
	cat's paw	DF
	butterfly	DF
	bone	DF
7.	hind quarters of animal	DF
	arm and chest of person	
	cent over	DM
	stream flowing down valley	DM
8.	shoulder guards	DF
	animal with long snout	DF
	coat	DF
	ribs	DF
	scarecrow	DF
	profile	DF
9.	antlers	DF
	legs	DF
	claws	DF
	log	DF
	face of animal	DF
	dog	DF
10.	foot print	DF
	" "	DF
	wish-bone	DF
	head of rabbit	DF
	roof of house	DF
	legs of animal	DF

Total responses 49

Whole responses 5 (8%)

Detail responses 44 (92%)

Form-color responses 1

Color-form responses 1

Kinaesthetic responses 3

Rorschach ratio 3 : 1.5 introversive.

The kinaesthetic responses predominate and there were indications throughout of more kinaesthetic responses. For this subject the pictures were more in action than in the

CASE 2.

Normal This is a sample of my handwriting. I hope it is good.

Counting This is a sample of my handwriting. I hope it is good.

Counting Fast This is a sample of my handwriting. I hope it is good.

Attempt Normal This is a sample of my handwriting. I hope it is good.

Speed This is a sample of my handwriting. I hope it is good.

primary types. From this result we can state that the subject showed a secondary type of response.

Diagnosis. Since the subject was primary on the handwriting test and secondary on the Rorschach test, he was diagnosed as a mixed type.

### Case 3. Secondary Normal.

Subject is a female, 22 years old, short, asthenic body build. Her shoulders sloped downward, her fingers were long and slender, her face was oval. The general impression is one of slightness.

#### Handwriting test.

The results from the handwriting test are as follows:

1. 18.9
2. 18.7
3. 18.3
4. 20.3
5. 18.7

The general tendency in this case was towards slight contraction with little variation. The writing was small, a characteristic of the secondary type. It can be concluded that the individual is secondary from this test.

#### Rorschach test.

The results from the Rorschach test are as follows:

1. icebergs WF
2. two elephant heads WF
3. two men standing on balls with their coats flying DM
4. no interpretation



5. head of dog	DF
6. standard with figure on top	DF
7. two heads	DF
8. animals	DF
mountain peak	DF
9. two women	DF
pole	DF
10. figure of man	DF

Total responses 11

Whole responses 2 (18%)

Detail responses 9 (82%)

Kinaesthetic responses 1

Rorschach ratio 1 : 0 introversive

There were no color responses and only one kinaesthetic response. This was very definitely a movement response. The ratio indicates a secondary type.

Diagnosis. Since both the handwriting and Rorschach ratio indicate a secondary type, the diagnosis is secondary type.

#### Insane cases.

Now let us turn to the insane cases. In most cases there was little difference between the normal reactions and those of the insane.

#### Case 4. Primary Insane.

Subject is a female 47 years old. She shows a distinct pyknic body build. She is short, stocky, rather fat, and all proportions are round and harmonious. At the time of the test she was cooperative but highly excited.

#### Handwriting.

The reactions from the handwriting test were as follows:

1. 37.8 cm.
2. 37.5
3. 38.5
4. 37.9
5. 39.3

There is a general tendency for expansion throughout the test. This with the large size are typical for the primary type.

#### Rorschach test.

The results from the Rorschach test were:

- |  |     |  |
|--|-----|--|
| 1. butterfly                                   | WF  |  |
| 2. carbon sketch                               | WF  |  |
| vertebra                                       | WF  |  |
| 3. beautiful pansey                            | WCF | (colors interpreted  |
| butterfly                                      | WF  | (some doubt whether color<br>was included)                           |
| 4. big Santa Claus                             | WF  | (no colors)  |
| 5. jack-rabbit                                 | DF  |  |
| dress  | DF  |  |
| 6. skin from animal                            | WF  |  |
| butterfly                                      | DF  |  |
| 7. hat for baby                                | WF  |  |
| butterfly                                      | WF  |  |
| 8. beautiful colors                            | WC  |  |
| vertebra                                       | WF  |  |
| butterfly                                      | WCF |  |
| man  | DF  |  |
| 9. milder colors                               | WC  |  |
| two shades of green in<br>center               | DC  |  |
| 10. feelers                                    | DF  |  |
| two people, but doesn't<br>want to discuss sex | DF  | (sexual answer)  |
| rats   | DCF | (the brown color influenced<br>the interpretation of a<br>brown rat) |



Total responses 23

Whole responses 15 (66%)

Detail responses 8 (34%)

Color responses 3

Color-form responses 3

Rorschach ratio 0 : 7.5 extratensive

Diagnosis. Since both tests are in agreement subject was diagnosed a primary type. She was diagnosed at the hospital as a typical manic-depressed manic phase.

#### Case 5. Mixed Insane.

The subject is a female 54 years old. She has a distinct pyknic body build. She has a full round face (five-point), her hands are blunt, she is quite fleshy, and shows a roundness in all features.

#### Handwriting.

1. 47.3 cm
2. 42.4
3. 43.8
4. 42.9
5. 41.2

We see that in spite of the large size of the handwriting there is a tendency towards contraction all the way through. This indicates a secondary type of reaction.

#### Rorschach test.

- |                |  |
|----------------|--|
| 1. no response |  |
| 2. devil       | WCF (the red parts of the picture suggested this interpretation) |
| 3. skeleton    | WF   |
| 4. ape         | WF   |



- |                       |     |
|-----------------------|-----|
| 5. bat                | WF  |
| 6. house of some kind | WF  |
| 7. no response        |     |
| 8. heart              | DCF |
| heart strings         | DF  |
| lungs                 | DF  |
| 9. two chickens       | WF  |
| 10. no response       |     |

Total responses 9

Whole responses 6 (66%)  
Detail responses 3 (34%)

Color-form responses 2

Rorschach ratio 0 : 2 extratensive

Diagnosis. The patient was diagnosed as a dementia praecox paranoid form by the hospital. From the results of this test it can be seen that the handwriting was secondary, and the Rorschach test was primary. This indicates the mixed type.

#### Case 6. Secondary Insane.

Subject is a female 19 years old. She is 5' 5 1/2" tall, and her Pignet index was 41. She was thin, her face oval, her hands slender, all vertical lines predominating.

#### Handwriting.

The handwriting test gave the following results.

1. 25.7 cm.
2. 26.1
3. 25.0
4. 23.3
5. 23.5

The average size shows a general contraction throughout. This with the small size indicate a secondary type of writing.

Rorschach test.

- |                                   |    |
|-----------------------------------|----|
| 1. cat                            | WF |
| 2. drawing                        | WF |
| 3. bones of the body              | DF |
| 4. no response                    |    |
| 5. bat                            | WF |
| 6. no response                    |    |
| 7. " "                            |    |
| 8. " "                            |    |
| 9. different objects put together | WM |
| 10. no response                   |    |

Total responses 5

Whole responses 4 (80%)

Detail responses 1 (20%)

Movement responses 1

Rorschach ratio 1 : 0 introversive.

There were no color responses and only one kinaesthetic response. All responses showed blockage and a distinctly secondary type of behavior (non-emotional). Four cards were not interpreted which represented blockages. From the handwriting and the Rorschach ratio it can be concluded that the subject is a secondary type.

The clinical diagnosis was dementia praecox catatonic form. This was a clear case.

CASE 6

Normal This is a sample of my handwriting I hope it is good.

Counting This is a sample of my handwriting I hope it is good.

Counting  
Fast. This is a sample of my handwriting I hope it is good.

Attempt  
Normal This is a sample of my handwriting I hope it is good.

Speed. This is a sample of my handwriting I hope it is good.

### Typical and Atypical Cases.

In the preceding section the results from typical cases were given. Since these are typical cases and not difficult or doubtful cases, it might be well to go through several cases more in detail, and also more from the standpoint of the clinician faced with an unknown subject. The attempt will be made to point out the general routine of diagnosing types as well as some of the difficulties. Let us consider the procedure step by step.

I. First impression and diagnosis of body build. As the subject enters the office to be typed, the clinician can ascertain several important points regarding body build. If the subject is under five feet ten inches tall, has a five-point face or a shield face (as described by Kretschmer) a flat profile, square shoulders, blunt fingers, flesh y in older individuals and fresh (pink skin, healthy appearance, open countenance) appearance in younger individuals, we have a clear case of the pyknic type.

Since there are few individuals who show such clear-cut characteristics, the clinician is called on to add up, so to speak, the characteristics for and against each particular type of body build. There will be many individuals that are so mixed in their body build that a type name for them is impossible. In such cases the Pignet index will aid.

The procedure must be based on the configurational signs rather than on specific individual signs. If an individual shows all the signs of the pyknic type except the blunt fingers, it would be foolish to attempt to call him asthenic

because he has long fingers. Stockard's technique (see pp. 179-178) of determining whether the lateral or vertical lines predominate is a good way to start. If the individual is stocky, or if he is tending to have a slight build, or if he is so young that these factors cannot be seen clearly, we must start from this general configuration. The next step is to see whether the shoulders are square, or whether they are sloping. The pure pyknic type has in young individuals square shoulders, and the carriage is erect. In older individuals the pure pyknic type is characterized by deposits of fat around the shoulders which gives the appearance of slope, but which is simply due to the fat. The endocrinologists consider this deposition of fat a typical pituitary fat deposit.

Very characteristic of the pure pyknic type is the early appearance of baldness. This does not mean that other types do not become bald early, but it is far more noticeable among the pyknics.

Other signs of this type are the vivacity and alertness of the pyknic type. They usually are extraverted and sociable. They may be quiet and depressed, but they still show the same general body build. This point was discussed at great length pp. 64-67. The clinician must be thoroughly familiar with this distinction.

In connection with the above signs the Pignet index is of great service.

Athletic type. This was not considered as a separate type in this work. It is characterized principally by the

muscular development. The height does not necessarily indicate an athletic type, as we have seen in this work. If the individual shows prominent muscular development, is five feet 10 inches tall or over, and if he shows some of the signs of the asthenic type (to be described presently), we can record the fact. It was not considered important in this work whether the individual was sharply defined as an athletic type. Of more importance was the height factor.

Asthenic type. This type is characterized by a slight body build. The face tends to be long or oval, the hands and fingers are long, the chest is narrow, the shoulders are sloping and there may be a distinct stoop, the chin is not prominent and may recede. The forehead tends to slope back and the chin also slopes back, leaving the nose at the center as very prominent. This gives the so-called angle profile as defined by Kretschmer. The vertical lines predominate, and the individual is quite thin.

This type shows more variation than the pyknic type. Thus, it is possible to have a flat profile, but the face from the front will be narrow and thin. The hands may be thick and stubby, although this is much more rare than the slender fingers. The slighthness of this type is one of the most characteristic signs, rather than specific body formations. The type must not be confused with pyknic types that have suffered some ailment and are in a bad physical condition. To avoid this, the subject must be questioned as to the normal weight, and any fluctuations. It might be added that the pyknic type takes on weight quickly and

easily, whereas the asthenic type tends to remain thin in spite of abundant food.

Women as a rule do not conform as closely to the types. Women have a deposit of fat beneath the skin which often gives them a more pyknic appearance than they really have. The Pignet index often shows the disproportion when the inspection fails to bring it out. The only rule that can be given is to be very cautious in diagnosing body types in women, and to rely on the index and on the other tests more than on the general appearance.

The general reaction of the asthenic types is one of blockage. They do not show the same vivacity of the pyknic type. They are more intense, tend to be more formal. If they are emotional, this emotionality will have a peculiar intensity behind it that is lacking in the emotional pyknic type. This distinction can be made clearer when one observes catatonic excitement in a hospital and manic excitement. A clinician who has observed some of the differences can apply them when observing normal individuals. The coldness of the asthenic type is also quite apparent in most cases. The pyknic types are warm, sympathetic, and show excellent rapport.

#### Case A.

Now let us run through the procedure of an actual case. We can call this case A. Mr. A. is 23 years old, is 5' 9" tall, and has a Pignet index of 12. His shoulders are square, his fingers are blunt, his face is full and round (five-point), he has an erect carriage, his skin is pink

and burns easily in the summer. He is vivacious, laughed and joked through the entire test, showed excellent rapport, was friendly, interested, sympathetic, and warm. He was very objective in his responses, and showed an easy flow of thought and action. From this description alone we can see that the subject has practically all of the signs of the pyknic types. A few more details about the subject's life might be added to confirm this. The subject has been active in many professions, knows an enormous number of people, calls people by their first names on short acquaintance, goes easily from one kind of work to another, always has some new idea of what he is going to do. There is a faint suggestion of the flight of ideas found in the manic-depressive.

On the Rorschach test the subject gave a ratio of 1 : 3 extratensive. There was only one kinaesthetic response and three color responses. This part of the test is primary.

On the handwriting test the subject was distinctly primary. The handwriting was large, showed expansion throughout, all sizes being larger than the normal writing.

This case was extremely easy to diagnose, and even an inexperienced observer would be able to find such types almost by inspection.

#### Case B.

We can now consider a case that presents many difficulties. This case was selected from the insane group. The diagnosis of the case by the hospital was so difficult that

even a year after the diagnosis there is still considerable doubt about the nature of the psychosis.

The subject was a white female 29 years old. She was 5 feet 10 inches tall. The Pignet index was not taken. She presented the appearance of an athletic type, with rather large bones. She was somewhat awkward in her gross movements, although in writing and finer movements she showed more dexterity. She had a slight angle profile, and her face was thinner than broad. Her hands were very slender. The impression gained was that she could be classified as Kretschmer's athletic type. She was too tall to be pyknic, and her hands, face and general appearance were against the classification of pyknic. On the other hand, she was well enough filled out not to be included in the asthenic type. She was rather pretty, and presented a depressed but intelligent manner.

The first contact was marked by negativism. She did not want to take the test, she said she was tired (not to me but to the doctor in charge), and wanted to rest. She finally consented and showed keen understanding throughout. She cooperated easily and intelligently, but did not warm up. There was a general feeling of coldness throughout which indicated a more secondary type. From these preliminary observations the writer was inclined to view her as a secondary or mixed type.

We now passed to the writing test. She showed general expansion throughout, and her motor reactions were quite

easy and flowing. This easy flow was characteristic of a primary type.

On the Rorschach test nothing positive was obtained. She gave a ratio of 0 : 0. Her responses were characterized by the greatest objectivity, and there was not the slightest indication of a kinaesthetic response. There was no response to the second picture which contains color, but she did respond to the other colored pictures. No color responses were given, however.

This case was referred to on page 156 in regard to the evaluation of a 0 : 0 ratio. At first sight it seems that the two most important parts of the technique have failed to agree with the facts in the individual's life. This case calls for great nicety of judgment.

Let us consider and weigh the various points. Her body build is not pyknic and not asthenic. She appears more to be an athletic type. We know from the data accumulated in this work that the probability of her being either a primary or secondary type is slight because she is 5 feet 10 inches tall. This height was correlated with the <sup>1</sup>mixed type. The handwriting test is primary and we can accept this as correlating with her easy motor flow. There appeared to be no blockage whatever in her motor reactions. Now in order to classify her as a mixed type, the Rorschach test would have to be secondary in order to offset the primary handwriting. But she gave a 0:0 ratio which we are doubtful about, since it evidently represents a borderline condition.

We decided from the above data that she was a mixed type and diagnosed her as a strong psychoneurotic. The hospital inclined to diagnose her as a psychoneurotic, but several voted for dementia praecox catatonic form. She was released soon after as improved. Later she was returned and showed the same vague symptoms. She was again released and is out of the hospital at the present time.

This case could not be decided clearly on the basis of the handwriting test and the Rorschach test. It could not be clearly decided on the basis of clinical observation and case study. All in all, it represents an extremely difficult problem. This is no argument either against clinical diagnosis or against the present technique. In both cases it is really a confirmation of the problematic nature of the subject.

#### Case G.

Let us consider one more difficult case. Out of around 250 cases only five or six were doubtful. The very fact that they were doubtful was highly indicative of the personality of the individual in question. The following case was one of the most peculiar cases the writer has come in contact with, and the staff at the hospital were of about the same opinion.

The subject was a white male 40 years old. He was 5' 11" tall and weighed 186 pounds. His Pignet index was 0. He was a rough laborer, and showed this in his general appearance. He presented a full round face, blunt fingers, and a full, well filled out body. His profile was flat, and in general appearance he would be classified as pyknic. His height,

as we have seen in this work, would lead us to be cautious in considering him a pure pyknic type, although it could be possible. The fullness and roundness of his body differentiated him both from the athletic and asthenic types.

The subject was friendly, was quick to cooperate, and in many ways showed a distinctly extraverted social attitude. The entire staff was present during the test, and he did not seem to be at all embarrassed. All these factors pointed to a primary type.

On the handwriting there was general expansion and the test can be considered primary.

But when the Rorschach test was given, certain peculiarities came out with great prominence. He constantly gave the interpretation "nature of a human soul." This is a schizophrenic type of response. The perseveration of this response throughout the test was at complete variance to his general appearance. When he was questioned intensively as to why he interpreted the pictures this way, he often wound up with an allusion to colors. The first responses were definitely those of a schizophrenic ("nature of a human soul"), but when he was questioned, he seemed to leave this mental set and showed the primary influence of color.

The question is: Are we to consider him a pure primary, or are we to evaluate the Rorschach test by including these peculiar schizophrenic responses?

Now let us weigh each part carefully. We have an

individual with a distinctly extraverted past history. He still gives the impression of being extraverted. While his height would make us cautious about classifying him as pyknic without further ado, he does show a <sup>e</sup>prponderance of pyknic traits rather than of asthenic or athletic. His handwriting is primary and his Rorschach is a peculiar mixture of primary and schizophrenic fantasy. Objectively, from the criteria used in this work (Rorschach and handwriting), the subject is extremely difficult to judge. But by including this general method of weighing the facts, we might be inclined to classify him as a mixed type.

Now let us consider the clinical history. He was first diagnosed as a manic-depressive. Only one member of the staff suggested dementia praecox catatonic form. On the ward he showed so many atypical symptoms that he was again brought in for diagnosis. The second time one diagnosed him manic-depressive, three dementia praecox catatonic form, and one diagnosed him dementia praecox hebephrenic form.

It can be seen from these two difficult cases that the more factors that are brought in, the more light is thrown upon the difficulties of the personality. While the Rorschach ratio and the handwriting test are adequate for the determination of the type in the great majority of the cases, a few individuals will be so complicated that other factors are necessary. In these two cases the height of the individual played a considerable rôle. Since this was

obtained from the statistical study of the correlation between body build and the personality types, further studies of this kind would aid greatly in the determination of types.

#### Some Warnings for the Clinician.

With the change to the more configurational method of studying personality, some of the difficulties that have arisen in the past will automatically cease. In many cases, however, there will be a tendency to forget this configurational aspect and to return to the more atomistic way of viewing the personality. It is to avoid such a return that the following warnings have been given.

1. Do not view any one feature of the personality or any one test as absolutely indicative of the type. While such a close correlation between some test and the type may exist, it will not be true in all cases, and the clinician must be on guard for just these cases.
2. In regard to body build there is often a tendency to try to correlate some one feature or several features with the type. Thus, the five-point face is often considered an infallible sign of the primary type, and the oval face an infallible sign of the secondary type. This is isolating one group of features from the whole. It is possible to have a secondary type with some other shape of face, although in general the correlation will be high between the oval face and the secondary type. The rest of the body must be

included in the general picture.

3. The appearance of the individual may be very deceptive. For this reason the clinician must wait until the entire procedure has been given before the diagnosis is given. There is danger of viewing the subject as belonging to some type on the basis of the first impression. This would then color the rest of the test. The clinician should take the attitude that he is gaining data from which a diagnosis will be given. It is immaterial what the data are, the final diagnosis must be made with all data and not step by step. This maintains the original configuration.

4. The basis of the diagnosis must rest on factual material and not on impressions. The Pignet index, the Rorschach test, and the handwriting test furnish the nucleus of the diagnosis. Around these come judgments based on practice, experience, and skill. This is true with any technique. They simply aid in determining difficult cases.

5. One caution must be given. The subjects are often convinced that they belong to a certain type, either extravert or introvert, and they may give many reasons why they belong to this type. In some cases they might influence the clinician in his judgment. The data obtained from the test must be viewed impartially, and if they are in disagreement with the subject's judgment, some explanation for this view by the subject must be sought. Usually it is found as a

compensatory mechanism, the subject attempting to compensate for his type by trying to convince himself that he is the opposite type. Jung has also pointed out this tendency.

6. In giving the Rorschach test, it is often found that a subject will say that he sees nothing. Usually a short wait on the part of the tester will suffice to let the subject examine the picture with a subsequent interpretation. A certain deliberateness with the Rorschach test has been found to give the best results. Often the complete lack of restraint and rules makes it possible for the subject to open up, whereas he is inhibited on tests that require the performance in a certain length of time, according to certain rules.

7. As a rule it is better not to give explanations of what the test is for until after it has been given. Questions during the Rorschach test are especially bad, since they often lead the subject to see things that he otherwise would not see. And as with all tests, a friendly attitude on the part of the tester is especially valuable.

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