VI

TEST CONSTRUCTION AND METHODOLOGY

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The preceding chapters have dealt with a variety of clinical problems which demand for their solution tests and techniques which are, in many instances, not yet available. It is therefore appropriate that a chapter be devoted to methods of constructing and evaluating such tests.

Let me remind you at the outset that "of the making of tests there is no end and much methodology is a weariness of the flesh." The purpose of clinical tests is to save time in diagnosis and therapy. In addition, tests have certain long-range scientific and propedeutic values over and above the pragmatically urgent, clinical values. Scientifically, tests are needed to clarify and quantify clinical concepts and outcomes and to provide objective baselines for the evaluation of therapy. From the point of view of training, a graded series of tests can introduce the trainee gradually into the problem of classification, diagnosis and therapy. In view of the shortage of trained personnel, the time consuming personal interview techniques alone can not cope with the present need, and tests are necessary for supplementing trained clinicians.

The tests which are now available for individual clinical use fall into two categories: the intelligence tests and the projective and cognate tests. As far as intelligence tests go,
there is less need for developing new techniques. It is sufficient to clarify and make more practical the tools and methods already available, and notable work in this direction has already been accomplished by William Hunt (8) and his coworkers. In the field of projective and cognate techniques there is a crying need for more direct methods. If it proves to be impossible to develop such techniques and we are thrown back upon the personal interview or the cumbersome Rorschach or TAT approach, the progress of clinical psychology will be slowed up considerably.

The non-intellectual factors which the projective techniques attempt to unravel may be regarded as belonging to the emotional, volitional and attitudinal areas of life. Since much of present day therapy is concerned directly with these factors, psychologists may miss the boat completely if they do not provide tools for measuring these factors. In a recent study of brain operated cases, woeful lack of tools in these areas—where most of the improvement took place—was a source of great embarrassment to psychological investigators.

In an attempt to delimit the areas which are most in need of test construction, we may classify mental life roughly

| Table I |
|---|---|---|
| Types of Mental Content in Relation to Awareness and Communicability |
| Outwardly-reportable (communicability) |
| YES | NO |
| Inwardly-accessible (awareness) YES |
| conscious content | ego-suppressed content |
| super-ego repression | Id |
into four layers—the material which is both (1) inwardly accessible and outwardly reportable; (2) inwardly accessible but outwardly not reportable; (3) inwardly inaccessible but outwardly apparent; and finally, (4) neither inwardly accessible nor outwardly reportable.

The first layer of inwardly-accessible and outwardly-reportable material contains the everyday facts about oneself, the capacities, recognized shortcomings, overt interests, and attitudes which are directly amenable to measurement by either capacity of attitude tests and questionnaires. (Conscious Content.) The second layer of inwardly-accessible but not outwardly-reportable data includes day-dreams, secret wishes, weaknesses, humiliations, embarrassing situations which are not pleasant to reveal (ego-suppressed content).

The third level contains the data which, though inaccessible to the individual himself, is nevertheless apparent to the trained observer. Among such data are included indirect signs and symbols of inner conflict such as tics, blushing, restlessness, arising from unacknowledged ambitions, strivings and other types of repressed material which would cause too much pain and anxiety if they were allowed to come into consciousness (super-ego repression). Finally mental content may exist which at the time of its occurrence is neither accessible to the individual himself nor reportable to others but is nevertheless present within the personality insofar as it is revealed by subsequent reports from therapists. Among these are included such situations as defense mechanisms, emotional dependence of such a degree that the individual has no idea of its existence, and other phenomena for which no grounds for comparison and no framework for reporting are available, e.g., delusions and hallu-
cinations of which the patient may be unaware, experiences of early childhood which occurred before concepts permitting verbal retention existed, etc.

Questionnaires can elicit information on the first level about the data which is both accessible and reportable. There is no technique available now which can get at the last category of neither accessible nor reportable data, except perhaps psychoanalysis or hypnosis. Since these techniques are rather expensive in time and energy and require considerable training, there is definitely a need for new methods which would yield information in a more economical fashion.

The general name applied to the techniques that attempt to obtain information from the two remaining areas of mental life is projective techniques. To be successful, these techniques have to be constructed with a view to certain simple principles and requirements which have been described by various workers (18). The material utilized in any of these techniques has to be economical in both time and effort and should involve no bulky apparatus. The relationship between the subject and the experimenter should be more impersonal than that which is required in transference or in such deep role-taking as is required in psychodrama. The elicited behavior should be limited to one segment of activity so that a recording of the results becomes feasible and a reliable record of this behavior becomes available. Furthermore, the situation should be one which is easily standardized so that results taken at different times with different patients by different examiners could be compared directly and treated statistically.

The procedure utilized in these techniques should involve specific tasks which have a definitely prescribed beginning
and an end. For this reason fingerpainting and play techniques which do not have easily recognizable terminal indicators should not be utilized as projective techniques unless provision is made for the determination of a beginning and an end for the activity. The required behavior on the part of the subject should be limited to a given modality, such as speech or motor responses, and the results should be readily recordable and lend themselves to objective scoring.

The next question to be answered is: do the present day projective techniques meet the above criteria? A careful examination of the outstanding projective techniques fails to reveal a single one which may be rated as satisfying all of the essential criteria. The Rorschach test, which is perhaps the most highly developed in this area, satisfies many of the above criteria. It is economical in time, it is simple to administer, it involves only a tenuous impersonal relationship between subject and experimenter, it is limited to one segment of behavior and consists of a test situation which can be standardized and readily reproduced. The task is specific and is limited to one modality, and a complete record of the task performance can be readily obtained. The area where this test falls short is in the objectivity of the scoring systems that have been provided and in the methods suggested for interpretations. Beginning with Rorschach and Oberholzer and including the other contemporary Rorschach workers, there is general agreement that the scoring in the Rorschach test is intended to yield only symbols of the full-blooded response which are in no way intended to be scores in the same sense as intelligence test scores. The other tests such as the TAT, the Word-Association test, Incomplete Sentence, Bender-Visual Motor Gestalt and
Sorting tests have not reached even the meager level of standardization which has already been achieved by the Rorschach. In recent years, attempts have been made to standardize and objectify each of these techniques, and it is notable that, within the past few months, methods for objective scoring of the Bender-Visual Gestalt test (2, 11), of the Word-Association test (21), and of several other techniques have been forthcoming. What direction are these attempts at objectification taking?

There are at least two directions which may be traced in the objectification of these techniques. First is the attempt to conserve the present tools and provide scales for quantifying and objectifying the clinically-useful methods of scoring now in vogue. Second is the attempt to resolve the complex tests into their components, to the end that the simpler tasks could be scored more directly and more objectively. Let us first examine the first trend, namely that of providing more objective procedures for scoring the old techniques. In general, the procedure here is to make a survey of all the dimensions which had been found useful by clinicians. When such a survey is made of all the different types of scoring variables and qualitative evaluations which the Rorschach gives rise to, it is found that fifty to sixty different dimensions have been utilized at one time or another. The writer catalogued these dimensions of behavior and provided scales for their evaluations (21). These scales were anchored with examples for each step in the scale. Whenever quantification was impossible simple categorization was utilized. These scales have at once the double value of providing objective rating continua for each one of the Rorschach factors and have the second virtue that the work of scoring can be reduced to objective
procedures involving no appeal to intuition. By providing such an objective framework for cataloguing and classifying Rorschach responses, the work of interpretation is not made less dependent on intuition, but this intuition can now play against a solid framework of objective facts rather than against a fragile, nebulous framework of clinically-scored Rorschach factors. This does not remove the need for many years of experience and much exposure to Rorschach methodology, but it does provide both the clinician as well as the research worker with a series of scores on recognizable variables which can then be manipulated either atomistically or in a molar fashion in patterns to determine the type of personality which gave rise to the particular record.

Similar scales have been provided for the evaluation of handwriting specimens (10) and for evaluating performance on the Bender-Visual-Motor Gestalt (2, 11) test. An incidental advantage of such rating scales stems from the fact that they provide a framework for the intercorrelation of results obtained from various personality tests. Most of these scaling devices are at the present time, however, research tools only, since to utilize them regularly in the clinic would involve many hours of scoring and evaluation. In order to answer the everyday demands of the clinic a new type of attack on these tests had to be provided. This attack consisted of reducing the complex stimuli of each of the major techniques into its components. This can be illustrated best by the Rorschach test. Many research workers have noted that the Rorschach cards have such complex stimulus value for most people that any attempt at relating the response to the classic Rorschach determinants of color, form, chiaroscuro are very difficult since it is not always clear what particular element in the stimulus is related to
the response. Furthermore, the task set for the subject in the Rorschach test is very vague and liable to many interpretations. This is no doubt the basis for some of the weird Rorschach responses that normals sometimes give. It is reported that one outstanding authority on the Rorschach after analyzing a record blindly, wrote as follows: "If this record is of a patient, my interpretation stands; but if a normal gave this record, forget it."

Any misunderstanding of the directions or any preconceived notion regarding the value of certain types of response may lead to a result which is totally inexplicable in terms of classic interpretation. In order to avoid both the complexity of the stimulus material as well as the vagueness of the task an attempt has been made, following Rorschach’s suggestion, to establish derivatives of the Rorschach which will attempt to measure the capacity of the individual to respond to the three basic physical determinants: namely color, chiaroscuro, and the contours created by gradients in chiaroscuro or color. In this way we can get the first order reaction to these stimuli before we begin to examine their interaction. One measure which Rorschach utilized and which perhaps is his greatest contribution to perceptual phenomena is the movement response. There is yet no known physical correlate for inducing the perception of movement in a given static visual field even in people who are capable of perceiving movement in such stimuli. In order to examine this type of response, a specific task involving directions for perceiving human beings in movement was evolved by David M. Levy. It consists of fingerpaintings which contain vague human figures. The directions to the subject are simply that he will be shown some people in movement. Can he see them and tell what they are doing? This test has now been
administered to several hundred people and it has already demonstrated its usefulness on two grounds. First, of its own accord it differentiates normals, schizophrenics, neurotics and psychopathic personalities (14). In addition, it has proved useful in the study of personality changes after brain operations, and it has also been useful as a check on the Rorschach, especially in explaining the types of personalities which see movement on these movement blots but fail to see movement on the Rorschach test and vice-versa. Brain operated cases that underwent the topectomy operation, especially those in whom area nine of the frontal lobe was removed, have shown that with the accompanying loss of anxiety an increase in the movement response occurs (14).

In further analyses of the stimulus characteristics of the Rorschach cards, it might be well to approach the question from the point of view of the factors in the cards which account for the particular contours of the percept, i.e., what combination of contrasting effects account for the particular figures that emerge in the percept? There are the following possibilities: contours have been regarded as due to a sudden change in brightness gradients; secondly, they may be produced by the juxtaposition of two contrasted colors; thirdly, they may be produced by black-white contrasts, that is, by uniform black against uniform white. They may also emerge from gradients in saturation. By providing special tests in which the contours are directly attributable to each of these particular means of creating the contour, we can study and vary experimentally each of these factors to note their influence on the emerging percept. The movement blots have been made by producing contours that emerge from sudden chiaroscuro effects, that is sudden alteration in the gradient of brilliance. In a similar fashion a "color
cut-out" test has been prepared in which the contours emerge either from the juxtaposition of colors or from chiaroscuro effects within black or white areas or within the colors themselves. Each one of these blots is rated according to the prevalence of contours and in accordance with the basic factors which produced the contours. Thus far these tests are still in the experimental stage and only three of them have been prepared, namely the movement blots, the color cut-outs and the black-white contour cards. Each of them, however, does seem to yield interesting differentials between mental patients and normals as well as developmental gradients in children.

One additional virtue of this material is that it is possible to utilize also the TAT approach in connection with these tests. For example, after the movement blots have been administered and the responses taken, the examiner goes back to each blot and asks the individual to tell him a story about the people he had perceived in movement; that is, what happened before the particular scene that the subject envisaged, what was happening at the moment and what was the outcome likely to be. These fantasy tests have the virtue of being completely based upon unstructured materials which may prove to be an advantage over and above the stimulus materials available in the TAT cards.

Similar approaches have been reported in connection with the TAT test itself. Thus, in addition to the provision of more objective scoring systems such as those provided by Rotter (13), Harrison (7), and Wyatt (20) for the standard TAT procedure, attempts are now being made to establish derivatives of the TAT which might provide more direct attacks on the variables involved. A recent innovation by Shneidman (15) is to provide a series of 27 backgrounds
into which one or more of 67 human figures may be inserted. The backgrounds consist of the usual settings in which human beings are likely to be found or imagined: living rooms, bedrooms, dream clouds, bridges, forests, etc. and the human figures offer a wide variety of choice—old people, young people, males, females, etc. Since the subject thus constructs his own picture somewhat in the same way that the subject constructs his own world in the World Test of Bolgar and Bühler (4, 5), the story he creates about these settings may reveal more of his inner self than his response to a completely structured picture of the standard TAT type. Another derived TAT technique is to place three pictures before the subject and ask the subject to arrange them in their proper, sensible order. The situation is made somewhat ambiguous in that there are various ways of ordering the pictures but there are only a limited number of such ways since there are only three or four pictures usually in the set (16). Still another direct derivative of the TAT is the Rosenzweig Picture Frustration Test (12) in which the situation is pretty well structured and the response that the subject has to make is placed in a cartoon balloon revealing the degree of aggression, dominance or submission which characterize him in certain trying situations.

A third approach to the problem of creating more objective and more specific tests is through tachistoscopic exposure. This utilizes the well-known principle that ambiguity and formlessness can be created even in a well-defined visual form by shortening the exposure time. Earlier studies have tried to study the visual perceptual process itself by tachistoscopic exposure. But personality factors in visual perception may also reveal themselves in tachistoscopic studies. The study of personality through tachistoscopically-exposed
words has recently come to the fore (3). This derives directly from the well-known word-association technique. In the usual word-association approach the response of the individual to the stimulus-word is the most important item to be studied, examined, and classified. In contrast with this approach the new tachistoscopic method centers upon the stimulus-word rather than upon the response-word. It is the stimulus-word itself which sets off the complex-bound association, while the response-word itself may be simply incidental and is of value only insofar as it may reveal blocking, clang associations, or other aspects of behavior which are tell-tale of an emotional response to the stimulus word.

Stimulus words which are selected either from the case history or from a general list of words which are expected to give rise to emotionally toned associations are presented tachistoscopically at very short exposure times (1/100th to 1/2 of a second) and the following objective measures are utilized in evaluation of the response: First the exposure time required for correct recognition of the stimulus word is noted. Secondly, the type of misrecognition that occurs in the pre-solution stage before the final correct recognition becomes available is noted. Work of this type has been done by Bartlett (1) and more recently by Bruner and Postman (3) and it seems quite promising as a new type of approach to the understanding of the perceptual process in relation to personality. A slight modification of this technique which makes it more amenable to utilization in the clinic with very sick patients is a method developed by Mary Alice White (17) which consists essentially of typing the stimulus-words through 13 carbons and each of the carbon copies beginning with the last is exposed in turn until they become sufficiently clear for the patient to recognize
them correctly. In this way, the tachistoscopic procedure is avoided and much of the virtue of the previous methods is still retained. Similar procedures can be utilized with non-verbal materials, such as pictorial materials or perhaps even auditory stimuli. It should be pointed out that the method is not new and that it has been used previously in the laboratory, but the stress was previously on the sensory aspects rather than on the perceptual aspects; that is, the experimenter was concerned more with the stimulus than with the responder.

There is, of course, a danger of crystallizing the present day techniques too soon. Perhaps we do not have enough knowledge on hand to systematize and experimentally verify many of the hunches and clinical intuitions that are now utilized in the field of projective techniques. But there is also a danger in not crystallizing soon enough the hard won gains in this field. To expect a measure to correspond to all the variegated manifestations of inner life, such as creativity or anxiety, before accepting it as a measure is asking too much. Let us for a moment review the history of the physical sciences with regard to the development of measurable concepts. There was a time when temperature was evaluated in terms of a scale ranging from the hottest day of summer to the coldest day of winter divided into four scale divisions. From these crude early beginnings it is a far cry to present day temperature measurement. Even the thermometer had its difficulty in being accepted as a measure of temperature. It did not always indicate an above-normal deviation when the patient was sick and on certain days when people felt very warm the thermometer did not indicate a correspondingly high temperature.

Both of these objections are important, but, if the ther-
momentum makers had thrown away their instruments because they felt that they were not really getting at subjective warmth, a great loss would have occurred to science. It is only because the thermometer measured accurately what it did measure that it was possible to discover the other elements in subjective warmth which make one feel uncomfortable on a warm day. Perhaps these psychometric scales which have been developed can serve the same purpose. It should not be held against them that they do not tell the whole truth as long as what they do tell is true. Similar incidents must have occurred when the invention of objective time measures came into conflict with subjective time estimates, and probably even in the history of the measurement of length and the measurement of weight. History of science is replete with such events and we should be satisfied that we can find some ways of measuring the phenomena with which we are concerned even though we do not measure their totality. Totality of personality, like totality of experience, is infinite, and no single instrument can encompass its entire range. We have to limit ourselves to circumscribed areas in all personality evaluation, and an instrument which is specific and circumscribed but reliable can in the long run go further than the global measures whose reliability and validity are beyond our ken.

If these scaling methods are to prove to be truly useful, it will be necessary to apply to them the usual requirement of zero points, equality of units, presence of a continuum, singulatness of the continuum and other prerequisites for true psychological scaling. Furthermore, the mere provision of the scale is only the beginning. Methods must be found for validating each scale, and the particular personality correlates, if any, that it corresponds to singly or in patterns.
In this connection a very important difficulty arises from the unreliable nature of present day psychiatric categories. We cannot depend upon these categories for validation of tests because the categories themselves are notoriously unstable and incapable of providing an objective external criterion for item validation or test evaluation. Consequently, the evaluation of personality through interview techniques and through other objectifiable means must proceed hand-in-hand with the creation of instruments for the evaluation of personality characteristics. Perhaps one of the more important methods for such evaluation is the technique developed by Kinsey and his co-workers in the area of psychosexual development. There is no reason why similar techniques cannot be evolved in the area of vocational interests, educational interests, anxiety, obsessive thinking, compulsion, honesty, dominance, personal values, and other personality traits and characteristics which are so important in clinical diagnosis.

One of the neglected areas of diagnostic procedures is that of handwriting analysis. This method has the virtue of obtaining its data in a relatively neutral situation and of providing a permanent record of test material or test product. Recently, methods have been evolved for scaling some of the outstanding characteristics of handwriting, and an attempt has been made to apply them to the differentiation of mental patients as well as to juvenile delinquents (19). These attempts have not proved entirely successful, but they have opened a way for further, more refined research with such techniques.

In addition to the general area of projective techniques, there are other areas now requiring new tools and techniques. There have been many tests which have claimed to
be sensitive to brain injury or brain lesions. Perhaps the most important technique in this area is the one proposed by Goldstein in which it is claimed that patients with organic brain injuries and schizophrenics are less capable of maintaining an abstract attitude in the sorting task than are normal individuals. Recent studies with patients on whom it was possible to obtain performance records before brain operation and subsequent records after operation have failed to find any relationship between sorting test performance and injury or removal of brain tissue. Most of the patients did not alter their performance on the sorting test after operation in a significant way. While this is not conclusive proof of the ineffectual character of sorting test procedures, it does cast severe doubts on the claims that have been made for such tests. A revision of our concepts in this field is urgently called for and the provision of newer sorting techniques such as those of the Wisconsin Sorting Test (9) and of the types of tests utilized in the Columbia Greystone Project (6) may perhaps yield a clarification of the issue of abstract versus concrete thinking. The chief outcome of these brain operations seems to be a change not in intelligence, not in sorting ability, and not in any of our projective techniques, but in clinically-observable lessening of anxiety and tenseness so that a better performance is elicited after operation than before. Up to this time, no generally reliable indicators of anxiety or its loss have been available to psychology.

We now come to the question of what methodologies are available for evaluating the outcome of such testing procedures and their application to clinical cases. The present day statistically-designed experiments provide a much better opportunity than did the earlier experiments for evaluating our experimental variables. However, they are still group-
centered rather than individual-centered. There is a great need today for transforming our group-centered ideas about statistical treatment to individual-centered procedures. Perhaps it might be possible to make an individual-to-group transformation in psychological statistics similar to the point-to-line transformation that is possible in projective geometry, where theorems about lines, that is, groups of points, can be transformed into theorems about points or intersections of lines. At the present time, the only useful technique in this area is that of the psychograph. Unrealistic as it is, and un-definable as it is, it still provides a more useful procedure in the understanding of the wider gamuts of personality than is now afforded by the single score. Perhaps we might go a step further and introduce a new concept, or rather, re-define an old concept in new terms. The typologists have suffered severe set-backs whenever statistical procedures were introduced to evaluate the existence of a type or its distribution. There is, however, a need for the concept of type in clinical work, since by stressing types we get closer to the individual. The general stress of the psychometrician in the past has been on individual differences, but the clinician is concerned not with individual differences but with individual similarities. His primary question is "how much alike are these two patients and are they really sufficiently alike to be classified into one group?"

Statistics may be of some help in this connection. The first step might be to define a type as follows: Whenever a series of tests are given and it is found that a particular pattern or combination of test scores occurs in a given group of individuals with such frequency that it is inexplicable on the basis of chance, we shall call such a combination a type. This type need not necessarily correspond to any psychobiological en-
tity and may simply be designated as a tentative type, but it may provide a means for finding out why it is that a particular group of individuals cohere and what else they have in common. In this way, it may be feasible to find the underlying similarities of a group of schizophrenics or psychopathic personalities. We may thus find the nuclear types and the sub-groups deviating in various directions from the nuclear types. This kind of approach has already been applied to questionnaire material, and definite empirical patterns were discovered which characterized one group rather than another in a statistically-significant manner (22).

Another approach which merits further exploration is that of concomitant variation. It has been demonstrated time and again that certain clinical variables correlate with certain personality traits in a statistical manner; for example, it has been demonstrated that the number of responses on the Rorschach test correlate about .45 or .50 with the intelligence score obtained on the Wechsler-Bellevue Intelligence Test. With the coming of somatic therapy under whose effects personality often changes considerably within a short period of time, it becomes possible to determine whether the given trait, let us say for example anxiety, and a given variable, say uncontrolled chiroscuro responses on the Rorschach test, tend to vary together so that if the patient loses his anxiety he will also tend to lose in the number of chiroscuro responses and vice-versa. Such investigations have rarely been attempted before, but with the coming of the somatic therapies and with pre- and post-operative testing this concomitant variation can be studied. For example, in the topectomy operation (6) there was very little concomitant variation between traits and scores which originally were correlated pre-operatively, but in a few instances it was possible to find measures which co-
varied with changes in anxiety but whose initial level did not correlate with the initial anxiety level. This second dimension of variation in time needs to be exploited in order to understand the dynamic relations between personality trait and test variable.

There is also a need for more sophisticated statistical methodology to make the comparisons necessary in clinical work. For example, it would be highly desirable to develop further the inverse factor analysis approach and to continue work with discriminant functions. By a combination of factor analysis and pattern analysis and the investigation of types as defined earlier we may be able to integrate our clinical findings in such fashion that they become a fruitful basis for further inquiry.

**SUMMARY**

There is need for new types of tests to supplement the present day objective tests that are available to the clinician. These new types of tests are primarily for the areas of mental content which are either hidden from the subject himself, or if not hidden, are suppressed by him because of social and personal reasons. The desirable characteristics of each of these tests were presented and each of the present day projective techniques was evaluated in terms of these criteria. Nearly all of these projective techniques were found wanting on one score or another, and it became necessary to provide new approaches to the evaluation of the old techniques or to create entirely new techniques. With regard to the new approaches to the evaluation of the old techniques, it was suggested that psychometric scaling devices could be applied to each of the many variables which clinicians use in evaluation of such tests as the Rorschach, TAT, Bender-Visual Gestalt
Test, Handwriting Analysis and so forth. In addition, it was suggested that the cumbersomeness and awkwardness of the present day techniques was such that only by reducing their complexity would it be possible to get satisfactory test scores which would be useful clinically and experimentally. One such approach consisted of reducing the Rorschach into its components, giving rise to such tests as movement-blot, color-cut-outs, contour blots and so forth. Another approach, emanating from the word-association technique, is to project a stimulus word tachistoscopically and determine recognition time for correct recognition of the exposed word as well as the nature and character of the mis-recognitions during the presolution period.

Before developing these new techniques and bringing them to a level of standardization which is required for individual diagnosis, several needs must be met. First, we must realize that these techniques will not evaluate the total personality but will be limited to segments of the personality. That such answers are useful though not entirely satisfactory can be demonstrated both from the history of the development of science as well as from the practical use of such techniques at the present time. Eventually, we shall have to provide for these scaling devices such essential elements as zero points, equality of units, and the other desiderata of psychometric scales. The areas in which new procedures can be utilized to great advantage are expressive movement, the interview technique à la Kinsey, and similar approaches. With regard to methodology it becomes necessary to develop new statistical techniques for the treatment of individual data. Among these, the development of rigorously defined types, even though they be tentative types, as a guide for further study is highly desirable, and it is suggested that, at least for the present,
we define as a type any grouping of people who have the same pattern of scores and whose group frequency is greater than would be expected by chance. Another avenue of investigation is opened up through the development of the somatic therapies which alter in a short period of time the traits and characteristics of mental patients. This new dimension of change with time can be related to change in score and in that way a more dynamic relation between test scores and psychological functioning can be established. Such techniques as inverse factor analysis, discriminant functions and pattern analysis can provide methods for integrating present day clinical data.

REFERENCES