THE USE OF PSYCHOLOGICAL TESTS IN GUIDANCE AND EDUCATION WITH PARTICULAR REFERENCE TO PROJECTIVE TECHNIQUES

A DISSERTATION

SUBMITTED TO THE GRADUATE COUNCIL OF WAYNE UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF EDUCATION
IN THE DEPARTMENT OF EDUCATION
WITH A SPECIALIZATION IN GUIDANCE AND COUNSELING

---

by

R. Edward Berman

Detroit, Michigan
1953

APPROVED BY DATE

Adviser

Lloyd Allen Cook 5/4/53

PREFACE

I wish to express my thanks to the members of my doctoral committee, Dr. Mildred Peters, Dr. Lloyd A. Cook, Dr. George Barahal and Dr. Stephen Mamchur for their co-operation throughout the development of my doctoral research. The author appreciates the suggestions and ideas offered by the members of the doctoral committee.

Thanks are particularly due to the chairman of the committee, Dr. Mildred Peters who has been most helpful and encouraging throughout the planning and development of the dissertation.

TABLE OF CONTENTS

CHAPTER PAGE

PART III
PROJECTIVE TECHNIQUES IN GUIDANCE AND EDUCATION

PART IV
SUMMATION--IMPLICATIONS OF PSYCHOLOGICAL TESTING FOR GUIDANCE AND EDUCATION

PART I

INTRODUCTION--GUIDANCE, COUNSELING, AND MEASUREMENT

CHAPTER 1

STATEMENT OF THE PROBLEM

This dissertation consists of four parts. The first part, entitled "Introduction--Guidance, Counseling and Measurement," is concerned with developing fundamental definitions and concepts, specifically the concepts of guidance, counseling and measurement. The role of the teacher in guidance in counseling is considered; likewise, the role of measurement in guidance and counseling is discussed, with particular reference to the field of education.

Part II, entitled "History--The Development of Techniques of Psychological Measurement," has several subsections. The first of these consists of a discussion of the general principles of psychological measurement, which is succeeded by a consideration of basic concepts in psychological measurement. Most of this section is devoted to a consideration of objective tests--intelligence tests, aptitude tests, achievement tests, diagnostic tests and personality tests--insofar as these relate to guidance and counseling in education. This part is concluded with an evaluation of testing programs in guidance and education.

Part III, entitled "Projective Techniques in Guidance

and Education," considers the nature of projection, fundamental concepts related to projection, the history of projective techniques and principles for the design of projective tests. Outstanding projective tests and their relation and application to education and guidance are discussed.

Part IV, entitled "Summation--Implications of Psychological Testing for Guidance and Education," is devoted to a discussion of developments in psychological testing, guidance and education. The development of guidance as a profession and the changing role of the counselor are considered. The major features of objective and projective tests are also compared. The relationship of psychological testing to schools is discussed with some consideration of current trends and implications for the future. A brief summation concludes this section.

This dissertation is an attempt to consider two broad fields, the field of guidance and counseling and the field of psychological testing. Objective psychological tests have long been used in guidance and counseling. Projective tests, of late, have been increasingly utilized in these fields. There is a need for an integration of these two fields. The purpose of this dissertation is to attempt such an integration of these fields, i. e., to demonstrate the relevance of psychological tests of many varieties for counseling and guidance, particularly within the field of education.

CHAPTER 2

GUIDANCE

From a psychological point of view there is a need for guidance whenever there is a complex environment allowing a variety of responses, and a variety of reasons for these responses; also, whenever individuals are unable to react adequately to environmental stimuli.

The progress of science and inventive contributions have vastly complicated and are continuously altering the social and economic world. This increasing complexity has created new and increased tensions and strains, resulting in an intensified need for guidance in a mental hygiene framework.

Schools have expanded their curricula in an attempt to meet the educational, social, and vocational needs of their students; so much so that often the student is confused as to what subjects and activities to choose in relation to what he is best fitted.

Educational institutions, more and more, have come to accept the concept of individual differences, i. e., an awareness of differences in individuals in regard to their potentials for successful achievement. Also, there is a continuously increasing body of information, resulting from

research in mathematics and measurement techniques, applied to psychological problems.

Therefore, the combination of an increasingly complex environment and a growing awareness of the individual and his emotional needs have made guidance in the schools almost inevitable. Techniques of measurement and the recording of observations have provided the foundation for an applied science of guidance.

Definitions and Concepts

A review of the literature reveals no clear cut, generally accepted definition of "guidance." A large number of definitions have appeared in the last few years, and in many of the approaches there is considerable disagreement. There are wide differences in terminology, and Smith feels that much of the confusion stems from improper concepts which are misleading.[1] Traxler believes that not only is there lack of agreement concerning guidance in its totality, but that there is also misapprehension with regard to the main divisions of the guidance field.[2] Wrenn thinks that the word "guidance" has very little meaning left and he believes that the meaning has varied so widely among professional workers that the term should be dispensed with

---

[1]Glenn F. Smith, Principles and Practices of the Guidance Program (New York: MacMillan Company, 1951), p. 2.

[2]Arthur E. Traxler, Techniques of Guidance (New York: Harper and Brothers, 1945), p. 3.

entirely. In its place he would substitute the term "personnel work," qualified by whatever adjectives would be most appropriate, e. g., student personnel work, industrial personnel work, and government personnel work.[3]

It is extremely difficult to try and define all the aspects of "guidance" in a single statement. Therefore, it might be more advisable to think in terms of "guidance services," with a focus on the guidance process and its services to individuals.

In line with this thinking, the Occupational Informational and Guidance Services of the U. S. Office of Education has proposed a definition of guidance which is rapidly gaining wide acceptance. The definition states: "Guidance is the process of acquainting the individual with the various ways in which he may discover and use his natural endowments, in addition to special training available from any source, so that he may live and make a living to the best advantage to himself and to society."[4] They also suggest six activities to be carried on by a guidance program. These are: (1) Occupational Inventory, (2) Personal Inventory, (3) Counseling, (4) Exploratory Use of Training Opportunities, (5)

---

[3] C. Gilbert Wrenn, "The Guidance Movement," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), p. 4.

[4] J. W. Studebaker, "The Occupational, Informational and Guidance Service: A Report of Progress," Occupations, XVII, 7 (1939), p. 587.

Placement, and (6) Follow Up.[5]

Thus the concept of guidance has changed with its rapid growth in the past few decades. Originally conceived and thought of as being essentially vocational guidance (vocational advisement), it was later broadened to take in other categories, i. e., educational guidance, industrial guidance, personal guidance, marital guidance, etc., which were thought of as logical facets of the work.

At present, there is a constantly growing trend to regard "guidance" as a broad concept, taking in the many various types of psychological and social services given by professional workers. This group of services is given to individuals to help them secure the knowledges and skills with which to make the choices, plans and interpretations necessary for satisfactory adjustment in a wide variety of areas. Essentially these services for adjustment are designed for the purpose of making the individual an effective member of society. Basically, the whole guidance process is to be considered as unitary as the lives of the individuals with which it deals.

Relation to Education

"Guidance is an integral part of education. It starts in the home and continues throughout school life and initial

---

[5]Occupational Information and Guidance, U. S. Office of Education, Vocational Division, Bulletin 204 (Washington, D. C.: Government Printing Office, 1939), pp. 29-30. (Gives a detailed description of these activities.)

work life. It serves as a facilitating and integrating agency in all areas of life."[6]

This concept today is generally accepted by many educators. However until recently, the guidance given by most schools was haphazard, with no organized planned program, and depended mainly on the individual initiative of principals and teachers.

The history of education reveals a constant change in educational techniques and practices. The increasing complexity of our society, with its resultant strains, required new techniques and practices to meet the needs of individuals and society. Together with the sharply increased enrollments in recent years, demands for guidance services have been stimulated.

The year 1906 is an important milestone for guidance in education. In this year the Vocational Bureau of Boston was founded, and provided a stimulus for educators who began to manifest an interest in guidance services for pupils in public schools.[7] The following year, in Boston, a counselor was appointed for each elementary and secondary school, and from then on interest in guidance services spread rapidly to many other cities. This movement has grown so rapidly

---

[6]Anna Y. Reed, Guidance and Personnel Services in Education (Ithaca, N. Y.: Cornell University Press, 1944), p. 53.

[7]For a detailed history of the Boston experiment see John M. Brewer, History of Vocational Guidance (New York: Harper and Brothers, 1942), Chapters V and VI.

that, at the present time, nearly all the more modern elementary and high schools attempt to provide some type of individual guidance for their students.

In considering guidance services in schools today it is felt that no school should attempt a guidance program unless it plans ultimately to undertake all phases of it.[8] The reasons for this are quite understandable, i. e., no school can successfully conduct a few selected functions of guidance because basically the personality of individuals cannot be divided into segments. In order that the facilities of the school and abilities and interests of the teachers be used to their maximum efficiency, it is important that the services involved be organized as a comprehensive guidance program.

A basic function of the guidance program is to meet the needs of individuals. To do this most effectively requires the following information and services:[9]

1. Personal Inventory: (Essential to the effectiveness of all other guidance services. It provides a knowledge and understanding of the student's assets and liabilities, and serves as a basis to assist him to make interpretations essential to his plans, choices, and adjustments necessary in developing the educational, vocational, social, and emotional phases of his life.)

---

[8]Traxler, op. cit., p. 3.

[9]Smith, op. cit., pp. 8-9.

2. Informational Sources: (The preparation and use of these sources are very important.)

3. Counseling Services: (This is an essential part of the guidance program. Through this function all other guidance services are focused on the individual.)

4. Follow-up Studies: (An important responsibility of the counselor, and essential to the evaluation of the guidance program.)

In line with the above services, Traxler has suggested a more specific list of the needed information about individual pupils which includes:[10]

1. Home background.

2. School history and record of class work.

3. Mental and academic aptitude of each pupil.[11]

4. Achievement and growth in different fields of study. (The school if possible supplements the class record with objective evidence of achievement based on comparable tests.)

5. Educational and vocational interests of the individual pupil.

6. Special aptitudes.

7. Personality tests. (Of value in the counseling program if used with other information about the pupil.

---

[10] Traxler, op. cit., pp. 20-24.

[11] Nearly all tests of academic aptitude call for a considerable amount of reading and the results are highly correlated with reading test scores.

It is believed that they have not, as yet, been sufficiently developed to be used alone with a high degree of confidence.)

It is important that the early foundations of guidance services be started in the elementary schools. These services are also useful to adults to meet the new problems occurring in a constantly changing environment. In all cases, wherever guidance is provided, careful contacts should be kept with other administrative units in order to provide a continuity of services.

In an ideal guidance program, the end result should be that the individual is: (1) able to understand his abilities and interests and to develop them to their fullest possible extent, (2) able to relate to life goals, (3) able to reach a state of mature and complete self-guidance, and (4) finally, able to act effectively as a citizen of a democratic social order. Thus, guidance is integrally related to every phase of the school.

Guidance services which must be provided by the schools to achieve these results include the following:

A. Providing the individual with cumulative evidence about his abilities, interests, growth, development and limitations.

B. Providing comprehensive information about educational and occupational opportunities and requirements, personality development, effective studying and learning, and other areas in which he needs information not usually provided through the instructional program.

C. Set up means for aiding his placement and adjustment in classrooms, co-curricular and community activities, and in an occupational area.

D. Provide adequate personnel; teachers,

> teacher-counselors, and administrators--who are not only competent in performing and supervising the above services, but also in aiding the individual personally to interpret the facts, and use them continuously in making choices, plans, decisions and interpretations throughout his life.[12]

The relationship of the guidance process to education and vocational adjustment is extremely important. Unfortunately, in many cases, guidance is often deferred beyond the point of maximum usefulness in an individual's career.

Bennett feels that there are at least two major times at which vocational guidance should be emphasized in the school program. The first time should be just prior to the first major educational decision, i. e., at the end of grammar school when the student must make his choice among the high school courses (the goal at this point being a decision on which high-school courses are most appropriate to the abilities, interests and occupational aspirations of the student--rather than an ultimate vocation). The second time is toward the end of the high school career when the postgraduate plan can be charted. (Decision at this point may involve a specific occupational goal, or a specification of the type of further education suited to the individual's ability and in line with the long-term goal). Guidance at these two points is a definite responsibility of school systems.[13]

---

[12]Smith, op. cit., p. 5.

[13]George K. Bennett, "Problems in Guidance in Vocational

The basic concept of a guidance program emphasizes the contrary nature of "incidental guidance." A guidance program involves an integrated series of guidance services, including continuous planning and evaluation. Incidental guidance means services which are incidental to the school's traditional program of instructional activities. It is usually a by-product of the school program, reaching only a limited number of pupils in the school. A guidance program requires planning and practices adapted to the needs of all pupils in the school, with appropriate emphasis on each as an "individual."[14]

School administrators, in general, are becoming more interested in initiating and developing functional guidance programs. However, one of the major difficulties is the lack of specially trained people to head such programs, as well as a deficiency in guidance training by other staff members. Some of this difficulty may be due to the fact that guidance services are still, in many schools, regarded as incidental to the instructional program. A fallacy exists, in these cases, that guidance and instructional services are identical processes. This grows out of failure to recognize counseling as the service around which

---

and Technical Training," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), pp. 222-23.

[14]Leslie L. Chisholm, Guiding Youth in the Secondary School (New York: American Book Company, 1945), p. 9.

the guidance program must center, with all other services planned and performed to augment the counseling process. Thus, the current problem is to establish the exact role and place of guidance in the school program.

Guidance cannot be considered the work of a few specialists. It involves services from the entire school staff, requiring some people with special skills, but enlisting the cooperation of all. Also guidance is not limited to vocational matters. It includes all of the student's problems. In good education, guidance services from understanding teachers, principals, and counselor starts from the earliest grades onward and continues throughout the individual's education.

CHAPTER 3

COUNSELING

Definitions and Concepts

Surveys of counseling programs and practices in educational institutions reveal no clear cut universally accepted definition of the counseling process.[15]

Wrenn defines counseling as, "A process involving a professional relationship between two people in which the counselor uses various procedures of appraisal and therapy in an attempt to understand and to assist the client to a better level of self-understanding and to a self-determined solution of his problem or need."[16]

Smith further emphasizes this person to person relationship as "counseling," with the interview recognized as the setting in which the counseling process takes place.[17]

Darley also defines counseling as, "A process in which information about the individual and about his environment is organized and reviewed in such a way as to aid him in reaching workable solutions to a variety of adjustment problems

---

[15]John W. M. Rothney and Bert A. Roens, Counseling the Individual Student (New York: William Sloane Associates, Inc., 1949), p. 1.

[16]Wrenn, op. cit., p. 5.

[17]Smith, op. cit., p. 18.

in a normal range of belief."[18]

Counseling is regarded, in general, as a specialized phase of the guidance process,[19] and by many in the field as the most important single personnel function in the entire program.[20]

A review of present educational guidance practices indicates that basic principles, purposes and techniques have, as yet, not been clearly formulated. Many times basic counseling purposes are presented vaguely, so that they seem to incorporate every objective that had previously been assumed by general and vocational education. Or they may go to the opposite extreme and be narrowly and specifically defined as strictly assistance to students in the selection of a vocation. Therefore, the methods and techniques designed to serve these purposes may range from administering test batteries to students who are about to graduate to intensive study of all students throughout their school careers.[21]

Educational institutions vary widely in their approach

---

[18]John G. Darley, "The Functions of Measurement in Counseling," ed. by E. F. Lindquist in Educational Measurement (Washington, D. C.: American Council on Education, 1951), p. 68.

[19]Ibid., p. 68.

[20]Wrenn, op. cit., p. 7. For a dissent with this view see Rothney and Roens, op. cit., p. 6. They feel that all common guidance and functions are contributory to the counseling process, and that all such activity should be subsumed under the general term of "counseling."

[21]Rothney and Roens, op. cit., p. 2.

to counseling. Some employ a specialized individual, or set up a clinic, bureau or department. Some may work as part of a team with other school personnel; others completely isolate themselves and proceed as if the counseling process were one which can be divorced from all other aspects of education and life.

Some educational institutions attempt to provide individual service in every class and every extra class activity. Other schools attempt to meet the counseling need in the homeroom or in other special groups. Some try to individualize the whole process, and others attempt a combination of group and individualized techniques. Also, there are still large numbers of educational institutions that have made no attempt to introduce any counseling service.

Counseling has changed considerably in purpose and function during the last few decades. It covers a broad range of planning and adjustment problems. It has changed from a matter of simple counseling of individuals to a complex program of inter-related services, involving personal relationships and internal adjustments, as well as a concern for the services and environmental stimuli which can contribute to the total growth. Thus, counseling has progressed from simply furnishing answers to questions to the more complex and dynamic concern with the stimulation of the student to growth in the power of self-decision and

more mature behavior.[22]

Students are often faced with a wide variety of personal and social problems. Transition from elementary to high school, and high school to college or job involves new independence, and new social relationships and competition. Family relationships often change, and different social customs must be assimilated. The person as a whole is involved in this continuous process of adjustment and readjustment. During this period emotional disturbances, neurotic behavior patterns, and similar maladjustment processes may develop in the individual. Thus, according to Wrenn, "...the chief function of counseling is that of therapy or assistance in some form or other."[23] Real therapy involves a change of attitude accepted by the person to the end that he is better equipped to deal with himself and to make his own decisions.

An understanding of the individual is a prerequisite of therapy. Measurement is a tool used by the counselor when he is attempting diagnosis preparatory to his functioning as a therapist. The functions of diagnosis and therapy play into each other and are not consistently discrete. Also it must be understood that measurement is only one phase of diagnosis, and that diagnosis involves many procedures which are not considered as measurement pro-

---

[22]Wrenn, op. cit., p. 6.

[23]Ibid., p. 7.

procedures, i. e., diagnosis includes an interpretation of a pattern of information of which objective measurements may be only a part.[24]

Counseling, therefore, is to be understood as a process involving complex psychological procedures. It is a professional function and must be approached carefully. In our highly structured educational system the counselor is considered a specialist in the diagnosis and treatment of the wide variety of the problems which may be presented by the students.

Many factors have contributed to our present performance of clinical counseling. These may be briefly listed as follows:[25]

1. Psychoanalysis: helped to give us a better understanding of the individual, the potency of human drives, the early origin of conflicts and frustrations, and developed various therapy procedures.

2. Objective and Projective Testing: supplied data on on interests, intelligence, aptitude, skills, achievement, and personality evaluation.

3. Statistical Analysis: analysis of traits and their inter-relation have contributed greatly to a better understanding of what we call personality. Recognition of the personality as a dynamic whole has contributed greatly to

---

[24] Ibid., p. 8.

[25] Ibid., pp. 7-8.

our development of clinical procedures from which we get more meaning from informational data.

4. Clinical Medicine and Child Guidance: contributed to the clinical interpretation of data and to the clinical treatment of the individual.

The rapidly increasing emphasis on diagnosis and therapy, as a counseling function, has created some confusion as to the distinction between counseling and clinical psychology and psychiatry. That counseling is becoming more clinical in its approach is quite evident. However, at present, counseling differs from clinical psychology and psychiatry in (1) its concentration on the normal, (2) breadth rather than depth of service, (3) use of a larger number of tools and techniques, (4) its greater need for cooperative relationships with other agencies, (5) its recognition of the socio-economic variable, and (6) the fact that it has roots in other disciplines than psychology.[26]

The scarcity of trained people and strained economy of many of our school systems have given emphasis to programs of "group counseling." However, there is much disagreement in the literature with regard to its role and effective functioning. General consensus, based on the definition of counseling as a one-to-one relationship, in which the individual is assisted to become self-directive, is that

---

[26]Clarence W. Failor, "Distinguishing Marks of Counseling," Occupations, 30 (1952), pp. 260-63.

group counseling by its name denies the concept of the "individual," and thus it is difficult to reconcile it with present counseling procedures.[27]

It is admitted that some group counseling techniques may serve some daily functions. However, most writers place group counseling in a secondary role.[28] This does not preclude instances in schools wherever the teacher is "guidance minded," and where this type of counseling may be quite effective. However, a basic question here is of training and skills, and the majority of teachers, at present, are not equipped to do an adequate job.[29]

Hoppock feels that the whole principle of individual vs. group counseling is one of concept rather than terminology, and if group counseling were accepted as an effective procedure, there would be difficulty in justifying counseling services for individuals. In this case it would be a great loss for the pupils for whom counseling services are now provided.[30]

---

[27]Rothney and Roens, op. cit., p. 3 and Jane Warthers, High School Personnel Work Today (New York: McGraw-Hill Book Company, Inc., 1946), pp. 145-49.

[28]Rothney and Roens, op. cit., p. 3 and Smith, op. cit., p. 19.

[29]Reed, op. cit., pp. 219-74. (Gives a good discussion of group guidance.)

[30]Robert Hoppock, Group Guidance Principles, Techniques, and Evaluation (New York: McGraw-Hill Book Company, Inc., 1949), p. 133.

Role of the Counselor

The professional guidance worker is the counselor. Smith defines the counselor's role, "as that of aiding the individual to learn how to interpret the facts bearing upon his problem so that he will become increasingly self-directive through development of the ability to make effective his plans and solve his problems."[31]

Darley believes that

> The counselor is essentially a clinician who, generally, deals with one student at a time, and sees the student against the background of the competitive demands to be met not only in the particular institution but also in the life situations beyond the institution, and employs with that student the most effective diagnosis and therapeutic skills he possesses.[32]

A major function of the counselor is that of providing leadership in the development and operation of the guidance program. He should, on the basis of his training and experience, be able to give it direction. He should, also, be able to obtain the active participation of other staff members in accordance with their interests and abilities, to assist in providing the services which make up the guidance program. His role is that of a coordinator in working with teachers, administrators, parents, and representatives of community agencies and organizations in coordinating their activities related to the needs of pupils, teachers

---

[31]Smith, op. cit., p. 18.

[32]Darley, op. cit., p. 70.

and adults in the community.[33]

The environment in which the counselor works will, to a degree, condition his technique, activities and his objectives. In order for counseling to be effective, all the activity and personnel functions in a school must be coordinated and integrated. This is best accomplished, where the size of the school permits, through a department under the direction of a well-trained counselor.[34]

It is important that counselors be completely democratic in outlook and action. They should be well grounded in psychology so that they can select, from the information available concerning a student, the significant items which can be used. They must have a well rounded training and experience with tests and measurement in order to select, administer and interpret these devices to obtain the maximum knowledge and usefulness which they can provide. Counselors should also have some work experience outside the classroom. However, it is important that they know the field of education and the classroom situation.

The counselor, in a school, is a staff member of an educational system. As such, he works within the boundaries laid down by the prevailing attitudes and institutional

---

[33]C. E. Erickson, Practical Handbook for School Counselor (New York: Ronald Press Company, 1949), pp. 146-47, 167-68.

[34]The department should be composed of counselors whose number will be determined by the student population. A suggested ratio is not less than one counselor to each 350 students.

mores. He may not be in complete agreement with them and may recognize their limitations, but he must be able to adapt himself so that he can carry on his functions within the institutional framework in which he works.

With respect to the institutional context in which the counseling is conducted, it should be remembered that the counseling process, and the related activity of measurement, will be affected by the dominating institutional purpose. Thus, if the major aim is selection, recommendation or advisement for a particular institutional objective, the procedures of counseling and measurement may be different than if the major purpose is more general, or more concerned with the individual growth and development.[35] Also, the selection of techniques for collecting data will be determined by the nature of the problems that each individual presents. An individual may be studied for many different reasons, and these reasons may be changed as the counseling proceeds.

Because of his training and clinical experience, the counselor is usually more actively concerned with a greater variety of phases of the whole individual's behavior than is the educational system itself. He must view the adjustment of each individual student in the light of multi-dimensional criteria. In his work he may attempt to predict many things for each student, e. g., (1) success, as measured by grades earned and requirements completed, (2) success, as measured

---

[35]Darley, op. cit., p. 70.

by individual satisfaction and staying power in occupational tasks, (3) outcomes of remedial programs, (4) effective social adjustment of the individual student, as influenced by social experience and growth during the school years, and (5) effect of emotional conflicts on the emotional growth of the individual student.

Role of the Teacher

Teachers have an important role in the guidance program. A guidance program can never be successful, no matter how carefully it may be planned, if teachers are unsympathetic or incompetent, for it is the teacher who meets every child every day.

Though the teacher may not have the time, interest or preparation for counseling, he still has important responsibilities in other services of the program. He is in an advantageous position to acquaint pupils, parents and citizens in the community with the school's program of educational activities. However, he must be prepared to perform this important service for the school.

Teachers, also, have many opportunities to observe and record significant pupil behavior and to discuss with them their needs, interests, plans, and problems. Essentially, teachers have two major responsibilities with respect to the collecting of information about pupils: (1) to gather and record information helpful to other staff members, and

(2) to use the data collected for understanding the pupil and his needs and interests which may be met in the classroom. An important consideration in effective teaching is the utilization of information which will provide direction in modifying teaching techniques and subject matter in relation to the capacities, interests, and needs of individuals.[36]

Many people believe that because of the important contributions which teachers may make to the guidance program that every teacher is a counselor. The duties and responsibilities of the counselor previously described suggest the impracticability of the concept that every teacher is, or should attempt to be, a counselor.

Many teachers could probably serve effectively as counselors if given the training, experience and interests essential to the counseling function. It is difficult to draw sharp lines of distinction between the competencies and functions of the counselor and the teacher-counselor. The teacher-counselor is usually a classroom teacher with a limited time provided for counseling. Essentially the abilities needed by teachers which are directly related to counseling are: (1) skill in interviewing, (2) the ability to recognize and interpret pertinent information about pupils, and (3) skill in using sources of information related to their respective subject-matter fields.[37] How-

---

[36]Smith, op. cit., p. 97.

[37]Ibid., pp. 270-74.

ever, it is important that the functions of teachers directly related to the counseling service represent only a few of the services performed by them in the total guidance program.

CHAPTER 4

MEASUREMENT IN GUIDANCE AND EDUCATION

Concepts and Purposes

Instruments of educational measurement are basically the means by which qualitative aspects of human behavior are observed with greater accuracy. To the degree that these instruments conform to the principles of quantitative logic, they can contribute more exact information with regard to the relationships among the various aspects of educational procedure, the aptitudes of students, and changes in human behavior.[38]

The purpose of educational measurement is to make possible a greater and more accurate prediction and control in the educational process. To a large degree, the value of measurement depends on the extent to which the relationships established are crucial from a social viewpoint, e. g., (1) What is a desirable behavior change and how can it be measured? (2) Are there certain aptitudes essential to the development of a particular form and level of behavior? (3) What are the most important elements of the educative

---

[38]Walter W. Cook, "The Functions of Measurement in the Facilitation of Learning," ed. by E. F. Lindquist in Educational Measurement (Washington, D. C.: American Council on Education, 1951), p. 3.

process? The validity with which these questions are answered will determine the value of educational measurement.

Research in the field of measurement has made such progress that it has quite firmly established itself as the chief source of information in the guidance process. Thus, today it is generally accepted that individuals may be greatly assisted in their choice of studies and occupations through measurement of individual ability, achievements, and personality. The main objective of all education is "learning." In the educational sense, "learning is the process of changing human behavior in socially desirable directions."[39] Utilizing this broad interpretation, it is evident that all the functions of educational measurement are concerned either directly or indirectly with the facilitation of learning.

Functions in Education

Measurement has assumed an increasingly important role in education in the past few decades. Some of the major functions of measurement, in relation to education, may be outlined as follows:[40]

A. Educational Placement: Based on two major functions of education, (1) the integrative; concerned with

---

[39] Ibid., p. 4.

[40] Ibid., pp. 5-45.

individual aptitudes and designed to make people alike in language, values, social adjustment, etc., and (2) the differential; designed to make people different in their ability for preparation for specialized professions. Educational measurement, in the first, is concerned with the adaptation of the curriculum to the aptitudes and abilities of the students; and in the second with selection in terms of ability to succeed in an established curriculum.

B. Improvement of Instruction: Based on the recognition that educational objectives will be emphasized in the classroom if the extent of their realization is measured periodically. Also, students learn most effectively the things that are tested. Thus, their measurement instructional procedures can be modified and improved. Tests have also been useful in clarifying objectives and making goals more definite and meaningful. Thus, tests have affected selection of content and the organization and nature of learning experiences. Attention has been focused on achievement and method has become a means rather than an end.

C. Improvement of the Learning Situation: Based on the fact that measurement is a fundamental tool of educational research. Measurement has contributed greatly to what is known regarding human growth and development, the nature and extent of individual and trait differences, learning process and dynamics of group behavior. Information thus gained serves as a basic foundation in the critical examina-

tion of the objectives, procedures and basic assumptions of prevailing school organizations. For the interpretation and use of test results in school situations the following information is required: the functions of measurement in (1) established learning situations applied to the needs, abilities and potentialities of the individual student, (2) the diagnosis and alleviation of specific learning difficulties, (3) the motivation and direction of learning experiences, and (4) the development and maintenance of skills and abilities.

D. Improvement of Educational Practice: Studies suggest that through measurement it may eventually be possible to place the student with the right teacher, books and set of problems to meet his needs for the greatest possible achievement and adjustment. Teachers' attitudes have been successfully measured and this information is useful in securing the desired social climate, as well as in teacher selection.

Educational measurement has assumed a leadership role with regard to educational practice which, on the whole, has proven effective and beneficial. Some of its major contributions have been: (1) Analysis of educational objectives, (2) classification of educational objectives to teacher and student, (3) determination of the status of learners in specific areas, (4) increased emphasis on method as well as content, (5) focused attention on child development and

human growth, (6) aided in motivating and directing the learner for most effective use of his effort, (7) served as a guide to a more effective school organization, and (8) aided in proper selection of materials and facilities.

Functions in Guidance and Counseling

The use of psychological measurement in counseling is related to two general types of problems: (1) individual problems of adjustment, orientation and development that are brought to the counselors, and (2) group problems of growth, achievement, educational selections, and classification of students which occur in all educational institutions.

The applications of measurement are derived from the basic need for comparative objective data on individual behavior. Some of the major uses of measurement instruments may be summarized as follows:[41]

1. The objective appraisal of personality for better self-understanding and self-direction on the part of the individual himself.

2. The accurate comparison of individual performance with the performance of others for the purpose of selection, recommendation, and self-understanding.

3. Improved basis of prediction as to the likelihood of success in any activity in which prospective performance

---

[41]Darley, op. cit., p. 71.

can be measured and compared.

4. Evaluation of personal characteristics in relation to characteristics required for educational and occupational performance.

5. Evaluation of achievement and growth; individual and group.

6. Disclosure of capacity and potentialities.

7. Diagnosis of mental disability, deficiencies, and aberrations.

The use of tests in guidance can also be justified on the basis of economy, objectivity, reliability and validity.[42] However, in utilizing tests the counselor must be aware that many of the most commonly used measuring instruments have not been empirically validated, and validity studies of these instruments are needed. Guidance workers should be trained to seek and to use critically evidences of the validity of the measuring devices which they employ.

The school is usually the major source of test data concerning most pupils, and there is a definite need for a systematic checking of these data as random test data are seldom adequate for supplementing other information about pupils. In the counseling process test scores can provide important information about the individual student. Yet it

---

[42]Harold A. Edgerton, "The Place of Measuring Instruments in Guidance," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), pp. 51-57.

must always be remembered that tests are only tools for use by the skilled worker in human relations. They are not a solution in themselves, but only of supplementary (though important) value in relation to all other information available. Also, one must be aware that tests, in improper or unskilled hands, can be very harmful. Their usefulness, at all times, is dependent on the person who uses or interprets the tests.

PART II

HISTORY--THE DEVELOPMENT OF TECHNIQUES OF PSYCHOLOGICAL MEASUREMENT

CHAPTER 5

GENERAL PRINCIPLES OF MEASUREMENT

Several general principles are common to all measurement procedures whether in physical science, psychology, or common every day events. Among the assumptions and principles which are usually subscribed to are the following:

1. Only that which exists in the temporo-spatial universe can be measured.

2. Phenomena must not only exist in the temporo-spatial universe but must be observable or detectable.[1]

3. It is highly desirable to be able to describe the phenomena to be measured in objective terms and further to be able to specify in operational terms a definition of the phenomena.[2]

4. The crudest kind of measure is of an all-or-nothing variety. Either the phenomenon existed at a given time and place or it did not. A somewhat better technique is a comparative one; it demands two samples of the phenomena or material in question and attempts to answer the "more or

---

[1] Irving Lorge, "The Fundamental Nature of Measurement," ed. by E. F. Lindquist in Educational Measurement (Washington, D. C.: American Council on Education, 1951), p. 535.

[2] J. P. Guilford and Andrew L. Comrey, "Measurement in Psychology," ed. by H. Helson in Theoretical Foundations of Psychology (New York: Van Nostrand, 1951), p. 524.

less" question.

5. Somewhat more refined techniques require that the data be in some way quantified. This is frequently not too difficult to accomplish in physical science, but is more difficult to accomplish as one progresses toward biology, psychology and sociology. There must be a correspondence between the events occurring in the temporo-spatial universe and existing systems of numbers and mathematics before any useful and refined measurement technique can be applied to the data.[3]

6. Measurement implies the use of a unit. In the end this unit is arbitrary. There are few "natural" measuring units.

7. Measurement implies the use of a measuring instrument (except for the all-or-nothing variety, or primitive "more-or-less than" techniques described above, which may require only an unaided sense organ).

8. Measuring instruments vary in regard to their precision.

Basic Concepts in Psychological Measurement

Psychological tests are the basic measuring instruments used in education and counseling. As such, psychological tests may be defined as: (1) measures of an individual's behavior, and (2) satisfying the psychological criteria of

---

[3]Lorge, op. cit., p. 534.

objectivity, validity, reliability and established norms.[4]

In attempting to evaluate a psychological test, or any other test for that matter, answers to several qu[illegible] demanded. These fundamental questions include the following:

1. What does the test measure? (How do you know that it does? What is the evidence?) (Validity.)

2. How well does the test measure what it purports to measure? (Reliability.)

3. How objective is the test?

4. How sensitive is the test?

5. What normative data are available on the test?

Several concepts must be understood before these questions can be answered.

The Concept of Validity: Validity refers to the fidelity with which a test measures what it purports to measure.[5] The problem of validity is a salient one in psychological measurement. Validity for a test is most generally ascertained by correlating scores on the instrument in question with a measu[illegible] obtained for each testee on some acceptable external crit[illegible]rion. The closer the coefficient approaches +1.0 the greater the validity of the

---

[4]Anna Y. Reed, Guidance and Personnel Services in Education (Ithaca, New York: Cornell University Press, 1944), p. 162.

[5]Norman L. Munn, Psychology (New York: Houghton Mifflin Company, 1946), p. 403.

test; the more the coefficient of correlation deviates from +1.0 the less valid the test. It is usually difficult to obtain satisfactory objective criteria with which to correlate test results. A perfect correlation (coefficient of +1.0) is almost unknown in the field of psychology.

Attempts have been made to establish the validity of intelligence test scores against independent judgments by teachers of intellectual ability of school students against school grades and other indices of intellectual achievement. Sometimes the attempt is made to establish validity by correlating a new and unknown instrument with an instrument the validity of which has already been firmly established.

Objective personality tests have been more difficult to validate. One technique is the criterion group technique. The employment of this technique demands that the test be given to two extreme groups. Let us say that the test is administered to a group of individuals who are extremely well-adjusted (in the sense that all long-time acquaintances rate them as "very high" with respect to adequacy of adjustment) and to a group who are extremely poorly-adjusted (in the sense that all long-time acquaintances rate them as "extremely neurotic" with respect to adequacy of adjustment). If scores on the test fail to distinguish between the two groups, the test can hardly

be considered valid. But indications that scores on the test serve clearly to distinguish between the "well-adjusted" and the "poorly-adjusted" constitute evidence of validity.

The validity of aptitude tests is established in a similar manner. The test in question is given perhaps to a group of persons all of whom will receive training in a particular skill or group of skills. Some persons will attain the desired level of skill within a relatively short time, others will require a slightly longer time, others a very long time, and others may not attain the specified level of skill regardless of the length of the training period. If there is a consistent gradation of scores from high for those who attain the specified level of skill very rapidly to low for those who do not acquire the skill regardless of the length or intensity of training, it might be inferred that the test was sampling some aspect of the potential required for success in the particular field, and hence the test might be regarded as an aptitude test for the particular field. Scores on the test for similar groups under similar conditions would enable the informed to predict relative success on the job.

The Concept of Reliability: Reliability is the consistency with which a test measures what it claims to measure.[6] A reliable test yields the same score on successive

---

[6] Ibid., p. 403.

testing; but with psychological tests the identical score may not be found on successive testings; there are degrees of reliability. It is obvious that a person exposed to a psychological test will have learned something in the course of the test and on retaking the same test may get a higher score; this is called the practice effect. Likewise, it is possible that if a long interval elapses between the administration of a test and a readministration of the same test, differences in the score may be due to an actual difference in the ability or capacity of the testee. Actually, three somewhat different techniques are utilized to obtain evidence of reliability.

1. The Readministration Technique: This has been discussed above. It is the technique in which the same test is readministered to a set of subjects in an attempt to determine the extent to which scores remain constant or fluctuate systematically in a particular direction. Some of the difficulties of this technique were discussed in the paragraph immediately above.

2. The Two Form Technique: This is the technique in which two different tests of the same nature are constructed. Subjects are required to take both tests, generally at different times. Evidences of reliability are derived from a consideration of the coefficient of correlation. The higher the coefficient of correlation, the more reliable the instruments.

3. The Split-Half Technique: This is the technique by which items on the same test are divided into two groups, the odd-numbered items and the even-numbered items, and separate scores are obtained for each group. The "odd" scores are then correlated with the "even" scores; again the higher the correlation, the greater the reliability.

The Concept of Objectivity: The Objectivity of a test is determined by the extent to which the scores on the test are independent of the particular scorer of the test. To the extent that all competent scorers of a particular test obtain the same score, the test may be considered objective. It is, of course, impossible to eliminate completely the personal equation; even with machine scoring of tests, which is, of course, a step in the direction of objectivity, however, someone must interpret the automatically recorded symbols. To the extent that the subjective impressions of the scorer are excluded from the scoring of the test, it may be considered objective.[7]

The Concept of Sensitivity (or Discriminative Capacity): The sensitivity of a test is the capacity of the test to detect tiny amounts and varying gradations in amount of the attribute being measured. Sensitivity then refers to the "fineness" of calibration of the test, to the capacity of the test to specify and reflect with precision the

---

[7]Reed, op. cit., p. 162.

quantity of a particular attribute. In other words, it refers to discriminative capacity. A sensitive test should have sufficient range to measure extreme cases and its units should be small enough to separate individuals who do not differ markedly in ability.

The Concept of Standardization: In general terms standardization may refer to the techniques employed for ascertaining validity, reliability, objectivity, and sensitivity of the test. More specifically, it is used to denote the fact that precise administration and scoring procedure lead to the process whereby normative data are obtained. Normative data may be various measures of central tendency and of variability on various population groups. Sometimes quartile, decile or percentile scores are employed. In any case, these data enable comparisons to be made of new scores obtained on the test; the "typicalness" or "atypicalness" of a score may be assessed by this comparative procedure. In this way the meaningfulness of a given score is increased.

Beginnings of Psychological Measurement

The beginnings of psychological measurement are frequently traced to the work of Weber who introduced the so-called psychophysical methods. This was quite a revolutionary and progressive and ambitious step: Weber performed experiments on sensitivity in which he proposed to deter-

mine the relationships between the intensity of stimulation and the intensity of the resulting sensation.[8] His techniques with various modifications are used to the present day and have great practical utility. Fechner further developed Weber's contribution by determining the appropriate mathematical formula for the findings which Weber obtained.

Much later in the century, Sir Francis Galton, an English investigator, and James McKeen Cattell, an American psychologist, who took his doctorate with Wundt, introduced techniques more closely related to modern psychological tests.[9] Galton was interested in individual differences and measured many different physical and mental traits. Galton also worked out the method of statistical correlation.[10] Cattell was particularly interested in reaction time and he utilized a wide variety of reaction time procedures. He determined reaction times to light, to sound, and various other stimuli; he also ascertained speed of differential reaction.

A landmark in psychological measurement, and of the greatest importance to educators and guidance workers, was the development of the intelligence test.

---

[8]Edwin G. Boring, A History of Experimental Psychology (New York: D. Appleton-Century Company, 1929), p. 112.

[9]Ibid., p. 478.

[10]Ibid., p. 470.

The individual test of intelligence is the outgrowth of the experiments of Alfred Binet, a French psychologist, who, in 1905, constructed tests designed primarily to single out individuals lacking in the general ability necessary to master the curriculum of the elementary schools.[11] School system administrators wanted to distinguish between those students who could not learn because of a basic inability to learn from those who did not learn for other reasons. Binet wanted to distinguish between the mentally retarded, the normal and the superior child. Binet (and a collaborator named Simon) desired to construct a stable and objective instrument. To this end they pooled a number of items which they believed might serve as test items.

After the pool of items was gathered, Binet attempted to ascertain as objectively as possible the utility of each item. This was done by administering the items to children of various ages. He decided that a particular item was a satisfactory item to test a given age level if from 60 to 75 per cent of the people tested at that age level passed the test, and if less than 60 per cent of the people at the age level below the one being tested passed the test, and more than 75 per cent of the people at the age level above the one being tested passed the test. For example, an item was adequate for eight year olds if between 60 per cent and 75 per cent of the eight year olds passed the item, assuming

---

[11] Ibid., p. 548.

that less than 60 per cent of the seven year olds passed and that more than 75 per cent of the nine year olds passed the test.[12]

In this way Binet constructed a scale which consisted of several items for seven year olds, other items for eight year olds, still other items for nine year olds, etc.

Then Binet introduced a rather radical but quite objective notion. He decided that if a person, regardless of his age, passed tests which the average seven year old could pass, that such a person had a mental age of seven years; if he could pass tests which the average eight year old could pass, he had a mental age of eight year, and so forth. Here then was an objective means for assessing the mental ability of an individual.

Several revisions of Binet's test have been made by American psychologists: by Goddard in 1911, by Kuhlmann in 1912 and 1922, by Terman in 1916 and 1937, and by Herring in 1922. Of these the most widely used and the most valuable scale for measuring an individual's intelligence is the one constructed by Terman, usually known as the Stanford-Binet Test.[13] It is flexible, can be used with individuals having sensory or motor handicaps, does not unduly penalize slowness

---

[12]Paraphrased from a statement by Alfred Binet, as quoted in Joseph Peterson, Early Conceptions and Tests of Intelligence (New York: World Book Company, 1925), p. 185.

[13]L. M. Terman and M. A. Merrill, Measuring Intelligence (New York: Houghton Mifflin Company, 1937.

and affords a relatively accurate measure of general intelligence, brightness, and ability to learn.

Binet's concept of mental age and the mental age score are still employed. Another and even more useful innovation, as a concept and as a test score, has also been incorporated into the test. This is the I. Q. or intelligence quotient.[14] The utility of the I. Q. may be illustrated by the following example: Suppose a youngster, A, of ten chronological years obtains a mental age of eight, and another youngster, B, of six chronological years obtains a mental age of eight, do they have the same intelligence? As measured by the mental age, they do; each has a mental age of eight years. But one youngster required ten years to achieve the mental age of the average eight year old and the other youngster required only six years to achieve the mental age of the average eight year old. Obviously, these two youngsters are not developing intellectually at the same rate of speed.

Some measure which would take into account the individual's chronological age and his rate of mental development was desirable. This was provided by the intelligence quotient or I. Q. The formula for the Intelligence is stated as I. Q. = M. A./C. A. x 100. The constant 100 was employed for the sake of eliminating decimal places, and I. Q. scores are tabulated to the nearest whole number. An individual

---

[14] Ibid., p. 24.

with the same M. A. and C. A. would therefore have an I. Q. of 100. The score would be above 100 if the M. A. was larger than the C. A. and below 100 if the M. A. was smaller than the C. A. Hence, the I. Q. of the ten year old with an M. A. of eight is 80 and the I. Q. for the six year old with the M. A. of eight is 133.

CHAPTER 6

OBJECTIVE PSYCHOLOGICAL TESTS

Classification of Tests

Psychological tests are classified in a number of different ways according to the purpose for which the classification is made. Among the most common methods are classification based on:[15]

1. The sources of ability tested--whether abilities to be tested are dependent upon native or inherited characteristics or whether they represent acquired abilities or proficiencies.

2. The kinds of ability tested, abstract, concrete, or social.

3. The form in which the test content is presented--whether it is an oral, written, pictorial, or performance test.

4. The method of administration, to an individual or to a group.

In this paper, tests will be classified according to their use, i. e., (1) tests of general mental ability, (2) aptitude tests, (3) achievement tests, (4) diagnostic tests, and (5) personality tests; interest, attitudes and adjust-

---

[15]Reed, op. cit., p. 163.

ment. Also, a description of the most commonly used tests in each classification, listed above, will be given and their relation and application to education and guidance discussed.

Tests of General Mental Ability

A basic assumption of tests which attempt to measure this capacity is that all those who will take the tests have had common experience and equal opportunity to learn the problems presented in the test. Mental ability cannot, as yet, be measured directly; thus indirect measures are used which can only indicate the results of learning situations.[16]

Mental capacity is determined by heredity and environment. Our present intelligence tests which attempt to measure this capacity are largely weighted verbally, i. e., we deal with abstract situations involving ability to deal with words, numbers and other symbols. Current general intelligence tests have made an attempt to include more general observation and experience situations, rather than school material.[17]

Thurstone, utilizing factor analysis in a new approach

---

[16]Roy DeVerl Willey, Guidance in Elementary Education (New York: Harper and Brothers, 1952), p. 362.

[17]The Wechsler-Bellevue Intelligence Scale is a recently developed intelligence test which attempts to minimize school learned material. It is now available in both child and adult forms.

to the measurement of intelligence, has attempted to isolate and measure so-called primary mental abilities. He lists these abilities as: (1) visual or spatial ability, (2) perceptual ability, (3) numerical ability, (4) logical or verbal-relations ability, (5) fluency in dealing with words, (6) memory, (7) inductive ability, (8) deductive ability, and (9) ability to restrict the solution of a problem.[18]

Intelligence tests may be grouped in a twofold fashion into individual tests and group tests.[19] The individual test is a clinical instrument administered privately to one person at a time. Satisfactory results are dependent upon a carefully standardized testing situation. The examiner has an excellent opportunity to know of the testee's degree of motivation; he observes closely the testee's reactions, which may be of as much or even more importance than his total score. The Stanford-Binet has become the standard individual examination in the culture of the United States for school children 16 years of age and below. As indicated in the previous discussion of Binet's test, the Stanford-Binet also is scaled for difficulty and is a power rather than a speed tests. A basal age for the examinee must be established; this is the age level at which all subtests are successfully passed. Subtests are then given at

---

[18] L. L. Thurstone, "Primary Mental Abilities," Science, Vol. 108 (1948), p. 585.

[19] Reed, op. cit., p. 163.

successively ascending ages until all tests are failed. Each test has a value in terms of credit in mental age. And with these data plus knowledge of the chronological age of the subject, the intelligence quotient may be computed. Furthermore, analysis of the subtests passed and failed may reveal the relative strengths and weaknesses of the components of intelligence. Such components consist of rote memory for verbal and numerical material, reasoning and planning ability, ability to abstract, ability to perceive meaningful relationships, ability to deal with numbers, motor coordination and the like. On the basis of analysis of the subtests assessment of the student's mental competence may be made and diagnosis of difficulties attempted. Considerable skill is required in the administration, scoring, and interpretation of the test.

It is obvious that the Stanford-Binet (or any similar test) should never be administered by the untrained classroom teacher or general counselor, but always by one who is adequately trained in psychology. Such training must include not only a broad background of course work in general psychology, but special courses in individual-test administration and interpretation, and an extensive background in clinical psychology. Without such background training, a person is incompetent to administer or interpret an individual examination such as the Stanford-Binet. Furthermore, the experienced psychometrist will, in the testing,

observe such personal characteristics as unusual language habits, emotional stability, frustration tolerance, perseveration, self-confidence, attentiveness, etc. In general, the Stanford-Binet can be administered in from forty to ninety minutes.[20]

Group tests of intelligence comprise the second category of intelligence tests and these were developed later. When the United States entered World War I, there was a need for an instrument which would rapidly sort the hundreds of thousands of men entering the military services ranging from illiterates to college graduates, so that jobs requiring a certain general mental level were filled by men with the capacity for accomplishing the job. Likewise, since a drastic shortage of skilled individual-test administrators existed, and since individual tests were out of the question anyhow, it was necessary that personnel be trained as examiners quickly. Army psychologists, under the supervision of Dr. Robert M. Yerkes devised the Alpha test, which was administered to 1,700,000 men, and an intelligence classification was made by letter grades. The Alpha test accomplished its purpose. From the counselor's point of view, three significant contributions arose from the army testing program: (1) It gave prestige and encouragement to psychological testing; (2) It accelerated the rate of development of the technique of paper-and-pencil testing;

---

[20] Ibid., p. 166.

and (3) It suggested the possibility of establishing occupational intelligence standards which stimulated the interest of psychologists, educators and employers.[21]

Since the First World War, a large number of group tests of intelligence have been devised. Among the best known of these are the California Tests of Mental Maturity, the Henmon-Nelson Tests of Mental Ability, the American Council Psychological Examination, the Ohio State Psychological Examination, the Otis Self-Administering Tests, and Thurstone's Primary Mental Abilities Tests. All of these have been utilized in school situations. The administration of a group tests generally requires sixty minutes or less, in some cases only about twenty minutes. Skills required for administration and scoring may be acquired by the school teacher in a relatively short period of time.

Both individual and group tests of intelligence have value for the counselor. The group test is usually suitable for ordinary educational and occupational counseling purposes. From the standpoint of cost and time involved in administration and scoring, it is the most economical. Likewise the tests are quite objective and the level of skill required for administering the test is generally attained in a fairly short time. The results obtained seem to relate rather closely to those on individual tests. Its disadvantages are: that the examiner may not know about the

---

[21] Ibid., p. 166.

motivation or physiological condition (state of fatigue or emotional upset) of any particular subject; it is apt to penalize the slow worker or the person who fails to readily grasp the directions; and the scores obtained are not subject to meaningful analysis.

The individual test, on the other hand, is a clinical instrument which can be dangerous in the hands of the unskilled. It is useful for making individual diagnoses and prognoses, and since only a single subject is tested at a time, a picture of the total functioning person, including his unique work habits, attitudes, and general demeanor, may be obtained.[22]

The group test is the only test feasible for general use; since the number of skilled individual-test examiners is insufficient for the many situations in which intelligence assessment is needed, there is no very effective alternative to the group test.

Intelligence tests may also be dichotomized in a somewhat different way into verbal and performance (or nonverbal) tests.[23]

All of the group tests previously mentioned were primarily verbal tests. Verbal tests are those which consist of language items. However, language is in itself not intelligence, but only a convenient means for measuring

---

[22] Ibid., p. 166.

[23] Ibid., p. 172.

intelligence. It is, of course, not easy to devise items which correlate highly with criteria of intelligence in man which do not involve the use of language. But there is a need for performance or nonlanguage tests of intelligence and many tests have been devised which require only the minimum of language for the administration and accomplishment.

Performance tests are required:

1. For assessing the mental ability of infants or children who have not yet acquired language.

2. For assessing the mental ability of illiterates.

3. For assessing the mental ability of bicultural individuals, i. e., persons born in a foreign culture who have not yet had the opportunity to acquire our language.

Intelligence tests have served several functions at the elementary and secondary school levels. They have been used as objective indications of mental ability independent of or in conjunction with teachers' ratings and school grades. As such, test results have been utilized for their value in the placement of the child among a group of his intellectual equals and for designing special educational programs.

It has long been known that the retarded child is at a definite disadvantage in the classroom situation with the child of normal mental competence. The fact that he is unable to absorb new experiences at the same rate as the normal is in itself a serious problem. However, much more

serious from the standpoint of the mental health of the child is the fact that each academic failure is a frustration; not only is the child at an intellectual disadvantage, but his own reactions and the reactions of others to his repeated intellectual failures bodes forbiddingly for his future mental health. He is in a situation in which he is faced with problems which he cannot solve despite the most potent motivation; his intellectual resources are limited (and this fact must be recognized by the educator). Continued exposure to this kind of situation is almost certain to result in a minor personality maladjustment at the least, and perhaps much more catastrophically a neurosis or psychosis being superimposed upon an already existent intellectual deficiency. The difficulties of the student are thus multiplied. The school without the benefit of a progressive educational-guidance program, enlightened by the contributions of the objective psychological testing is in the position of facilitating just such a maldevelopment in the unfortunate retarded pupil. One solution to this problem has been to detect the retarded child by means of objective psychological tests of intelligence and to place him among children of similar ability. An educational program can then be geared to the level of the retarded child. The development of personality difficulties is diminished by the fact that the child is competing with children of about his own ability; feelings of inferiority

are less likely to be generated in this kind of environment. The opportunity for a healthy personality development is thereby enhanced.

The mentally superior child may likewise prove to be an academic problem. This has been aptly pointed out by Dr. Leta Hollingworth in her book, Children Above 180 I. Q.[24] The child whose general intellectual functioning is substantially above the level of his classmates frequently finds that the level at which the class instruction is pitched is boring; the material is all too obvious. What are intellectual problems for his classmates are of no particular difficulty to him. As a consequence, he may become a problem in the classroom. His diversions often are to make and throw paper airplanes, spitballs, to tease others who are attempting to work and, in general, to become a distraction to the teacher and to his fellow classmates.

This behavior plus the attitude of superiority which such a school situation is bound to engender in the exceptionally competent student will do little to make the student popular with his fellows. The probability of social ostracism is therefore increased. Here, too, then we have a youngster who is faced with a frustrating situation. He is required to attend classes which are quite

---

[24]Leta Hollingworth, Children Above 180 I. Q. (New York: World Book Company, 1942), p. 12.

monotonous for many hours of the day; his attempts at diversion are squelched, perhaps even punished; he is furthermore subjected to social alienation by pupils his own age.

Such a situation is far from healthy from the standpoint of mental hygiene and has the potential for producing changes in the personality structure of the child extending far beyond the limits of the classroom and the school age. In recent years educators have become increasingly aware of this problem of individual differences and have attempted to meet it through various methods, e. g., an enlarged and wider choice of subject matter, greater variety of activities and introduction of the core curriculum.

The use of intelligence tests in educational and vocational guidance has continually increased; however, these tests are rarely used singly. It is true that various group tests of intelligence have been used in many colleges and universities as measures of scholastic aptitude. These measures have been useful as indicators of general scholastic aptitude. In fact, group intelligence tests perhaps correlate better with measures of later scholastic achievement, such as grades, higher than they do with practically any other variable.

Results on the various psychometric devices serve to complement each other. On occasion, when establishing the intelligence level is of fundamental importance, two independent measures of intelligence are taken and compared with

each other. Corroborative scores on independent tests of mental ability serve to strengthen each other and increase the confidence of the counselor with regard to the general ability of the client.

In many instances unusually ambitious vocational and educational goals, i. e., goals of aspiration above the level of general aptitude, are checked by leads provided by intelligence tests. Some persons choose goals unreasonably beyond their level of intellectual competence. But the opposite problem must also be considered: Some persons set relatively low levels of aspiration for themselves; their educational and vocational goals are far below their level of competence. In many instances such persons have a rather vague idea of the intellectual requirements of various occupations and an inadequate concept of their own intellectual competence.

When results on intelligence tests indicate that the student's mental ability is far beyond his own estimate, it is frequently advisable to attempt to interpret the meaning of his scores to him and to point out their implications.

A word of caution with regard to intelligence tests is advisable at this point. Present day intelligence tests are not always a <u>true</u> measure of "intelligence" alone but include many other variables which can influence results. One major difficulty with intelligence tests is that test constructors have frequently neglected to pay attention to the

fact that intelligence test scores depend very much on socio-economic opportunity and cultural background. Many test constructors and administrators assume without evidence that intelligence is a fixed unchanging native ability. The Iowa Group and the Eells, Davis group have recently pointed out the inaccuracy of this concept (i. e., pointed out these very obvious neglects of the influence of a socio-economic opportunity and cultural background).

In the study by Eells and others, it was their general conclusion that present day I. Q. tests, to a marked degree, reflect the social-economic backgrounds of pupils rather than their ability to learn.[25] This study indicates that intelligence tests are generally more favorable to middle and upper class pupils and tend to discriminate against children from lower class levels.

Cook has also emphasized the importance of better testing measures as an aid to better inter-group relations. He has pointed out "...that differences in I. Q. often have to do with intra-cultural differences, the class-typed learnings of school children." Along with others, he advocates "...the freeing of tests as far as possible from symbol identification, word recognition or recall...with the focus on intelligence as problem solving, a way of mental functioning."[26]

---

[25]Eells, Kenneth, et. al., Intelligence and Cultural Differences (Chicago: University of Chicago Press, 1951).

[26]From lectures and discussion with Dr. Lloyd Allen Cook of Wayne University. Quoted with his permission.

Thus, the amount of information to be gained from an intelligence test by itself is relatively little, and must be used with caution. Additional information from the interview with regard to socio-economic status, cultural background, etc., is essential. Also, data from other psychometric sources, such as measures of personality, of interest, and of various specific aptitudes is necessary before any coherent vocational or educational plan can be devised.

Aptitude Tests

Aptitude is a condition, a quality, or a set of qualities in an individual which is indicative of the probable extent to which he will be able to acquire under suitable training some knowledge, skill, or composite of knowledge and skill, such as: The ability to contribute to art, or music, mechanical ability, mathematical ability, or ability to speak, or read a foreign language. Aptitude is a present condition which is indicative of an individual's potentialities for the future.[27]

Aptitude tests are designed to predict success in relatively specific fields of endeavor. Aptitude tests then attempt to measure capacity or potential for future accomplishment or development. Although in the past there has been controversy regarding whether the potential or capacity

---

[27]Arthur E. Traxler, Techniques of Guidance (New York: Harper and Brothers, 1945), p. 42.

is dependent upon nature or acquired factors, this issue can be ignored in the definition. Future performance, however, must be predicted in terms of present behavior. Thus, aptitude tests sample immediate behavior with the intention of using present scores for estimating future accomplishment.

Validity of aptitude tests is characteristically determined by correlating scores on the aptitude test with later success in specific fields of endeavor. In general, the "more closely the test situation reproduces the elements of the task, the more valid the measurement is likely to be."[28]

Aptitude tests may be divided into two general classes known as: (A) tests of general aptitudes, and (B) tests of aptitudes in a specific field. General aptitude tests are designed to measure a wide range of aptitudes, particularly those important in school work. Tests of aptitude in specific fields include tests of mechanical aptitude, art aptitude, musical aptitude, clerical aptitude, etc.[29]

A. General Aptitude Tests: Tests of general scholastic aptitude have long been known as intelligence tests. There is now the tendency to favor the term "academic aptitude tests," or "scholastic aptitude tests" rather than intelligence tests because to many people intelligence tests imply

---

[28]Henry E. Garrett and M. R. Schneck, Psychological Tests, Methods and Results (New York: Harper and Brothers, 1933), p. 150.

[29]Traxler, op. cit., p. 45.

a measure of native ability.[30] Intelligence tests have already been discussed in detail in an earlier section.

B. Special Aptitude Tests: These tests are often unsatisfactory because of design, and patterns are standardized on widely different populations. Therefore, there is no adequate basis of comparison between the results of the tests in different areas. This makes it difficult for the counselor to decide in which area an individual may possess the greatest aptitude. Some of the major areas for which aptitude tests have been constructed are as follows:[31]

1. Mechanical Aptitude: Some of the tests of manual and mechanical skill are individual tests administered through the use of special equipment. Among the tests of this type are the Tweezer Dexterity Test and the Wiggly Block Test, designed by Johnson O'Conner, and the Minnesota Manual Dexterity Test. Such tests are appropriate for use with special cases which are being studied intensively, but the general measurement program for guidance purposes generally uses paper and pencil tests which can be administered to groups of pupils. The MacQuarrie Test for Mechanical Ability, the Stenquist Mechanical Aptitude Test, and the Detroit Mechanical Aptitudes Examination are among the more frequently used group tests in this field. Two somewhat newer tests are the Revised Minnesota Paper

---

[30] Ibid., p. 45.

[31] Ibid., pp. 49-52.

Form Board Test, which is primarily a test of space perception, and the Bennett Mechanical Comprehension Test. The scores on mechanical aptitude tests and successful performance on the job will vary with the type of work. Therefore, the counselor should administer more than one type of mechanical aptitude test and keep a record of the value of the scores in predicting success in different employment situations.

2. Clerical Aptitude: One of the most useful tests in this area is the Minnesota Vocational Test for Clerical Workers, which has extensive norms. This test is based on number and name checking. The Cardall-Gilbert Test of Clerical Competence is a newer test which yields a broader sampling of qualities believed important in clerical work, but as yet there is little objective information on the value of the test for predicting success in clerical work. More recently the Psychological Corporation has put out a General Clerical Test, which seems to correlate quite highly with success in many clerical occupations.

3. Scientific Aptitude: Aptitude for scientific work may be inferred to some extent from general academic aptitude tests which provide a basis for diagnosis, e. g., the Yale Aptitude Tests or the Chicago Tests of Primary Mental Abilities. One of the few tests designed specially for the measurement of aptitude for science is the Stanford Scientific Aptitude Test, by D. L. Zyve. The use of this test

is confined to the high school and college levels.

4. Art Aptitude: Well known tests in this area include the Knauber Art Ability Test, the McAdory Art Test, and Meier-Seashore Art Judgment Test. The Knauber test seems to be quite difficult for beginners. The McAdory test covers a wider range of grades than the Meier-Seashore Test.

5. Musical Aptitude: The Seashore Measures of Musical Talent (revised 1939) is one of the best standardized procedures for the appraisal of aptitude for music. Since special equipment is needed and that is not always practicable in the testing of large numbers of pupils imultaneously, the use of these measures has been prevented in some schools. The Kwalwasser Test of Musical Information and Appreciation and the Kwalwasser-Ruch Test of Musical Accomplishment are paper and pencil tests of the group type.

6. Aptitude for Professions: Tests have been devised for many different professions. In Medicine, the Moss Scholastic Aptitude Tests for Medical Students has been used extensively. The Yale Legal Aptitude Test has been used in Law. In teaching, the National Teacher Examinations have been used with candidates for teaching positions. In Engineering, a battery of objective tests known as The Pre-Engineering Inventory has been constructed to measure abilities prerequisite to success in the engineering curriculum.

7. Aptitude For School Subjects: Mathematics and Foreign Languages have received the most attention in this area. Some of the most widely used tests for aptitude in mathematics are the Iowa Algebra Tests, the Iowa Plane Geometry Aptitude Test, the Lee Test of Algebra Ability, the Lee Test of Geometric Aptitude. Two tests extensively used for foreign language aptitude are the Luria-Orleans Modern Language Prognosis Test and the Symonds Foreign Language Prognosis Test.

Indications are that scores on the above type of tests correlate significantly with success in the subjects for which they are designed. However, each of these tests is an independent unit and valid comparisons cannot be made from one test to another. Therefore, achievement tests, which are part of a comprehensive batter, giving derived scores which are comparable, are more satisfactory for guidance use.[32]

The uses of aptitude tests in the guidance program are multiple, providing the individual with an objective indication of potential success in a particular field. For example; before entering a School of Nursing an applicant should have some idea of her probability of success. Does

---

[32]However, the counselor must keep in mind that research has not as yet definitely established that specific area aptitude tests have a greater relationship to success in these areas than do the results of general academic aptitude.

she really want to attempt a profession where her probability of success is low? Under conditions in which potential for success is low there may be a long painful and struggling period, with much energy expended, much frustration and in the end failure. Such profound waste in terms of effort, energy, time, and money, as well as disappointment may be avoided with a guidance program which includes the appropriate use of aptitude tests. It is difficult to answer the question as to just when aptitude tests should be given. To say that they should be given when needed is tautological. But certainly there are at least two periods during adolescence when aptitude test results can be of utmost benefit to the student: At the time that he enters high school and just before his graduation from high school.

The data obtained at the time of high school entrance should be incorporated with other information which the counselor possesses in helping the student with his selection of a high school curriculum. The data obtained at the end of the high school period should be used along with other information to help the student choose his occupational goal; the factor of aptitude should always be considered in making decisions about electing special training courses and the choice of a life-work.

Achievement Tests

Achievement tests are designed to measure extent of

accomplishment in a given field of endeavor. The field of endeavor may be academic or non-academic. Academic "... achievement tests have as their primary function the determination of whether or not the students have attained a given group of objectives related to a subject, unit, course, or semester."[33] Characteristically, achievement tests consist of samples of the particular material to be mastered. To be valid, a test for a given area must contain items which constitute a well-balanced sampling of all important objectives, subject-matter, or fact and information items of that area.[34]

Trade proficiency tests are essentially achievement tests.[35] Such tests are designed to measure the degree of skill possessed by an individual at a given time. Trade tests are an outgrowth of the necessity for effective utilization of trade-trained men in the United States Army. The army, of course, has use for plumbers, carpenters, electricians, etc. Trade tests were used to check the statements of military personnel who maintained that they were skilled in one or more of these fields. Trade tests generally consist of miniature standard problem situations in a trade, e. g., replacing an elbow joint, wiring a dis-

---

[33]Ernest W. Tiegs, Tests and Measurements in the Improvement of Learning (New York: Houghton Mifflin Company, 1939), p. 404.

[34]Ibid., p. 385.

[35]Reed, op. cit., p. 179.

assembled bell and battery circuit so that the bell will ring, building a small wooden box, etc. The test serves as an independent source of corroboration for or contradiction to the opinion of the interviewer regarding a person's qualifications.

Trade tests may be administered in individual or group form. Sometimes the tests are of a paper-and-pencil variety in which case the testee is required to answer technical and detailed questions about his field, or they may consist of form boards or of assembly tests, as suggested above. Many occupational proficiencies have been measured by trade tests --manual, mechanical, clerical and professional.

Trade tests derive counseling value from the fact that failure to make a satisfactory score need not be regarded as a permanent measure of disability for the job. Failure may in some case merely suggest that the individual needs additional study or improvement in some particular skill.

Sometimes oral or pictorial trade tests are employed. Civil service commissions have constructed and utilized oral trade tests, which consist of questions concerning tools, materials, procedures and basic principles involved in their use.[36] The questions call for brief specific answers. In abbreviated forms these items may serve as supplements to or substitutes for the employment interview.

Oral and picture trade tests have been criticized from

---

[36] Ibid., p. 179.

several points of view: (1) Performance is not tested under normal working conditions. (2) A single sample of performance cannot be regarded as an adequate measure of proficiency. (3) Such tests may not be fair to the person who has had only limited experience or who has been away from the job for a long time.[37]

The use of objective measures of achievement has undergone a tremendous growth in the last half century. Prior to that time essay-type examinations were primarily employed in the school situation. Grading on the basis of such instruments is notably unreliable.[38] The use of objective-type achievement examinations has served to reduce this unreliability. All who mark the examination will obtain the same result.[39] Thus, school teachers have learned to develop their own achievement examinations for particular courses. Besides the decrease in subjectivity of grading, such tests permit the instructor to sample many relatively specific items, and to sample adequately a wide range of material. Each item sampled has a definite answer. The traditional essay examination consisted of a few rather general questions which might be answered in many ways. Furthermore, the objective-type achievement examination may be utilized

---

[37]Reed, op. cit., p. 180.

[38]Tiegs, op. cit., p. 9.

[39]Tiegs, op. cit., p. 18.

diagnostically; test results reveal specific learning difficulties; analysis of the adequate objective-type achievement test may be used to guide further learning.

The most commonly used objective-type achievement test items are the true-false, the multiple choice, the matching and the completion items. Most other items employed are variations of these basic types. While these tests may be difficult to construct, they are easy to score. Furthermore, they fit instructional objectives of a particular instructor; they provide a convenient means of evaluation; and may be used diagnostically, for item analysis of a particular test may serve to call attention to specific strengths and weaknesses of the pupil.[40]

The standardized achievement test generally is developed by formulating test items based upon the most commonly taught subject areas as indicated in widely adopted textbooks, courses of study, and statements of educational objectives by teachers. The items selected are then subjected to statistical procedures and either eliminated or retained and scaled according to a number of variables. The raw scores may be converted into age or grade scores, time limits are established, the directions are specified, and interpretations are made according to established norms and scoring procedures. Achievement tests in the school subjects are more widely used than any other kind. They attempt

---

[40]Willey, op. cit., p. 378.

to evaluate whole subjects or large units of material. The best tests attempt to measure several abilities or specialized phases of ability within a subject, such as reading and arithmetic.[41]

Standardized achievement tests used in the school situation frequently serve a placement function. The necessity for some objective means of placing the school youngster constantly faces the school counselor. Following are a few specific problems which may be properly solved by the appropriate use of achievement tests: (1) The problem of placing a child from an ungraded class. (2) The problem of placing an older child who has received no formal schooling. (3) The problem of placing a child who has received only formal tutoring. (4) The problem of placing the child whose present work is at the failure level.

Achievement tests were used at the college level after the Second World War to aid in assessing the experiences of returning soldiers in academic terms. In many colleges and universities, academic credit was granted to veterans who successfully passed these tests of achievement. This is an example of the placement function which achievement tests have served.

Standardized achievement tests may likewise serve a measurement function. As such achievement tests are used

---

[41] Ibid., p. 370.

in certain courses for assessing accomplishment and at certain grade levels as final examinations, and promotion or failure may largely be determined by achievement test scores. Achievement tests are objective means of determining the individual's development and growth. Standardized achievement tests provide useful means of comparing the accomplishments of a specific group of boys and girls with the accomplishments of comparable students throughout the country.[42] Achievement tests may help the teacher in the diagnosis of the cause of academic difficulties. They may likewise be used to assess the effectiveness of instruction.

Following is a statement of Willey, who attempted to summarize the uses to the teacher of standardized achievement tests:

> The results of standardized achievement tests should contribute to the total information a teacher should have about the whole child. If the results are used wisely they should be an important aid to the improvement of teaching. Teachers will find achievement tests useful:
>
> 1. To discover deficiencies in the fundamental skills of reading, arithmetic, and the language arts.
>
> 2. To help the teacher plan the school program to meet the needs of each pupil. This planning would be in the form of a diagnostic and remedial attack.
>
> 3. To help the teacher find pupils who need the same kind of instruction in specific areas. By grouping pupils temporarily into small groups having the same difficulty, she can economize

---

[42]Harry N. Rivlin, "The Teacher's Role in Achievement Testing," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), p. 115.

her valuable time.

4. To help pupils find their areas of subject-matter difficulty.

5. To help the teacher keep a proper balance of ultimate learning in the subject areas.

6. To help the teacher locate causes of personality maladjustments. A pupil with insufficient experiential background will suffer in educational achievement, and this in turn may have an accompanying emotional disturbance.[43]

Diagnostic Tests

Diagnostic psychological tests are tests designed to yield information pertaining to psychological problems in various areas. Historically, educational diagnosis antedates nearly all diagnostic testing.[44] From one point of view, standardized achievement tests may be considered diagnostic tests. And certainly, from another point of view, psychological instruments used in the assessment of personality may be considered diagnostic. In fact, a recent book entitled Diagnostic Psychological Testing deals almost exclusively with personality tests.[45] Some diagnostic tests are used to assess social maturity level, others estimate lateral dominance, color vision, concreteness and abstractness of thinking, memory, etc. Perhaps current reading

---

[43]Willey, op. cit., p. 375.

[44]Arthur E. Traxler, "Diagnostic Testing in Relation to Remedial Teaching," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), p. 125.

[45]David Rappaport, Merton Gill and Roy Schafer, Diagnostic Psychological Testing (Chicago: The Year Book Publishers, 1946), 2 vols.

tests serve as well as any to illustrate this category of psychological instrument. Such tests, in general, are constructed not merely to indicate the level of present functioning, but also to provide evidence sufficient to permit analysis of performance and to aid in discovering specific sources of the deficiency.[46] Tests, of course, may be diagnostic in various degrees.

Baker and Stanton have pointed out that diagnostic testing is necessary to discover the pupils requiring specialized training, to interpret proper educational procedures, and to aid in recommending treatment for their handicaps.[47] They furthermore suggest that periodic tests be used to check the progress of children enrolled in special classes.

Diagnosis is fundamentally a laboratory and clinical technique.[48] It is largely within the last twenty years that diagnostic techniques have been extended from the laboratory and clinic to the classroom. Teachers are rapidly becoming conscious of the value of these tests.

---

[46]Walter W. Cook, "The Functions of Measurement in the Facilitation of Learning," ed. by E. F. Lindquist in Educational Measurement (Washington, D. C.: American Council on Education, 1951), p. 35.

[47]Harry J. Baker and Mildred B. Stanton, "Identifying and Diagnosing Exceptional Children," ed. by N. B. Henry, The Education of Exceptional Children (Chicago: University of Chicago Press, 1950), pp. 38-60.

[48]Traxler, op. cit., p. 125.

The purpose of valid and reliable diagnostic tests in the school situation is to ascertain the status of basic skills; it is implied that results will be used for the development of remedial and corrective programs. While the use of diagnostic tests in the classroom is extensive, the development of "therapeutic" procedures has been confined to a relatively few enlightened places.

Tiegs has emphasized the desirability of teachers striving to diagnose as accurately as physicians.[49] This most certainly is a worthwhile goal. However, the inadequacies of many present psychological instruments and lack of required training and experience on the part of the teacher make this goal idealistic rather than immediately realizable.

The advantages of the diagnostic tests of learning difficulties constructed by the professional psychologist, who is a test specialist, over those designed by the teacher are that they: (1) Are more thoroughly analytical than those most teachers can prepare. (2) Make the teacher aware of of the important elements, necessary sequences and difficulties of the process. (3) Save the teacher time and energy in diagnosis and leave her time for immediate individual remedial work. (4) Help the pupil recognize his needs by systematically emphasizing his errors. (5) Yield test

---

[49]Ernest W. Tiegs, Educational Diagnosis (Los Angeles: California Test Bureau, 1948), p. 36.

results which suggest remedial procedures, which again save the teacher time.[50]

Furthermore, such tests serve as a relatively independent check of the teacher's judgment. The determination of pupil status in a given area should be a continuing process in every classroom, according to Cook.[51]

Objective psychological testing in the United States has developed steadily from the very general in the direction of the more specific.[52] Early tests, essentially omnibus instruments, each yielded a single score, or perhaps occasionally two scores. By contrast, most recently published tests provide several subscores. This permits the test data to be considered analytically, and increases the diagnostic potential of the test.

Strictly speaking, there is no such entity as the diagnostic test. The question of whether a score has diagnostic significance or not depends upon the total situation. A score on any objective, valid, reliable, sensitive, and standardized test might be used diagnostically. Frequently tests which might be used diagnostically are not so used, because teachers have neither the time nor the energy to tabulate scores into appropriate categories. The diagnostic

---

[50]Cook, op. cit., p. 37.

[51]Ibid., p. 35.

[52]Traxler, op. cit., p. 125.

value of a test increases as questions which are similar in kind and aimed at the same objective are scored together on a basis which enables comparison with scores provided by every other part of the test.[53]

In the school situation intelligence tests, interest tests, achievement tests and personality tests have all been used diagnostically. All modern remedial procedures recognize that learning difficulties arise from a variety of causes of which only a part are amenable to measurement. Scores on diagnostic tests frequently furnish valuable clues leading to underlying causes of learning failure, but a more complete understanding of learning problems demands the use of case history techniques, direct behavior observations "...and those procedures falling within the broad category of projective techniques."[54]

Personality Tests

Objective techniques of many sorts for assessing personality or aspects of personality have been designed and are known as personality tests. One obstacle to the measurement of personality is that there is no general agreement on a definition of personality, or on the number and nature of the traits of which it is composed.[55] There are

---

[53] Traxler, op. cit., p. 128.

[54] Ibid., p. 139.

[55] Arthur E. Traxler, Techniques of Guidance (New York: Harper and Brothers, 1945), p. 99.

as a matter of fact divergent opinions in regard to the existence of personality traits. Some personality theorists regard personality as a function of the structural nature of the individual; others insist that the immediate situation largely determines behavior, and consequently personality. The latter variety of theorist points out that personal reactions may vary greatly from situation to situation, i. e., that people seem to play roles. Personality as role playing has lately been emphasized by an increasing number of psychologists.[56] They point out that in one situation a given person is dominant, in another submissive; in one situation dutiful, in another hostile; in one situation he is friendly, in another quite unfriendly. Apparently he learns through a process of social interaction to adopt certain roles.

But it is not just any role that can be assumed. Each person is limited and becomes increasingly limited as to the kinds of role he can play. This is true even for the most skilled actor. In other words, even if one subscribes to a role-playing theory, it does not mean that personality is completely unstable and constantly changing. There is an enduring essence to personality, or as Traxler has phrased it, "...we accept...common assumption that personality is a more or less definite entity..."[57] composed of a number

---

[56] Among such psychologists are J. L. Moreno, T. Newcomb and N. Cameron.

[57] Traxler, op. cit., p. 100.

of traits. Thus, despite the fact that an individual may play many roles, he remains nevertheless quite distinctive and consistent, even though there are some differences. It is the distinctiveness and consistency of the individual with respect to one or more traits which the objective test of personality attempts to measure.

A number of side issues regarding personality, such as the question of how intelligence is related to personality, the age at which personality begins, whether or not personality may exist when the individual is not in a social group, etc., are interesting and important for a personality theory, but somewhat irrelevant to the nature of objective personality tests developed.[58]

There are a number of alternatives to the test approach to the evaluation of personal qualities. Most of the alternatives are more informal than the test procedure. Anecdotal records, for example, may provide very illuminating personality data. Rating scales filled out by the subject or by long-time close acquaintances may be enlightening. The interview provides another convenient means for assessing personality. Likewise, time samples of the individual's behavior or descriptions of his behavior or descriptions of his behavior at random intervals frequently provides useful information about the personality. All of

---

[58]Gordon W. Allport, Personality: A Psychological Interpretation (New York: Henry Holt, 1937).

these devices can contribute worthwhile material to the guidance program. They may, in fact, be much more useful than objective personality tests, which are in many ways limited.

About 500 objective personality devices have been constructed and published.[59] There are so many inferior instruments claiming to assess personality that busy teachers cannot find sufficient time to inspect them all.[60] Furthermore, it is doubtful that teachers are qualified to evaluate them. This evaluative function is one which the counselor should attempt to serve. Of these 500, only a few have significance for classroom teaching.[61] Many may be properly used only by psychological clinicians and psychometrists. The classroom teacher should attempt to utilize not only the data from the objective personality tests but from the other techniques also. From these approaches the classroom teacher may obtain not only insight into the child's behavior, but perhaps also a new philosophy of teaching techniques.

The tests of personality of elementary school children are still in an experimental stage and should be used with the utmost caution by the teacher.[62] Unless a teacher has

---

[59] Traxler, op. cit., p. 99.

[60] Ibid., p. 99.

[61] Willey, op. cit., p. 380.

[62] Ibid., p. 387.

had some training in guidance and testing it is probably undesirable to use the personality test at all. But when personality tests are used, they should be supplemented with data obtained through direct systematic observation, through personnel records, and other means. By themselves, objective personality tests are generally not particularly valuable; combined with other data, such tests may prove valuable. The teacher must attempt to see the personality as a complete unit, with each technique giving her but a glimpse of the total. The total configuration must be developed by the teacher from these brief glimpses.

Teachers and guidance officers are being increasingly aware of the fact that personality factors are important in a pupil's academic and non-academic adjustment as are the more readily measured factors of intelligence, aptitude and achievement.[63]

Tests of personality are sometimes divided into two general categories--the global and the atomistic.[64] The first class incorporates instruments which attempt to evaluate personality as a whole; the instruments of the second category attempt to analyze personality into its component parts. Projective tests, which will be discussed in the next chapter, illustrate the first class; objective appraisal instruments exemplify the latter class. Such tests generally

---

[63] Traxler, op. cit., p. 98.

[64] Traxler, op. cit., p. 100.

yield a quantitative estimate of personality in the form of a score or a division on a scale. This frequently enhances the description of personality. Among the most common of the objective type personality tests are the so-called paper-and-pencil tests. Included within this group are various questionnaires, check lists and inventories. In their most general form, they consist of a series of questions concerning habitual behaviors which are to be answered "yes" or "no." Other items are questions concerning likes, dislikes, self-comparisons, beliefs, opinions, etc.[65] Some objective personality tests attempt to derive a score indicative of the general adjustment level; other tests are concerned with measuring some more limited aspect of personality, a particular trait, such as sense of humor, social judgment, and ascendance-submission. Sometimes attitude and interest blanks are classified with the objective personality tests.

Many types of objective personality tests have been devised. Many kinds of responses are called for.

The Woodworth Personal Data Sheet is one of the oldest and best known of the personality inventories.[66] Woodworth devised a series of questions requiring "yes" and "no" answers on the basis of symptoms reported in studies of psychoneurotics. Many of Woodworth's items appear in modified form in more recent questionnaires.

---

[65]Willey, op. cit., p. 381.

[66]Traxler, op. cit., p. 121.

Laird, who developed the Colgate Personality Inventory rating scale made use of a graphic rating scale in which the subject indicated his response by placing a cross at the appropriate place between the two extremes.[67]

The Allport Ascendance-Submission Scale contains 30-odd multiple choice questions.[68]

Among the outstanding objective measures of personality currently used are the Bernreuter Personality Schedule, Bell Adjustment Inventory, the California Test of Personality, and the Minnesota Multiphasic Personality Inventory.

The Bernreuter Personality Inventory consists of 125 questions selected from earlier personality questionnaires. Bernreuter's test is scored with four different scales and provides separate scores labelled "neurotic tendency," "self-sufficiency," "introversion-extroversion" and "ascendance-submission."[69]

The Bell Adjustment Inventory is similar in form to that of Bernreuter.[70] By means of a much simpler scoring

---

[67]D. A. Laird, "Detecting Abnormal Behavior," Journal of Abnormal and Social Psychology, 20 (1925), 128-34.

[68]Gordon W. Allport, "A Test of Ascendance-Submission," Journal of Abnormal and Social Psychology, 26 (1931), 231-48.

[69]Robert G. Bernreuter, "Validity of the Personality Inventory," Journal of Social Psychology, 4 (1933), 387-405.

[70]Hugh M. Bell, The Theory and Practice of Student Counseling with Special Reference to the Adjustment Inventory (Stanford University, California: Stanford University Press, 1935), p. 138.

procedure, separate measures on the test may be obtained for home adjustment, health adjustment, social adjustment, and emotional adjustment. The test is extensively used in high school and college. A modification of the test, however, as the School Inventory is frequently used with junior high school students.

The California Test of Personality is available at four different academic levels, and there is also an adult form.[71] The test is designed to identify and evaluate certain important factors in personality and social development. Each test is standardized and presumably diagnostic. It is designed to provide teacher, supervisor and educational administrator with significant evidence of the status of individuals and of groups. Scoring is objective and a diagnostic profile sheet aids in the presentation of the findings.

The Minnesota Multiphasic Personality Inventory was designed to provide a complete personality scale to enable multiphasic diagnosis. It is extremely long, consisting of 550 questions.[72] Nine subscales are available which are called hypochondriasis, depression, hysteria, psychopathic deviate, masculinity-feminity, paranoia, psychaesthenia,

---

[71]Ernest W. Tiegs, Willis W. Clark, and Louis P. Thorpe, "The California Test of Personality," Journal of Educational Research, 35 (1941), 102-08.

[72]Starke R. Hathaway and J. Charnley McKinley, The Minnesota Multiphasic Personality Inventory, revised edition (Minneapolis: University of Minnesota Press, 1943).

schizophrenia and hypomania. In addition to this, a lie score can be obtained. This is a check against those who deliberately attempt to falsify their score. It consists of questions heavily loaded in one direction. If too many of these are answered in the opposite direction, it is probable that the respondent is lying.

The majority of personality instruments are designed for use among senior high school and college students and adults.[73] Several inventories have been derived, however, for use in the elementary school and the junior high school. Among these is the Brown Personality Inventory for Children, intended for children 9 to 14.[74] Items are based on a survey of the literature which contained symptoms of "neurotic" children. The test is supposed to distinguish between normal children and those with psychoneurotic problems. Items indicate neurotic behavior relating to school, home, and general social situations, as well as anxiety, insecurity, and inferiority tendencies.

The Rogers Test of Personality Adjustment was designed to measure a child's adjustment toward his fellows, family and himself.[75] From objective numerical "diagnostic scores"

---

[73] Traxler, op. cit., p. 104.

[74] Fred Brown, "A Psychoneurotic Inventory for Children between Nine and Fourteen Years of Age," Journal of Applied Psychology, 18 (1934), 566-77.

[75] Carl R. Rogers, Measuring Personality Adjustment in Children 9 to 13 Years of Age (New York: Bureau of Publications, Teachers College, Columbia University, 1931), p. 98.

may be obtained: Personal inferiority, Social Maladjustment, Family Maladjustment and Daydreaming.

There are several general advantages to objective tests of personality. They are short and require little time to administer; they are economical; they require little skill to score.

However, many difficulties and criticisms of personality tests must be pointed out. First of all, it is difficult to formulate questions which are understood and have the same meaning for all pupils.[76] Second, a child may give what he thinks is a "good" (Socially acceptable) answer; but the answer may not be verified in actual conduct; that is, the pupil who is not honest and frank in expressing his real feelings and indicating his own behavior is not really describing an objective situation.[77] Also, generally, the most desirable answer is in no way concealed but quite obvious, so that the "best" answer can be readily selected; and rarely is any check made on its correspondence with reality. In other words, scores on most personality questionnaires can be faked.[78] Often people are reluctant to tell about themselves, particularly about very personal matters. And even when they desire to do so, it is doubtful

---

[76]Willey, op. cit., p. 381.

[77]Willey, op. cit., p. 381.

[78]John W. M. Rothney and Bert A. Roens, Counseling the Individual Student (New York: William Sloane Associates, Inc., 1949), pp. 93-94.

that many are competent to tell about themselves in an objective fashion. Third, it has been pointed out that objective tests of personality seldom do what they purport to do.[79] One technique for obtaining evidence of validity on an objective personality test is to administer the test to two groups of individuals which differ from each other markedly with respect to a particular personality trait. Validity is established to the extent that the test scores serve to distinguish effectively between the two groups. The difficulty is that few validity studies have been carried out.

Ellis, after extensively reviewing the validity studies on personality questionnaires, concludes that

> ...there is at best one chance in two that these tests will validly discriminate between groups of adjusted and maladjusted individuals and there is very little indication that they can be safely used to diagnose individual cases or to give valid estimations of the specific respondents. The older more conventional of these tests seem to be of no practical diagnostic purposes, hardly worth the paper on which they are printed.[80]

Kornhauser had previously pointed out that only 15 per cent of a group of psychologists rated paper-and-pencil personal inventories as "highly" or "moderately satisfactory."[81]

---

[79] Ibid., p. 92.

[80] Albert Ellis, "The Validity of Personality Questionnaires," Psychological Bulletin, 43 (1946), 385-440.

[81] Arthur Kornhauser, "Replies of Psychologists to a Short Questionnaire on Mental Test Developments, Personality Inventories, and the Rorschach Test," Educational and Psychological Measurement (1945).

These are some of the primary criticisms of objective personality tests.

On the other hand, Traxler has pointed out that most personality tests seem to be reliable enough for group studies.[82] They enable the counselor to draw conclusions concerning the trend of traits measured in groups and can accordingly serve to aid in group planning. Most personality tests, however, are not sufficiently reliable for use in individual diagnosis.

While scores may not be reliable enough for individual diagnosis, they can contribute materially nevertheless to the guidance program of the school. Two conspicuous ways in which they may serve are:

1. To stimulate and encourage students critically to evaluate their own characteristics of personality.

2. To serve as a focal point in interviews between counselor and individual pupils.[83]

Likewise tests are useful frequently in locating the extremely well-adjusted and the extremely poorly-adjusted. Objective personality tests may also suggest leads; and with other corroborative evidence, scores on personality tests should be given serious consideration. That is, scores on objective tests should not be accepted at face value, but may be given some weight when external evidence

---

[82]Traxler, op. cit., p. 107.

[83]Ibid., p. 108.

warrants.

There is an increasing demand for valid and reliable instruments of personality measurement to assist the school in its guidance. Perhaps the failure of psychologists to meet the demand for such tests, together with the increasing interest in the new, has turned attention toward the projective techniques for personality assessment.

CHAPTER 7

EVALUATION OF TESTING PROGRAMS IN GUIDANCE AND EDUCATION

Testing programs in guidance and education have steadily expanded. The successful use of objective group testing procedures in the military services as well as in industry during the last war gave an impetus to objective testing in guidance and education. Tests are an indispensable part of any school's guidance and counseling program.[84]

A complete educational testing program employs objective measures of intelligence, aptitude, achievement, and personality, as well as several special diagnostic tests. A battery of psychological examinations is periodically administered to every student in the school; special diagnostic tests are employed as the need arises. The periodic battery of examinations may consist of an intelligence test, an interest test, and a personality inventory, as well as special aptitude and achievement tests. Such a battery in the "progressive" high school is administered at least when the student enters high school and again just before graduation. Test results and all other pertinent personal data should be used in the guidance of the student. High school

---

[84]Lester W. Nelson, Use of Tests in School Administration, American Council on Education Studies, 1951.

entrance is a critical period in the student's life. He must make a decision with regard to his curriculum; it may be a matter of selecting his final formal training for life. Likewise, at the end of the high school period, another decision must be made with regard to vocational goals in life. The student requires all the assistance which he can obtain. Objective measures of achievement, of general intelligence, of specific aptitudes and of personality, all provide data which the counselor and the student will want to evaluate in making a life plan.

Since one of the principal functions of education is to "educate" or teach, schools are interested in determining their effectiveness in communicating their objectives, whether they be specific constellations of information, skills or attitudes.[85] To this end achievement tests are employed. Results on such achievement tests may be used in curriculum evaluation. To what extent are the educational objectives devised by the school being met? What are the strengths, what are the weaknesses and what are the gaps in the curriculum, as indicated by standardized group achievement test results? Achievement tests aid in identifying and assessing strengths, weaknesses, and gaps in the curriculum. The data of achievement tests may offer suggestions concerning changes in the curriculum.

---

[85] Willey, op. cit., p. 349.

Achievement tests also permit an opportunity for measuring the efficiency of learning in the individual. They provide an opportunity for determining individual differences in acquired performances.

Psychological tests in general permit detecting assets, deficiencies, and problems in the individual; and attention in the guidance program should be focused on the individual.[86]

Most schools and perhaps most school systems are at the present time without psychological clinicians or other specialists who are capable of administering special diagnostic tests. This, of course, drastically reduces the probability of accurately determining the sources of personal difficulty in the student. Too many school systems lack qualified personnel for handling the more sophisticated psychological tests.

Testing in the better guidance and educational program is: (1) systematic, (2) cumulative, (3) varied, (4) reasonably comprehensive and (5) objective. Likewise, records are kept up to date, for such records may be a source of valuable information not only to the school but to the community.[87]

The primary function of the guidance program is to tend to the needs of the individual student. Simply administering and carefully recording scored tests is not

---

[86] Ibid., p. 350.

[87] Cook, op. cit., pp. 28-29.

enough. In fact, if that is all that is done, the process is rather meaningless. Test scores must be a means to an end, not an end in themselves. Tests, of course, may permit an analysis or a diagnosis, but this too is but a means to an end, generally. The function of testing is to determine individual needs and to initiate remedial procedures so that needs may be met. Too often school systems have excellent cumulative records which indicate scores on every test the youngster has taken for many years. Such test scores offer abundant and objective pupil information, and such information is basic to effective counseling.[88] However, the cumulative record cards are never used to help the student. This becomes a rather sterile procedure. More adequately trained personnel are critically needed in guidance and education. In general, there seems to be too much group attention and too little to individual counseling in many present educational systems. Tests should be increasingly used for individual qualitative evaluation.[89] Planning must be made in terms of individual needs, and implemented. Individualization of instruction, remedial work, counseling with parents, etc., is frequently suggested by test results.[90]

---

[88]Mildred S. Percy, Use of Tests in the Guidance Program of Public Schools, American Council on Education Studies, 1951.

[89]Grace H. Kent, Mental Tests in Clinics for Children (New York: Van Nostrand, 1950).

[90]Margaret Selover, Agatha Townsend, Robert Jacobs, and Arthur E. Traxler, Introduction to Testing and the Use of Test Results, Educational Records Bulletin, 1950.

It is unfortunate, also, perhaps that psychological testing has in many cases been oversold. Teachers as well as guidance workers must be consistently informed, not only of the values of psychological tests, but also of their limitations and of the difficulties involved in using such tests. Related to this is the fact that in the hands of the unskilled, interpretation of a psychological test might even have very harmful results.

It is also desirable to encourage follow-up studies. It is indeed very rare that guidance workers in education (or elsewhere) ever carry out follow-up studies. Such a procedure, if followed through, might be enlightening both to the guidance specialist and the test constructor.

PART III

PROJECTIVE TECHNIQUES IN GUIDANCE AND EDUCATION

CHAPTER 8

NATURE OF "PROJECTION"

Definition and Concepts

Projection is a term very much in use in present day clinical, dynamic, and social psychology. Frank suggests that projective methods are typical of the current general trend toward a dynamic and holistic approach in recent psychological science as well as in natural science.[1] The projective technique has also been likened to the position of spectral analysis in physical sciences.

The term "projection" was introduced by Freud as early as 1894 in his paper "The Anxiety Neurosis." In this paper Freud defines projection as a defense mechanism, in which a person ascribes to another person a trait or desire of his own that would be painful for his own ego to admit.[2]

Healy, Bronner, and Bowers define projection similarly as "a defensive process under the sway of the pleasure principle whereby the ego thrusts forth on the external world unconscious wishes and ideas which would be painful to the

---

[1] L. K. Frank, "Projective Methods for the Study of Personality," Journal of Psychology, 8 (1939), 389-413.

[2] S. Freud, "The Anxiety Neurosis," in Collected Papers (International Psychoanalytical Library; London: Hogarth Press, 1940), 1, 102.

ego."[3]

This definition of projection served very well until a series of experimental investigations by Bellak called forth some new thoughts on this subject with subsequent revisions.[4] His experiments consisted in provoking a number of subjects and giving them pictures of the Thematic Apperception Test under controlled conditions. In a second experiment the subjects were given the posthypnotic order to feel aggression while telling stories about the pictures. In both instances the subjects behaved according to the hypothesis of projection and produced a significant increase of aggression as compared with their responses to the pictures without having been made to feel aggressive first. Similarly, when the subjects were under post-hypnotic order and were told that they were extremely depressed, it was found that they projected these sentiments into the stories.

When the experiment was varied, however, to the extent that the post-hypnotic order was given to the subject that he should feel extremely elated, it was found that the elation too was projected into the stories of the T. A. T. This was a crucial point in the experiment, as it demonstrated that it was questionable to assume projection as merely a

---

[3]W. Healy, A. Bronner, and A. M. Bowers, The Structure and Meaning of Psychoanalysis (New York: Alfred A. Knopf, 1930), p. 24.

[4]L. Bellak, "The Concept of Projection," Psychiatry, 7 (1944), 353-70.

defense mechanism, since there obviously was no particular need for the ego to guard against the disruptive effects of joy.

In fairness, however, to Freud it must be stated that although he defined projection as a defense mechanism he obviously anticipated the trend, for in his paper "Totem and Taboo" he states, "But projection is not especially created for the purpose of defense, it also comes into being where there are no conflicts."[5] The interpretation of the T. A. T. is based actually on Freud's main assumption that memories of percepts influence perception of contemporary stimuli. It would seem, therefore, that percept memories influence the perception of contemporary stimuli and not only for the defined purposes of defense as stated in the original definition of projection. Further, that all present perception is influenced by past perception and that the nature of the perceptions and their interaction with each other constitute the field of the psychology of personality.

A glance at the body of hypotheses and propositions that characterize the projective point of view at the present time reveals a limited number of trends in conceptualization, and a great deal more material devoted to the development and application of projective tests. The following trends in projective psychology are significant:

---

[5]S. Freud, "Totem and Taboo," in Basic Writings of Sigmund Freud, ed. A. A. Brill (New York: Modern Library, 1938), p. 32.

1. Personality is viewed more as a process rather than as a collection or aggregation of relatively static traits which are utilized by the individual in responding to stimuli.

2. The personality studied by means of projective procedures is regarded as a process constantly influenced by the individual's interactions with his physical and social environments, on the one hand, and by the state and intensity of his needs, on the other.

3. There is an increasing tendency within projective psychology to rely upon field theory as a frame of reference to which to order projective behavioral data.[6]

4. Under the influence of psychoanalytic thinking there is a marked trend toward the establishment of two classes of propositions about personality: dynamic (field) and genetic (historical and developmental).

5. There is an increasing interest in the formulation of a picture of the "personality" as a "whole."

6. There is a marked trend in the direction of a conceptual scheme in terms of which adequate formulations of different personalities can be made for clinical purposes.

While projection thus originated in connection with psychoses and neuroses, it was later applied by Freud to

---

[6]"Field theory" as used refers to the concept of a system of interdependent variables. The behavior of an organism, at any specific moment of its life history, is regarded as being the resultant of the totality of all the relevant variables operating within the field and within the organism.

other forms of behavior and presently is related to about ten other mechanisms currently used in psychoanalytic literature.[7]

The widest use of the term "projection," however, has been made in the field of clinical psychology in connection with the so-called projective techniques. These techniques include the Rorschach Test, the Thematic Apperception Test, the Szondi, Sentence Completion, and numerous other procedures. The basic assumption in the use of these tests is that the subject is presented with a number of ambiguous stimuli and is then invited to respond to these stimuli. It is assumed that the subject projects his own needs and that these will appear as responses to the ambiguous stimuli.

History of Projective Techniques

Projective psychology is relatively a young and vigorous study technique which, especially since World War II, has distinguished itself as a separate division of psychology. Its development has been based on projective tests in which a person interprets experiences or objects, to disclose through his distortions, his own needs and values. In giving us these insights into human behavior, projective psychology has supplied invaluable techniques of personality diagnosis and psychotherapy.

The term projective techniques has within very recent

---

[7]L. E. Abt and L. Bellak, Projective Psychology (New York: Alfred A. Knopf, 1950), p. 8.

years acquired broad and undifferential meanings. Projective techniques such as the Rorschach, the Thematic Apperception Test, and many others, elicit not only projection, but also expressions of almost all other conceivable kinds of mental mechanisms and symbols of human relationships.[8] Projective tests are, in fact, not strictly tests of projection, but tests of mental mechanisms or of personality dynamisms including projection.

Tests employing free association to words, colors, inkblots, and pictures, or free drawings and construction with toys, have been in use since the beginning of psychology, for example the tests of Galton, Jung, Wertheimer, Stern, Jaensch, Roemer, Rorschach, the Lowenfeld mosaic test, and others.[9]

However, these did not involve the psychoanalytic conception of projection, nor with the exception of the Jung and Bleuler experiments, did they invoke any specific hypothesis as to the quantitative relation that should exist between test responses and dynamic mechanisms. According to Cattell the first tests explicitly and deliberately employing the design of projection were published in 1936 and 1937 independently by Cattell in England and by

---

[8]Harold H. Anderson, "Human Behavior and Personality Growth," ed. by H. H. Anderson and G. L. Anderson in Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 23.

[9]Ibid., p. 55.

Murray and Sears in America.[10]

Design Principles for Projective Tests

Since the problems of measurement are especially acute in the data gathering processes, investigators have given considerable attention to the development of new techniques and the modification of old techniques. Considerable emphasis is now given projective tests because of the success with which these methods have been used for diagnosing and measuring personality.

While projective techniques may be extremely useful instruments in psychological and social research, there are nevertheless many pitfalls involved in their use which have to be viewed realistically. These are problems of reliability and validity. The data obtained from projective tests are usually approached and viewed in two ways. On one hand the data present the investigator with a variety and abundance of material that seems to have a limitless potentiality for diagnosing attitudes and opinions in the individual; on the other hand they also present him with many difficulties with respect to scientific treatment of the data.

---

[10]R. B. Cattell, "Projection and the Design of Projective Tests of Personality," Character and Personality, 12 (1944), 177-94.

R. R. Sears, "Experimental Studies of Projection: I Attribution of Traits," Journal of Social Psychology, 7 (1936), 389-98.

H. A. Murray, "Techniques for a Systematic Investigation of Phantasy," Journal of Psychology, 3 (1937), 115-43.

The problem in validating projective tests derives from the difficulty of integrating the values, methods, and research contributions of three phases in psychology --the experimental, the statistical, and the clinical. Each is concerned with the same objective of discovering verifiable knowledge; each has impressive records of achievement; each has limitations for solving the complex problems that concern us. Future progress depends upon achieving an integration of their contributions. However, incompatabilities of method exist between them as a product of their differing histories.[11]

The problems of validation are, to a degree, specific to the particular test under consideration and to the uses to which it is put. The range of tests that have been called projective is extremely wide; however, the fundamental common characteristic of these devices is the ambiguity of the task put to the subject, a circumstance that permits him to respond in his own way.

The early optomistic assumption that projective tests were getting at the durable core equally in all individuals has stood in the way of investigating or seeing the need to investigate the different homeostatic functions that the tests sample. We must be aware that adequacy of response

---

[11]J. W. MacFarlane and R. D. Tuddenham, "Problems in the Validation of Projective Techniques," ed. by H. H. Anderson and G. L. Anderson, in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 29.

sampling, determination of all responses by basic personality, and equal applicability to different individuals are assumptions.[12]

The scientific critic, while recognizing that any behavior sample possesses some intrinsic validity as an expression of personality, will demand evidence to the degree to which these assumptions are satisfied. Until such evidence is supplied, he will remain skeptical of the projectivist's statements. Therefore, if one desires more than face validity he must concern himself with the psychometric factors of respectability, i. e., reliability and validity.

Reliability: Test reliability refers to the stability with which a test yields information. Techniques for determining reliability have been developed for tests yielding quantitative scores on single dimensions. However, the usual type of projective test does not yield a score but a non-quantitative protocol not directly susceptible of the statistical treatment suitable to achievement or other like tests.[13]

There are two general methods available for the ordering of qualitative data: (1) Matching, which deals with a subject's record as a whole, and (2) Coding, classifications or rating scales, which deal with selected aspects of the record. Both methods depend upon the discrimination of a

---

[12] Ibid., p. 35.

[13] Ibid., p. 36.

judge or rater and confound the reliability of the test with the judge. With qualitative records this essential ambiguity is impossible to avoid, but the devices of measuring a judge against himself and against other judges yield generalized information about the reliability of the test, when used by judges meeting the same specifications.

A further problem is that for a judge of any given discrimination skill, the reliability of a coding, rating, or matching operation depends upon the heterogeneity of the materials to be treated. If the protocols are diverse, reliability will tend to be high, but if they are very similar, the task of discrimination is difficult and, therefore, the reliability of the ratings or matchings tends to be low.[14]

In psychometric practice, reliability is ordinarily determined by repeating the test to establish the temporal constancy with which it measures, or by giving different forms of the test to demonstrate that each form is yielding and adequate and hence a stable measurement of the total sampled. These two kinds of operation often yield roughly equivalent results, but they are not logically identical, and involve distinct problems.

In general, objectifying the reliability of the typical projective test is difficult and as yet an unsolved problem. Although several methods now in use for determining reli-

---

[14] Ibid., p. 36.

ability of projective tests have been discussed above; none of them completely solves the problem, i. e., (1) matching procedures yield ambiguous assessments because they confuse test and judge, (2) the use of temporal indexes of reliability is precluded if one believes that personality changes through time, and (3) the use of alternate forms as a measure of the stability of a test leads to unambiguous results only if the test materials have been selected on some systematic basis.[15]

Devising a more or less unstructured test situation is not too difficult--the problems encountered in proving the dependability of the technique is another matter. But since reliability is implied by validity, it is perhaps possible to get around the difficulties involved in measuring reliability, if it is possible to demonstrate that one's test makes valid predictions with respect to other variables.

Validity: Test validity refers to the accuracy with which prediction can be made from test performance to other areas of behavior. It is customarily measured in terms of the relationship between test performance and an established criterion or set of criteria. Although all aspects of validation are interrelated, in general, they may be treated under four headings: (1) validation objectives, (2) scoring variables or interpretive patterns of the test to be related

---

[15] Ibid., p. 42.

to the criteria, (3) criteria against which to measure the validity of a given test, and (4) permissible generalizations.[16]

1. Validation Objectives: Validation studies to date have been inconclusive because very few concise validation objectives have been specified and investigated. The present need is to select and to formulate some of these objectives in terms of testable hypotheses. Whether a specific validation question is a feasible one to investigate will depend upon discovering, among other factors, whether it can be formulated in such a way that it is susceptible of a research design that will give the data necessary for an answer.

The specific concepts, constructs, and systematic theories used to organize the empirical data of tests and the empirical data of criterion variables as well are central to what validation objectives are sought and how formulations of research tasks are made. The laws of science derive from the discovery of verified functional relationships among empirical data obtained by methods duplicable by others. The concepts and constructs used are theoretical variables devised to reduce the complexities of empirical data (behavior, in the case of personality theories) to such a degree that functional relationships between classes of data can be determined. The scientific worth of these

---

[16] Ibid., p. 42.

theoretical tools in comparison to other concepts lies in their greater ability and utility in showing definitive functional relationships or in extending the generality of such relationships among the empirical materials of the problems investigated. Constructs have to be modified continuously in the direction of greater utility. Concepts and constructs are not entities but are theoretical organizational tools concerned with functional (or dynamic) relationships.[17]

The field, at present, is in a state of semantic confusion growing out of the different theoretical orientations. This makes communication and understanding difficult. It makes even more difficult a common statement of common problems amenable to research formulation, since research demands concepts that can be operationally defined and tested.

Therefore validation goals to be amenable to research must be set in terms that the test behavior can be demonstrated to have predictive relevance to psychologically important life situations. Also, each objective has to have explicit formulation to be testable, and each has to be tested against its own relevant and reliable criterion.

2. Scoring Variables: In general, there are three possible courses of action in handling relationships among scores: (1) Single score categories can be validated

---

[17]Ibid., p. 44.

against simple quantitative dimensions; however, this method destroys the Gestalt aspect or protocol and criterion; (2) The scores can be combined and weighted statistically, i. e., in multiple regression equations, to predict quantitative criterion variables; (3) Quantitative validation can be abandoned and scored categories subjectively combined into a qualitative interpretation.[18]

3. The Criteria: Since criteria are the reference standards against which the protocols are to be validated, they must meet certain minimum standards. Unless a reliable reference standard is used, a test's predictive usefulness cannot be assessed. Good objective criteria are available relative to the stability of protocols over time. Also, if predictions concern overt behavior, criteria are available from observation and case materials. By using such devices as descriptive codes, reliability can be assessed. However, in the prediction of personality dynamics the criteria are essentially clinical interpretation and synthesis.[19]

4. Permissible Generalizations: Since generalizations are limited by the nature of the test area measured and by the samples of subjects used--all validation research concerns population sampling. Generalizations, even for the most widely used tests, is legitimate only for those few population classes for which adequate data have been

---

[18] Ibid., p. 46.

[19] Ibid., p. 47.

collected. Therefore, in choosing the research design for a validation study, one must consider whether he wishes to demonstrate merely that there is a nonfortuitous relationship between test and criterion, or to prove that the test has practical value in predicting the criterion status of individuals.[20]

Definitely the design of projective research must be set in such a way that the findings will verify our hypotheses or force us to modify or discard them. Also if devices that disclose projective and expressive materials are to prove their scientific and diagnostic value or worth, they must rest upon a strong foundation of clinical perceptiveness, of productive theory, and of research upon basic psychological and social processes.

---

[20] Ibid., p. 50.

CHAPTER 9

PROJECTIVE PSYCHOLOGICAL TESTS

The concept of personality as multi-dimensional, and the present resurgent interest in perception and its relation to the perceiver, has given rise to new psychometric techniques for obtaining perspective insight into personality.

A survey of literature in the field reveals many publications dealing with projective tests. Professional interest in the field of projective testing has increased rapidly, mainly as a reaction against the static conceptions and techniques which have for so long dominated psychological testing. Also, projective techniques seemed to offer new methods, interpretations, and applications to many unsolved problems of personality. In this regard, they have been found to be extremely useful in guidance services to individuals.[21]

At present there is still a great deal of disagreement as to the exact nature of projective tests.[22] Hutt believes

---

[21]Max L. Hutt, "Projective Techniques in Guidance," in W. T. Donahue, et. al. in The Measurement of Student Adjustment and Achievement (Ann Arbor: University of Michigan Press, 1949), p. 59.

[22]The nature and concepts of projection have been discussed in detail in an earlier section.

the term "projective tests" should be applied to all test situations in which the individual's needs cause him to react in his own unique manner to a relatively unstructured stimulus situation.[23] Almost anything, if the situation is unstructured, can be used as a stimulus, e. g., ink blots, incomplete sentences, pictures, jumbled sounds, etc. The personal way in which the subject perceives the stimulus, and reacts to it, brings the projective mechanism into operation.

The responses to this type of test offer rich data for personality analysis; however, there is still great difficulty in obtaining objective, reliable, and valid evaluations. At present, chief reliance for validity is placed on the training and ability of the examiner.[24] Definitely any research in the study of the individual must consider him as a unique, whole organism. Thus, in a clinical approach, such as used in guidance services, where the data from many different sources may be compared and evaluated, projective methods can make great contributions. When all available evidence is put into a common framework it can result in new insights, and offer many leads for use in guidance and therapy.[25]

Any classification of projective techniques will, of

---

[23]Hutt, op. cit., p. 62.

[24]Ibid., p. 62.

[25]Ibid., p. 63.

necessity, be artificial as projective tests may vary widely in methodology and theoretical substructure. Abt and Bellak recognize that, in general, in all the projective methods there are adaptive, expressive, and projective elements, but in greatly varying amounts from one procedure to the next.[26]

Willey, although recognizing the difficulty in classification, attempts a broad classification based generally on type of expressiveness, i. e., drawing, painting, and drama are considered artistic or dramatic products of behavior; sentence and story completion are considered oral and written methods of expression; the Rorschach Test, Thematic Apperception Test, Szondi Test, etc., are classified as visual stimulus techniques.[27] For the purposes of this paper, no specific classification is needed and none is attempted.

Relation of Projective Tests to Education and Guidance

Projective tests are assuming an ever-increasing role in guidance and education. Some of the most frequently used tests, in these areas, are: (1) Rorschach, (2) Thematic Apperception Test, (3) Szondi, (4) Sentence-Completion, (5) Bender-Gestalt, (6) Cloud Pictures, (7) Drawing, (8) Finger Painting, (9) Play Techniques, (10) Psychodrama, (11) Sociodrama, and (12) Story-telling. A description

---

[26]L. E. Abt, and L. Bellak, Projective Psychology (New York: Alfred A. Knopf, 1950), p. 72.

[27]Roy DeVerl Willey, Guidance in Elementary Education (New York: Harper and Brothers, 1942), p. 449.

of each of these projective techniques and their use in education and guidance follow:

1. Rorschach Test: This test, of all the projective tests in use at present, is the best known, most widely used, and the subject of many research studies in the field. The test was formulated and introduced by Dr. Hermann Rorschach in 1921, and consists of ten symmetrical ink-blot designs. A brief description of these test figures are as follows: The test consists of ten symmetrical ink-blot designs, printed on white paper 8 by 10 3/4 inches. All the figures are centered on the paper, which is mounted on cardboard. They are always presented in exactly the same order and a standardized administration procedure is followed. Five of the cards are gray-black varying in amount of saturation (Figures I, IV, V, VI, and VII). Two of the remaining cards contain bright red blotches but no other color (Figures II and III). The remaining three cards are constituted of color blots only (Figures VIII, IX, and X).

Implicit in the use of the test is the concept of the personality as multi-dimensional. As such, the test measures personality operations along three major dimensions. As summarized by Beck these are: Conscious intellectual activity, the externalized emotions and internalized emotional living.[28]

---

[28]Samuel J. Beck, "The Rorschach Test: A Multi-Dimensional Test of Personality," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 105.

However, each of these are not static but are also measureable along more than one dimension.

The Rorschach cards contain structures with properties and characteristics to which the average subject may respond in a largely adaptive manner. This process leads quite naturally to the production of "popular" responses. In general, the adaptive behavior elicited by such stimulus materials can probably be considered as a stable index of the individual's reality orientation.[29]

Intellectual activity, in general, is measured by the following dimension: good perception of form, perception of the whole, organization of perception, sequence of responses, animal content responses, popular responses, and total productivity.

Inner psychological operations are measured by the various color responses, in the light determined and vista responses, texture perceptions and response to white spaces.

Fantasy living is reflected in movement responses, both human and animal. A major psychological force in structuring the personality is the "Experience Balance," which is an estimation of the balance between introversive and extrotensive living and is obtained as a quantitative relation between the "movement" and "total color" scores. Also, good form perception is regarded as a major index in the test to the ego's developmental level and firmness.

---

[29]Abt and Bellak, op. cit., p. 72.

Thus, the Rorschach Test demonstrates a theory of personality as a system of psychological forces in constant strain and check one against the other. This is in accord with the theory in which the whole personality is regarded as an equilibrated system having its foundations in the neurolcgical substratum of which the psychological operations are functions.[30]

The Rorschach Test cannot be scored mechanically, but requires an intensive inspection and evaluation of the various categories by the examiner. It is believed that the Rorschach and other projective techniques are more effective than the interview and paper and pencil schedules in determining a child's capacity to be flexible and spontaneous in adjusting to new situations.[31] The test deals primarily with perception rather than with fantasy or imagination and the child should respond in terms of what the blots mean to him, rather than by just meaningless descriptions.[32]

The Rorschach test, as described above, is an individual instrument. As such, as is true of many other individual testing instruments, there is a lack of trained clinicians, and a great deal of time is required for the training as well as administration. Thus, in schools it cannot be used

---

[30]Beck, op. cit., p. 121.

[31]Willey, op. cit., p. 459.

[32]Ibid., p. 459.

extensively but must be reserved for the extreme deviate or maladjusted student. Recognizing these limitations from a time and economy standpoint, two forms of "group techniques" for the Rorschach have been developed by Harrower and Steiner: (1) The Group Rorschach Technique, and (2) The Multiple Choice Test.[33]

In the Group Rorschach Technique the Rorschach blots are presented via slides and the subjects write down a full description of the things they see in the blot. If the test is properly conducted it will result in material useful for evaluation. Scoring is essentially the same as for the individually presented Rorschach.[34]

In the Multiple Choice Test the Rorschach blots are also presented via slides, but instead of writing down his impressions, he chooses from a list of thirty possible choices, the three which most nearly approximate his own perception of that particular blot. An individual's score on the test is in the terms of the number of times he picked choices that have been drawn from "normal" records and the number of times he picked answers representative of the psychopathological group.[35]

---

[33]M. R. Harrower, "Group Techniques for the Rorschach Test," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 8.

[34]For a more detailed discussion of the "Group Rorschach Technique" see M. R. Harrower and M. E. Steiner, Large Scale Rorschach Techniques (Springfield, Illinois: Charles C. Thomas, 1945).

[35]For a more detailed discussion of the "Multiple Choice

There is a considerable amount of research going on in the field with respect to the validity and reliability of both the individual form and group forms of the Rorschach Test. Attempts are also being made to relate certain of the Rorschach scoring variables to personality traits. Reports on various school populations also indicate an increasing application of this test to guidance and education.

Cronbach made a study of success in college, utilizing the Group Rorschach. He attempted to correlate the scores of 200 Group Rorschach records with average academic grades, ACE scores, Sociometric Ratings, and emctional adjustment as rated by heads of dormitories. He concluded, "In the sample studied, the Group Rorschach, objectively scored, failed to predict scholastic success, and gave only small correlations with criteria of social and emotional adjustment."[36]

McLeod, in a Rorschach study of preschool children ages four to six noted that as children develop there is a decrease in personalization of perception (reduction of perseverative and confabulatory Rorschach responses). Also there was an increase in objectivity of perception (improvement in form level), and there is a decrease in vagueness

---

Test" see M. R. Harrower and M. E. Steiner, Large Scale Rorschach Techniques (Springfield, Illinois: Charles C. Thomas, 1945).

[36]Lee J. Cronbach, "Studies of the Group Rorschach in Relation to Success in the College of the University of Chicago," Journal of Educational Psychology, 41 (1950), 65-82.

(increase in elaboration and differentiation).[37]

The Rorschach as a predictor of academic success was used by McCandless with two matched groups of officer candidates (for the U. S. Maritime Service) who differed widely in academic achievement. The results indicate that an analysis of the conventional Rorschach categories failed to demonstrate any important statistically significant differences between the high point and the low point students.[38]

Taylor, utilizing the Rorschach in vocational guidance, concluded that because the Rorschach describes "the nature of intelligence, personality, and styles of adjustment," of normal as well as abnormal people it has positive value in vocational guidance.[39]

2. The Thematic Apperception Test: This test today ranks second only to the Rorschach in widespread clinical use. It was originally described by Morgan and Murray in 1935.[40] It is a technique for the investigation of the dynamics of personality as it manifests itself in inter-

---

[37]Hugh McLeod, "A Rorschach Study with Preschool Children," Journal of Projective Techniques, 14 (1952), 453-63.

[38]B. R. McCandless, "The Rorschach As a Predictor of Academic Success," Journal of Applied Psychology, 33 (1949), 43-50.

[39]Joseph L. Taylor, "Application of the Rorschach in a Jewish Vocational Agency," Jewish Social Service Quarterly, 25 (1949), 349-56.

[40]C. D. Morgan and H. A. Murray, "A Method for Investigating Fantasies; The Thematic Apperception Test," Archives of Neurology and Psychiatry, 34 (1935), 289-306.

personal relationships and in the apperception or meaningful interpretation of the environment. It consists, in its present form (third revision), of a series of thirty-one pictures (thirty pictures and a blank card).[41] Testees are asked to tell stories about some of these pictures, thereby presumably revealing their personal, individual apperception of purposely ambiguous stimuli.

The pictures can be so arranged that they make four sets of twenty cards each: (One for adult males over 14, one for adult females over 14, one for boys and one for girls). Cards are marked with proper letters to correctly identify them, i. e., "M" for men, "F" for women, "BM" for both boys and men, and "GF" for both girls and women. Cards on which the number is not followed by a letter can be used for all ages and sexes.

There is no set method of administration, and essentially it is up to the examiner to create a situation in which he will get the maximum of response from the subject. It is generally agreed that the methods of administration must vary according to the examiner's purpose. Also, the number of cards used and the particular ones chosen will vary according to the purpose for which the test is being given.[42]

---

[41]Henry A. Murray, Thematic Apperception Test (Cambridge, Mass.: Harvard University Press, 1943), set of thirty cards and manual.

[42]Robert R. Holt, "The Thematic Apperception Test," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 204.

The T. A. T. test essentially supplies content. It gives primarily, and more so than any other test in use at present, the actual dynamics of interpersonal relationships. By the very nature of the pictures it gives basic data on the testee's relationship to male or female authority figures, to contemporaries of both sexes, and frequently it shows the genesis in terms of family relations. The T. A. T. is only incidentally a diagnostic tool.[43]

The T. A. T. has been interpreted in many ways. The easiest and simplest procedure is simply by inspection. However, the value of this method is, to a large extent, dependent on the experience and training of the examiner.[44]

Murray and his co-workers developed a method of story analysis, based on a Need-Press method.[45] Other workers in the field, notably Rappaport, Henry, Rotter, and Tomkins, have each attempted to work out their own methods of analysis and interpretation.[46]

Essentially interpretation of the T. A. T. consists of the process of finding a common denominator in the con-

---

[43]L. Bellak, "The Thematic Apperception Test in Clinical Use," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 186.

[44]Ibid., p. 191.

[45]Henry A. Murray, et. al., Explorations in Personality (New York: Oxford University Press, 1938).

[46]For an excellent review of these methods of scoring and analysis of the T. A. T. see F. Wyatt, "The Interpretation of the T. A. T.," Rorschach Research Exchange and Journal of Projective Techniques, II (1947), 21-26.

temporary and genetic behavior patterns of a person.[47] Therefore, it is important that the examiner avoid making a diagnosis or interpretation on the basis of any one story, but instead should look for a repetitive pattern, and in addition try to find corroboration from sources of information external to the T. A. T.

In general, the questions of reliability and validity which hold true for other projective measures hold true for the T. A. T. Many workers in the field do not consider the T. A. T. a test in the same sense as objective measures and consequently feel that the usual concepts of reliability and validity cannot be applied without considerable quantification.

Holt has restated the problem of reliability for the T. A. T. so that it is based on: (1) the extent that the stories reflect transient states (moods and recent experiences), and (2) to what extent are they based on the slower-changing dynamic and structural features? To date the reliability of the T. A. T. has never been specifically investigated in these terms, and thus, it remains an open problem.[48]

However, there have been some relevant studies which provide some data. One of these by Coleman, in which he studied the T. A. T. stories of forty-one children shortly

---

[47]Bellak, op. cit., p. 196.

[48]Holt, op. cit., p. 221.

after they had seen a movie, indicated that the movie did not influence the content of the stories significantly.[49] Tomkins made an intensive study of the stability of need-press scorings (using Murray's scheme) and concluded that repeat reliability, as scored in this way, could be as high as .8 or .9, depending upon the time between the administrations and the rigidity of the subject.[50]

Studies have also been reported in attempting to establish reliability by the agreement of different scorers working with the same protocols. In general, it was found that those working with a few simple sets of categories achieved high reliabilities, while those using complex and highly differentiated sets of categories did not obtain very high reliabilities.[51]

In general, in a technique like the T. A. T. it is still impossible to separate validity from the interpreter. Therefore, any specific statements based on the T. A. T. must be regarded as a function of the following factors: (1) the ability, experience, and training of the interpreter, (2) the system of scoring and interpretation used, and (3) the particular kind of statements, predictions, or ratings

---

[49]William Coleman, "The Thematic Apperception Test: I Effects of Recent Experience: II Some Quantitative Observations," Journal of Clinical Psychology, 3 (1947), 257-64.

[50]Silvan S. Tomkins, The Thematic Apperception Test (New York: Grune and Stratton, 1947).

[51]Holt, op. cit., p. 222.

required.[52]

The form of the test most widely known is a test for adults, but some clinicians have found it useful for studying children. The test has been found to reveal data concerning identification, emotions, and the relative strength of the needs of the child.[53]

Cox and Sargent, who studied the Thematic Apperception Test responses of a group of "stable" and "disturbed" seventh grade boys, found that the "disturbed" child showed far greater constriction than the "stable" child.[54]

Wittenborn also found that a client's discussion of the meaning of his stories during counseling interviews may have therapeutic value.[55]

The T. A. T. has proved quite useful in revealing facts of personal history.[56] It has also been utilized in predictions of leadership ability in officer candidates.[57] Thus,

---

[52] Ibid., p. 222.

[53] Willey, op. cit., p. 461.

[54] Beverly Cox and Helen Sargent, "T. A. T. Responses of Emotionally Disturbed and Emotionally Stable Children: Clinical Judgment versus Normative Data," Journal of Projective Techniques, 14 (1950), 60-74.

[55] J. R. Wittenborn, "Some Thematic Apperception Test Norms and a Note on the Use of the Test Cards in the Guidance of College Students," Journal of Clinical Psychology, 5 (1949), 157-61.

[56] Arthur W. Combs, "The Use of Personal Experience in Thematic Apperception Test Story Plots," Journal of Clinical Psychology, 2 (1946), 357-63.

[57] Henry A. Murray and Morris I. Stein, "Note on the Selection of Combat Officers," Psychosomatic Medicine, 5 (1943), 386-91.

as used by competent interpreters the T. A. T. may be used as a basis for valid inferences about a wide variety of traits and abilities.[58]

3. The Szondi Test: Constructed by Lipot Szondi, an Hungarian psychologist, this test, in recent years, has received increased interest and use. Susan K. Deri is the foremost exponent of this test in the United States, and it is largely through her writings that the test was first introduced into this country.[59]

The test consists of forty-eight photographs of different faces, in six sets. Each set contains eight photographs of various types of mental patients. These are: (1) a homosexual, (2) a sadist, (3) an epileptic, (4) a hysteric, (5) a catatonic schizophrenic, (6) a paranoid schizophrenic, (7) a manic-depressive depressive, and (8) a manic-depressive manic. Thus, eight different types of patient are to be found in each set, and each disease category is represented by six photographs. The subject is presented with the single series consecutively and is asked to choose the two pictures he likes best and the two he dislikes

---

[58]William E. Henry, "The Thematic Apperception Technique in the Study of Culture-Personality Relations," Genetic Psychology Monographs, 35 (1947), 3-315.

For a thorough up-to-date review of studies using the T. A. T. the interested reader is referred to Robert R. Holt and Charles E. Thompson, "Bibliography for the Thematic Apperception Test," Journal of Projective Techniques, 14 (1950).

[59]Susan K. Deri, Introduction to the Szondi Test (New York: Grune and Stratton, 1949).

most, and these twenty-four choices are recorded on a profile chart. Choices in any one category give an indication of tendencies latent in the subject; disliked choices represent rejected, repressed, or sublimated tendencies accepted by the superego. A high number of choices indicates that the respective tendency is near manifestation.[60]

The stimulus material was selected on the basis of Szondi's theory, which he calls "genotropism." This theory involves the action of the recessive genes (latent hereditary factors in human beings). Szondi believes that these genes do not remain inactive within humans, but exert a very important and decisive influence upon behavior.[61] Deri, in explaining Szondi's theory, states:

> The latent recessive genes exercise some sort of power of attraction....the psychological function of the latent recessive genes consists in directing our instinctive choice reactions. Thus, one indication of this directing supposedly is that our libido is attracted by, or directed toward, individuals who to some extent have a gene stock that is similar to our own.[62]

The eight types of mental disorder were selected on the basis of Szondi's belief that they followed Mendelian laws of

---

[60]Susan K. Deri, "Descriptions of the Szondi Test: A Projective Technique for Psychological Diagnosis," American Psychologist, 1 (1946), 286.

[61]Albert I. Rabin, "The Szondi Test," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 498.

[62]Susan K. Deri, "The Szondi Test," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 298.

inheritance. The eight factors of the test are thought of as corresponding to eight different need systems. Also, the eight kinds of emotional needs, represented in the test by their extreme pathological representatives, are assumed to be the eight basic divisions of emotional life in regard to which we have to evaluate any personality. A description of these eight needs, as given by Deri, is as follows:[63]

1. The "h" factor: represents the need for tender, "feminine" love.

2. The "s" factor: represents the need for physical activity and aggression, the need for masculinity.

3. The "e" factor: Indicates the way the person is dealing with his crude, aggressive emotions.

4. The "hy" factor: represents the person's need to exhibit his emotions.

5. The "k" factor: represents the narcissistic ego-needs.

6. The "p" factor: indicates the expansive tendencies of the ego.

7. The "d" factor: indicates the need for acquiring and mastering objects.

8. The "m" factor: indicates the need for clinging to objects for the sake of enjoyment.

The above factors make up four drive vectors, each vector consisting of two factors. The four vectors

---

[63] Ibid., pp. 302-03.

are:[64]

I. S-Vector: The sexual drive (composed of the "h" and "s" factors).

II. P-Vector: Paroxysmal--surprise drive (composed of the "e" and "hy" factors).

III. SCH-Vector: The self drive (composed of the "k" and "p" factors).

IV. C-Vector: The contact drive (composed of the "d" and "m" factors).

Each vector represents a certain personality area that appears in an extremely exaggerated form in pathological conditions corresponding to the two factors that constitute it. The vectors are regarded as representing general drives, and the factors are considered more specific drives or need systems. Supposedly the four drive vectors represent the entire scope of driving forces in the human personality, "normal" or "abnormal."[65]

The relationship between vectors, and especially between the factors in each vector, is a close one. Therefore, in any interpretation of this test, the interdependence of the various factors must be stressed.

The function of the test is to indicate the degree or state of tension, as well as the person's conscious or unconscious attitude to the tension, in each of the eight need

---

[64]Rabin, op. cit., pp. 505-06.

[65]Ibid., p. 505.

systems described earlier. Thus, whether pictures will be chosen as liked or disliked will depend on the existence of need-tensions, i. e., the person's acceptance or non-acceptance of this particular drive. He receives a "plus" if he identifies himself with the psychological tendency expressed by the pictures of a certain category; in case of a rejection the reaction will be "minus." The above holds true if the implicit assumptions on which they are based are accepted, i. e., (1) that essential emotional characteristics are expressed through the photographs used in the test, and (2) that in the subject's taking the test there is an unconscious recognition of, and responding to, these essential psychological qualities.[66]

This test has been subject to much criticism on the basis of the statistical techniques employed, and its reliability and validity have been constantly challenged. Lubin and Malloy working with patients in a mental hospital conclude that photographs of the same type of mental patient as used in the Szondi test are not behaviorally equivalent to one another, i. e., a patient's response to one photograph is not, in general, a better than chance prediction of how he will respond to the other five photographs of the same factor. Thus, they feel that the basic assumption underlying the Szondi test is invalid.[67]

---

[66]Deri, op. cit., p. 303.

[67]A. Lubin and M. Malloy, "An Empirical Test of Some

Prelinger, working on the problem of reliability of the Szondi test, felt that in order for this test to be reliable it must meet the requirement, "that each picture has the same valence for directing the choice of the testees." Based on an analysis of 6,552 choices of pictures from 71 unselected subjects, he concluded that, "for the majority of the pictures in the Szondi test the requirement of equivalence is not fulfilled. The choices of pictures mainly seem to be determined by general inter-individual tendencies rather than by individual differences...the psychodiagnostic usefulness of the Szondi test in its present form is limited."[68] However, a recent survey of Szondi research showed that in many of the studies of the Szondi the statistical techniques employed were only approximate, and thus, a criticism of all Szondi test studies is that they are not crucial tests of the Szondi test itself.[69]

At present, validation has been mainly a clinical one by those who use the method. There have been no crucial experiments, as yet, that would validate the test, its personal analyses, or its predictive capacity. However, certain

---

Assumptions Underlying the Szondi Test," Journal of Abnormal and Social Psychology, 46 (1952), 480-84.

[68]Ernst Prelinger, "On the Reliability of the Szondi Test," Psychological Service Center Journal, 3 (1950), 227-30.

[69]Wilson H. Guetin and Herbert G. McMahan, "A Survey of Szondi Research," American Journal of Psychiatry, 108 (1952), 180-84.

aspects of this technique recommend its application in many normal and pathological conditions, e. g., its ease of administration and lack of need of verbal response from the subject. Thus, the Szondi test can often secure information easily from constricted, rigid and linguistically handicapped persons from whom other projective methods many times may elicit little or no response.[70]

4. Sentence Completion Test (SCT): Sentence completion is one of the oldest forms of objective testing. This type of test consists of a number of incomplete sentences presented to the subject for completions. Usually sentences are selected which explore significant areas of an individual's adjustment, or in some special situations tests may be used for the purpose of investigating some specific cluster of attitudes. An example of the first might be, "I get angry when.....," or "My mother....." An example of the latter might be, "Negroes are all right but.....," or "Jewish people are....."

This test is often considered as a variation of the Word Association test; the main difference being in the length of the simulus. Workers in the field have also claimed that in comparison with the World Association Test the SCT cuts down the multiplicity of associations evoked by a single word; that it is better able to suggest contexts, feeling tones, qualities of attitude, and specific

---

[70]Rabin, op. cit., pp. 510-11.

objects or areas of attention; that it allows greater individual freedom and variability of response; and that it taps a larger area of the subject's behavioral world.[71]

The response usually provides information which the subject is willing to give, and analysis is usually more like that for the T. A. T. than for the Word Association method. It is assumed that the responses reflect the wishes, desires, fears, and attitudes of the person. This method differs mainly from other projective devices in that it does not depend so much on the subject's interpretation of the standard stimulus, as upon what he is able and willing to write under the test conditions.[72]

When compared with the usual objective tests, the SCT has many advantages: (1) It provides freedom of response; (2) The nature of the test is more disguised, and (3) It is easily administered in group form. However, it does not have the advantage of machine scoring, nor can it be scored by non-professional personnel.

---

[71]J. B. Rotter and B. Willerman, "The Incomplete Sentence Test As a Method of Studying Personality," Journal of Consulting Psychology, 11 (1947), 43-48.
J. Shor, "Report on a Verbal Projective Technique," Journal of Clinical Psychology, 2 (1946), 279-82.
I. Lorge and E. L. Thorndike, "The Value of Responses in a Completion Test As Indications of Personality Traits," Journal of Applied Psychology, 25 (1941), 191-99.
A. D. Tendler, "A Preliminary Report on a Test for Emotional Insight," Journal of Applied Psychology, 14 (1930).

[72]Julian B. Rotter, "Word Association and Sentence Completion Methods," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 295.

When compared with other projective tests, its advantages are: (1) It is readily administered in group form; (2) No intensive training is required for its administration; (3) Interpretation may be made based on general experience, i. e., clinical training is helpful but not essential; (4) It lends itself readily to experimental or screening situations; and (5) It can be administered, scored and analyzed quickly.[73] However, it is not as well disguised as many other projective techniques, and illiterate, disturbed, or uncooperative subjects may not produce sufficient responses.

There are no specific administration instructions for the test; two types being in general use. One stresses speed, i. e., the subject should respond as quickly as possible with the first thought that comes to mind; in the other the subject is asked to respond so that he expresses his own personal feelings. In a test any one of the types may be emphasized, or both may be combined.[74]

Sentence beginnings and structure may vary widely. They may include personal pronouns such as "I feel," or "I like;" third person references such as "he thinks," or "she wishes;" or neutral stimuli in which no pronouns are used, such as "sex is," or "brothers are." The sentence beginnings may be highly structured as, "The thing to do

---

[73] Ibid., pp. 295-96.

[74] Ibid., p. 296.

when you fail...." or highly unstructured as, "The future ...." A recent study by Sacks brings out information useful in test construction.[75] He constructed two forms of a sentence completion test in an attempt to compare the value of items stated in the first person with similar items stated in the third person. In general, the form of the test employing the first person was found to be superior. (Six of the seven psychologists used as raters felt this to be so.) Interpretations from the first person form of the test were also found to be significantly more predictive (criterion based on psychologists' rating) than the form of the test using proper names and third-person pronouns.

Sentence completion tests are based primarily on apperceptive distortion and analysis of content of the completion words, inasmuch as the incomplete sentence technique often constitutes a social or emotional situation that the subject has to be prepared to interpret in terms of his established images and memories.

There are many forms of the sentence completion test. In one form that exists, the examiner is asked to look for general patterns involving (1) persistence, (2) striving for success, (3) feelings of inferiority, doubt, and worry, (4) depression, (5) high standards, and (6) emotional

---

[75]Joseph M. Sacks, "Effect Upon Projective Responses of Stimuli Referring to the Subject and to Others," Journal of Consulting Psychology, 13 (1949), 12-21.

stability.[76]

In another form the sentences selected and used contributed information regarding the following areas of personality: (1) family, (2) the past, (3) drive, (4) inner states, (5) goals, (6) cathexis, (7) energy, (8) time perspective, (9) reactions to others, and (10) others' reaction to him.[77]

The Sentence Completion Test has been utilized in a variety of educational, guidance, and social situations. Its usefulness in these areas is attested by the ever-increasing number of reports of studies and applications in these areas. A few such studies suggestive of the work in these fields are described:

Rhode advocated the use of the SCT as a tool for psychologists and other professional people who deal with youth problems.[78] She maintained that this type of projective technique avoided making the individual self-conscious or or putting him on the defensive. Thus, she felt that the test would reveal latent needs, sentiments, attitudes and aspirations which the subject would be unwilling or unable

---

[76]P. M. Symonds, "The Sentence Completion Test As a Projective Technique," Journal of Abnormal and Social Psychology, 42 (1947), 320-29.

[77]H. A. Murray, "Techniques for the Systematic Investigation of Fantasy," Journal of Psychology, 3 (1937), 115-43.

[78]A. Rhode, "Explorations in Personality by the Sentence Completion Method," Journal of Applied Psychology, 30 (1946), 169-81.

to express in direct communication.[79]

Rhode then constructed a sentence completion test for studying the personality characteristics of young people based on a revision of Payne's list of questions.[80] The criteria used in selecting and constructing the items were: (1) a broad enough range to elicit information about all phases of personality, (2) unstructuring of the items to allow the maximum freedom of response, and (3) total time required must be such as to fit the schedule of schools and institutions. The final product was the Rhode-Hildreth Completions Blank, which is finding extensive application in many schools throughout the country. The final form consisted of sixty-four items and was intended primarily for individuals approximately twelve years of age. It can be given as either an individual or group test. Rhode claims that her test reveals the subject's inner needs, inner states, traits, tastes, sentiments, ideology, ego structure, intellectual status, and emotional maturity.[81]

Shor has described a sentence completion technique designed for studying general personality problems. In this test the person was required to complete the beginning

---

[79]Joseph M. Sacks and Sidney Levy, "The Sentence Completion Test," ed. by L. E. Abt and L. Bellak in Projective Techniques (New York: Alfred A. Knopf, 1950), p. 364.

[80]A. F. Payne, Sentence Completions (New York: New York Guidance Clinic, 1928).

[81]Rhode, op. cit., pp. 169-81.

of sentences that touched upon feeling tones and qualities of attitudes, e. g., "What puzzles me...." and "My greatest fear...." The sentences in this test yielded a great amount of diagnostic material, and there were strong indications that, with modifications, it would be extremely useful for research on complex social problems.[82]

Rotter, Rafferty, and Schactitz developed a sentence completion test for a measure of the degree to which the individual was in need of personal therapy or counseling.[83] Separate scoring manuals were developed for male and for female college students.

5. The Bender Visual-Motor Gestalt Test: This is the most widely known and used perceptual motor test. The test was originally published by Bender in 1938.[84] The material consists of nine geometrical figures derived from Wertheimer's configurations.[85] The test essentially is based on the Gestalt school of psychology, i. e., perception of visual stimuli may be regarded as a dynamic process in which selection, organization, differentiation into foreground and

---

[82]Shor, op. cit., pp. 279-82.

[83]J. B. Rotter, J. E. Rafferty, and E. Schachtitz, "Validation of the Rotter Incomplete Sentences Blank for College Screening," Journal of Consulting Psychology, 13 (1949), 348-56.

[84]Lauretta Bender, "A Visual-Motor Gestalt Test and Its Clinical Use," Research Monograph No. 3 (New York: American Orthopsychiatric Association, 1938).

[85]Max Wertheimer, "Studies in the Theory of Gestalt Psychology," Psychologische Forschung, 4 (1923).

background, and action or motility take place in an interchangable pattern. Thus, according to Schilder, "organization gets its final meaning only in relation to concrete situations of life which adapt the patterns to the actions and experimentations of individuals."[86]

It is important that certain fundamental concepts of Gestalt psychology be understood if the underlying assumptions and applications of the test are to be clearly understood. A description of the factors which determine the Gestalt, as described by Bender and listed by Waltman, may be useful in this respect:

> 1. The stimulating pattern in the physical world which must obey certain laws of Gestalt.
> 2. The motility of the visual field, which determines spatial relationships.
> 3. The temporal factor determined by the motility and sequential relationships, which tend to become more intricately integrated into the spatial relationships with maturation processes and are determined therefore by the temporal factor of the life span of the individual.
> 4. The motor reaction pattern of the individual, his attitude toward and actual participation in the individually created experience.
> 5. The immediate tendency for each of these factors to be nonseparable from the others.[87]

The factors that play an important part in the process of integration are defined by Bender as follows:

> 1. The biological character of the visual field or the principles of perception based upon

---

[86]Bender, op. cit., p. vii (preface).

[87]A. G. Waltman, "The Bender Visual-Motor Gestalt Test," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 326.

spatial relationships.

2. Temporal relationships based upon the span of the preceding experience of the individual and therefore upon the length of the maturation process.

3. Motility factors which are closely related in the impulses and attitudes toward the problem itself.[88]

Thus the seeing and reproduction of geometrical designs is not merely a simple task of learning, but is a process involving numerous factors. Bender's investigations have shown that the physical laws of Gestalt psychology are applicable to the investigation of personality problems and deviations.[89] However, definite dynamic concepts have been added to the fundamental Gestalt tenet of total reaction to total situation; not only are what and how the individual perceives considered, but the way in which the perceptions are used is also evaluated.[90]

At the time Bender published her original monograph she gave no specific instructions for administering the test. However, in 1946, she published a pamphlet with some general instructions, i. e., "Here are some figures for you to copy. Just copy them as you see them. Do the best you can."[91]

---

[88] Ibid., p. 326.

[89] Ibid., p. 326.

[90] Florence Halpern, "The Bender Visual Motor Gestalt Test," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 324.

[91] Lauretta Bender, Instructions for the Use of the Visual Motor Gestalt Test (New York: American Orthopsychiatric Association, 1946).

The interpretation of the test results essentially depends on an understanding of: (1) Gestalt principles (2) maturational factors affecting visual motor activity, and (3) personality dynamics, especially as manifested in graphic media. In perception, the individual organizes the stimulus in terms of his own experiences. Thus, the end-product consists of the visual pattern, the temporal factor of becoming, and the personal-sensory-motor factor. The Gestalt which results is more than the sum of all these factors. In the perception of gestalten there is a tendency to complete and reorganize them in accordance with principles biologically determined by the sensory-motor pattern of action.[92]

The Bender-Gestalt has been used as a maturational test in visual Gestalt function in children and to explore retardation, loss of function, and organic brain defects in children and adults. Personality deviations that show regressive phenomena have also been studied successfully with its help.

Woltman found the test useful in diagnosing of organic and psychotic conditions. However, since "personality disturbances in the neurotic personality seldom invade the visual-motor sphere" he found its usefulness in neuroses limited.[93]

---

[92]Halpern, op. cit., p. 326.

[93]Woltman, op. cit., pp. 322-56.

Harriman and Harriman reported a study in which they attempted to use the Bender-Gestalt as a measure of school readiness. They concluded that:

> Appraisal of the Bender Visual Motor Gestalt Test results shows that there are significant differences in at least four major determinants when five year old and seven year old normal children are compared. These variances may be accounted for in part by the fact that the older children have had more training in task-oriented work, with standards imposed by adults. In large part, however, they seem to be the result of important differences in maturational levels. The sensory-perceptual-motor responses of children in the second grade tend to resemble those of adults. The responses of children in the nursery school exemplify idiosyncratic examples of syncretistic behavior. In other words reduction of autokinetic effects is the most obvious cause for the differences which may be observed in a comparative study of this type.[94]

It is the opinion of most workers with this test that the diagnosis of personality factors should not be based solely on the findings of this test alone, but should be used in connection with regular batteries of exploratory methods, and with knowledge gained from other clinical data.

6. The Mosaic Test: Although mosaic pieces have been used for a long time in the observation of children, this particular test was first originated by Margaret Lowenfeld

---

[94]Mildred Harriman and Philip L. Harriman, "The Bender Visual Motor Gestalt Test As a Measure of School Readiness," Journal of Clinical Psychology, 6 (1950), 175-77.

A criticism of the Harrimans' hypothesis is expressed in an article by Marcella Baldwin, "A Note Regarding the Suggested Use of the Bender Visual Motor Gestalt Test As a Measure of School Readiness," Journal of Clinical Psychology, 6 (1950), 412-15.

in England in 1931. Using a set of colored wooden mosaic pieces, she found that the designs made with them constituted "a valuable aid in estimating emotional stability," and that it was possible to "distinguish between educational and intellectual retardation due to emotional blocking, and educational and intellectual retardation which arose from inherent mental defects."[95] The main diagnostic uses of the test were restricted to (1) emotional disturbances, (2) temperamental difficulties, (3) formal psychological attitudes, and (4) intellectual deficiencies.[96]

Lowenfeld originally used a set of 465 small wooden pieces in varied colors and shapes, i. e., six colors (block, white, red, blue, green, and yellow) and five shapes (squares, diamonds, and triangles of right angle, isosceles, and scalene form).[97]

From Lowenfeld's beginning, Wertham developed an entirely new method of analyzing and interpreting mosaics by correlating in very large number of cases the mosaic designs made by adults and children with definite diagnostic

---

[95]Margaret Lowenfeld, "A New Approach to the Problem of Psychoneurosis in Childhood," British Journal of Medical Psychology, 11 (1931), 194.

[96]Frederic Wertham, "The Mosaic Test," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 231.

[97]Woodrow W. Morris, "Other Projective Techniques," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 529.

clinical reaction types.[98] Wertham used the same test set as Lowenfeld, to which he added one piece. He gives a detailed description of this set as follows:

> The pieces are 4/32 of an inch thick. There are six colors: black, blue, red, green, yellow, and off white. Each color is represented in six shapes as follows:
>
> Squares: 1 1/8 inches on each side. Four pieces of each color.
>
> Diamond-shaped pieces: 1 1/8 inches on each side. Eight pieces of each color.
>
> Equilateral triangles: 1½ inches on each side. Six pieces of each color.
>
> Triangles: 1 5/8 inches on the base, 1 1/8 inches on each of the other two sides. Eight pieces of each color.
>
> Triangles: 2/3 of an inch on one side, 1½ inches on the second side, 1 3/8 inches on the third side. Twelve pieces of each color.
>
> Oblongs: 1½ inches by ¼ inch. Twelve pieces of each color.
>
> These pieces are used on a tray that measures 16 inches by 10½ inches having a raised margin about half an inch wide to keep the blanks from sliding off as they are used.[99]

The test is administered by showing the subject the pieces in a box. A sample of each shape and color is shown with the explanation that all shapes come in every color, and every color in each shape. The subject is then told he can make anything he wishes. There is no time limit. Upon completion Wertham recommends asking the subject what he was thinking of when making the design. Also, what does it represent? What did he want to make? What does it look like?

---

[98] Fredric Wertham and Lili Golden, "A Differential-Diagnostic Method of Interpreting Mosaics and Colored Block Designs," American Journal of Psychiatry, 98 (1941), 124.

[99] Wertham, op. cit., p. 232.

Does he like it? What does he think of it? Difficulty in achieving an intended Gestalt can have important clinical significance, and the answers to the above questions can often reveal significant data concerning the subject's thought processes.[100] Upon completion of the design an exact size record of it is made.

Interpretation of the mosaics can be made either immediately from the original tray or later from the reproduction recorded on paper. Various methods of interpretation have been followed by different investigators. Wertham enumerates twenty-five characteristics for the interpreter to keep in mind, for later use in differential diagnosis of clinical conditions. These are:

1. Number of designs
2. Coherence or incoherence of design
3. Representational or abstract
4. Harmony of the design as a whole
5. Completeness or incompleteness of design
6. Meaningfulness or emptiness of design
7. Simple or complex
8. Compactness or looseness
9. Distinctness of configuration
10. Relation of design to object
11. "Static" or "dynamic" designs
12. Expression of configuration
13. Position of design within the frame of the tray, general distribution
14. Number of pieces used
15. Choice of color
16. Choice of shapes
17. Emphasis on form or on color
18. Simple geometric designs
19. Appropriate choice of shapes for intended representation
20. "Stonebound" designs
21. "All-Over patterns"

---

[100] Ibid., pp. 232-33

22. Symmetry
23. Repetition
24. Content
25. Relation of design to verbal utterances of the subject.[101]

Diamond and Schmale, in order to evaluate and compare performance from the standpoint of personality structure, graded mosaic performances in five categories: "(1) normal, (2) mildly defective, (3) moderately defective, (4) severely defective, and (5) unclassified."[102] As a result of this study they concluded that

> A. The ability to produce spontaneously an idea for a pattern and to execute the pattern within the limits of the test materials correlates with and reflects the basic personality integration of the subject;
> B. Mosaic performance is an integrated whole and must be interpreted and evaluated as an entity;
> C. Mosaic performance tends to correlate with the degree of personality disturbance manifested in various clinical disorders;
> D. Indications are that abnormalities in mosaic patterns appear very early, are profound and consistent, and are little affected by superficial changes in attitude, cooperation, affectual status, and social adjustment;
> E. The mosaic test is simple and rapid to administer, although its interpretation requires much experience.[103]

The test in general is one of expression and organization, and appears to function primarily on myoneural basis, being therefore chiefly useful at present in differentiating

---

[101] Ibid., pp. 236-44.

[102] B. L. Diamond and H. T. Schmale, "The Mosaic Test: I An Evaluation of Its Clinical Application," American Journal of Orthopsychiatry, 14 (1944), 240-41.

[103] Ibid., pp. 249-50.

gross disturbances of a possibly organic basis from the more nearly functional disorders.

The mosaic test has also proven its usefulness as part of a test battery. In a recent study Colm used this test in conjunction with the Rorschach and Binet tests.[104] The test was used for six years with some 1,500 children who presented behavioral or educational problems, or physical difficulties of either somatogenic or psychogenic origin. She concludes that the mosaic test proved to be valuable as a complement to the Binet and Rorschach, and was especially useful for differential diagnosis between defective endowment and defective functioning. Evidences of impairment in abstract thinking were helpful in determining types of brain damage and in throwing light on the specific mental functioning following brain tumor removal.

7. Drawing: Drawing analysis, similar to most of the other projective techniques, requires skill and training on the part of the interpreter; the amount of information which can be secured from this technique will thus vary with the skill and experience of the examiner and from subject to subject.

The drawing method is a situational test in which the

---

[104] Hanna Colm, "The Value of Projective Methods in the Psychological Examination of Children: The Mosaic Test in Conjunction with the Rorschach and Binet Tests," Rorschach Research Exchange, 12 (1948), 216-37.

subject is presented with a problem, and in his efforts to solve it, he engages in verbal, expressive, and motor behavior. This behavior, as well as the drawing, is observed and hypotheses are then tested against other available information. The basic assumption involved is that every aspect of behavior has some significance.[105]

This projective method has many advantages: (1) It is easy to administer, (2) requires only a pencil and paper, (3) takes only a short time, (4) may be interpreted directly from the figures without intermediary scoring or coding, (5) may be preserved indefinitely and analyzed at leisure, (6) offers direct testimony of the subject's projection, rather than a verbal description of it, (7) usually accepted easily by the verbally shy or inhibited child, (8) may be applied to the foreign born or illiterate, (9) practically no limitation of age, intelligence, or artistic skill, (1) offers a safe opportunity for release, often with therapeutic effects, (11) sufficiently ambiguous so that it cannot easily be malingered, (12) offers a variety of dynamic patterns of self-expression, and (13) may be applied to groups of almost any size.[106]

---

[105]Sidney Levy, "Figure Drawing As a Projective Test," ed. by L. E. Abt and L. Bellak in Projective Psychology (New York: Alfred A. Knopf, 1950), p. 259.

[106]Karen Machover, "Drawing of the Human Figure: A Method of Personality Investigation," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 342.

The study of the personality of the child through his drawing was first demonstrated by the use of Goodenough's Draw-A-Man Test.[107] Although Goodenough concerned herself primarily with the human figure in relation to intelligence, she did recognize the potentialities for personality analysis through the test.[108]

Seeman also found that children's drawings at various stages of maturation have definite developmental characteristics, i. e., three general developmental stages: (1) the scribbling stage characterized by random dots and dashes, lines, whirls and circular-tending forms; (2) subjective representation characterized by a continuance of subjective, decoratively printed words, caricatures, human forms, and conventional designs.[109]

The figure drawing test is easily administered. The subject is given paper and pencil and instructed to "draw a person." When he finishes the first drawing he is then asked to draw a figure of the opposite sex to the completed drawing. If possible, notes are kept regarding comments and procedures of the subject.

As an optional part of the administrative procedure,

---

[107] F. L. Goodenough, Measurement of Intelligence by Drawings (Yonkers, N. Y.: World Book Company, 1926).

[108] F. L. Goodenough, "Studies in the Psychology of Children's Drawings," Psychological Bulletin, 25 (1928), 272-83.

[109] E. Seeman, "Development of Pictorial Aptitude in Children," Character and Personality, 2 (1934), 209-21.

an inquiry may be added after the pictures are drawn. This may take the form of having the subject write stories concerning each of the figures drawn, or he may be asked questions with regard to age, schooling, family, occupation, etc., of the figures. This verbal procedure is not an essential part of the drawing technique, but it offers an opportunity to get important indirect clinical information about the subject, and it also may serve for validation of the graphically portrayed features. Many times, the drawings are interpreted separately from the verbal associations, or even without any associations.[110]

The basic principles utilized for the interpretation of this test have evolved, over a period of time, from the study of particular drawing traits in coordination with the clinical history of the subject, supplementary test data, and psychiatric and psychological opinion.

Interpretation of the test may be approached in different ways. Krim, after reviewing the literature, concluded that drawing interpretation logically divides itself into three parts: (1) formal, (2) graphological, and (3) psychoanalytical (content analysis).[111]

Levy, after considerable trial and error, evolved a technique of analysis based upon a Drawing Analysis Record

---

[110]Machover, op. cit., p. 345.

[111]Murray Krim, "Diagnostic Personality Testing with Figure Drawings," (Unpublished Thesis, New York University, 1947).

Form.[112] The method of analysis, utilizing this form, involves consideration of the following characteristics: (1) figure sequence, (2) figure description, (3) comparison of figures, (4) size, (5) location, (6) movement, (7) distortions and omissions, and (8) graphology.[113]

Machover's method of interpretation is based on the assumption that personality develops through the movement, feeling, and thinking of a specific body. She feels that the body, with its visceral tensions and muscular strains, is the battleground for the needs and presses and provides the focus for the study of personality. She thus advocates the concept of a body image, which is regarded as the complex reflection of self-regard-the self-image. Thus, in general, the drawing of a person represents the expression of self, or the body, in the environment.[114]

Many reports dealing with drawings have appeared in the literature over the past twenty years. However, in recent years there has been a rapidly increasing interest in drawing as a "projective method." A few recent studies of this type will be described, as suggestive of the re-

---

[112]Sidney Levy, Drawing Analysis Record Form, Copyright, 1948.

[113]Levy, "Figure Drawings As a Projective Test," op. cit., pp. 263-82.

[114]Machover, op. cit., p. 348. For a complete discussion of Machover's technique see Karen Machover, Personality Projection in the Drawing of the Human Figure (Springfield: Charles C. Thomas, 1948).

searches now being carried on:

Appel describes a method of utilizing drawing as an aid to securing free verbal expression from a child in the course of a psychiatric interview. The procedure involves alternate drawing by child and psychiatrist with gradual approach to the more intimate details of home life about which children are often unwilling to speak freely.[115]

The child's concept of self is attracting more attention in the literature of recent years. The significance of drawing for the self concept has been discussed by Wolff.[116] Elkisch has developed a method of scoring by which a child's social qualities might be diagnosed.[117] This was done on the basis of a critical study of the drawings of eight children, four of whom were popular with their playmates and four unpopular. Criteria used were (1) rhythm vs. rule, (2) complexity vs. simplexity, (3) expansion vs. compression, and (4) integration vs. disintegration.

In a comparative study of public-school, retarded, and delinquent children's drawings, England found that

---

[115] K. E. Appel, "Drawings by Children As Aids to Personality Studies," American Journal of Orthopsychiatry, 1 (1931), 129-44.

[116] W. Wolf, The Personality of the Pre-School Child, The Child's Search for His Self (New York: Grune and Stratton, 1946).

[117] Paula Elkisch, "Children's Drawings in a Projective Technique," Psychological Monographs, 58 (1945), 1-31.

delinquents produce more drawings and that their pictures appear to be more social. Retarded children differed very slightly from other groups.[118]

A comprehensive review and summary of the literature dealing with the psychology of children's drawings from 1928-1949 has been made by Goodenough and Harris, in which the increasing interest in, and use of, projective techniques is well illustrated.[119]

8. Finger-Painting: Finger-painting, as such, has been known for centuries; however, its systematic application as a diagnostic therapeutic or educational tool is a fairly recent development. Ruth Shaw is given credit as the originator of modern finger-painting, as it was her emphasis on this technique as a method of releasing students from fears and inhibitions, as well as strengthening their confidence, which brought it to the attention of psychologists and educators.[120]

Finger-painting has been found to possess many advantages over other methods. Briefly these are: (1) It is one of the least structured mediums and, thus, reduces

---

[118]Arthur O. England, "A Psychological Study of Children's Drawings: Comparison of Public School, Retarded, Institutionalized and Delinquent Children's Drawings," American Journal of Orthopsychiatry, 13 (1943), 525-30.

[119]Florence L. Goodenough and Dale B. Harris, "Studies in the Psychology of Children's Drawings: II 1928-1949," Psychological Bulletin, 47 (1950), 369-433.

[120]Ruth F. Shaw, Finger Painting (Boston: Little, Brown and Company, 1934).

blocking and resistance, (2) particularly suited to free associative processes, (3) its freedom of color choice rarely induces rejection, (4) enhances communication because subject verbalizes own symbols and projections, (5) can be used by most individuals regardless of age, sex, or mental capacity, and (6) can be applied in either an individual or group situation.[121]

Finger-paints are plastic materials which the subject applies with his bare hand to a blank sheet of paper. A basic assumption in finger-painting is that it is an expressive form of behavior which will reveal significan characteristics of the individual.[122]

The materials necessary for the administration of finger-painting have been listed by Napoli.[123] It consists essentially of (1) any standardized finger-painting product (colors used being blue, black, brown, green, red, and yellow), (2) standard finger-painting paper, and (3) finger-painting record form. There are no standardized directions for administration, a survey of the literature revealing many variations among examiners. The directions

---

[121]Peter J. Napoli, "Finger Painting," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 387.

[122]Asya L. Kadis, "Finger-Painting as a Projective Technique," ed. by L. E. Abt and L. Bellak in Projective Psychology (Alfred A. Knopf, 1950), p. 403.

[123]Napoli, op. cit., p. 388.

as used by Kadis are quite thorough and will give an idea of the general procedure:

> Here are six basic colors, which may be used in any combination for any effect. We don't use brushes because we have ten fingers. Five are on one hand and five are on the other. That is much more than on a brush. Do anything you want to do and tell me when you are finished.[124]

More than one painting is usually made, as it has been found that several paintings give a more accurate picture of the individual's total behavior pattern. Average performance time is fifteen to twenty minutes; there being considerable variation with different age groups. After finishing the painting, the subject is usually asked to name each one, and asked if it relates in any manner to his own life. Children are often asked to make up stories in connection with their paintings.

There is no set method of interpretation. However, most workers agree that the subject's behavior is of considerable importance, i. e., the situation in many respects is similar to a play setting and gives a good opportunity to obtain significant behavioral data.

With regard to the finger-painting itself, Kadis found the following characteristics of importance in interpretation: (1) time element, (2) space utilization and location, (3) color, (4) shading, (5) strokes, (6) content, (7) movements and motions, and (8) rhythm.[125] Napoli also believes

---

[124] Ibid., p. 410.

[125] Kadis, op. cit., pp. 412-25.

that color, motion, texture and content are useful categories on which to base interpretations.[126]

Most of the studies in the field have attempted to relate various personality traits and adjustment procedures to the interpretative categories mentioned above. Alschuler and Hattwick in a discussion of easel painting (applicable to finger-painting) distinguish between cold and warm colors, the former being indicative of a higher degree of impulse control than the latter.[127] Also, Napoli perceived well-defined male and female trends in color preferences.[128] Alschuler and Hattwick also identified vertical lines as representing assertive drives and horizontal lines to denote self-protective, fearful, overtly cooperative characteristics.[129]

Thus, in addition to being part of the general education program, finger-painting is also being used as a diagnostic projective technique, as a means for stimulating free associations, as a part of psychotherapy, and in play therapy.[130]

---

[126]Napoli, op. cit., pp. 405-07.

[127]R. H. Alschuler and L. B. W. Hattwick, Painting and Personality (Chicago: University of Chicago Press, 1947).

[128]P. J. Napoli, "Finger-Painting and Personality Diagnosis," Genetic Psychology Monographs, 34 (1946), 192-230.

[129]Alschuler and Hattwick, op. cit., 1947.

[130]Napoli, "Finger-Painting and Personality Diagnosis," op. cit., pp. 192-230.
P. J. Napoli, "The Interpretive Aspects of Finger-

9. Play Techniques: Play can be a very valuable educational medium. It is a natural and major factor of activity in the life of all children, and with it the teacher can accomplish the important objective of education.

Initial studies involving the diagnostic and therapeutic value of play centered around psychoanalytic theories without being aware of the developmental aspects.[131]

In play the child is usually free to act as he wishes and reality conditions can be easily changed. Amster, has summarized the uses to which play may be put as: (1) to aid in diagnostic understanding, (2) to establish a working relationship, (3) to re-establish different ways of playing, (4) to help the patient verbalize certain materials, (5) to help the child act out unconscious material, and (6) to develop an interest in play useful in other settings.[132] From the classroom teacher's point of view all of these possible uses are practical: their degree of usefulness, however, depends upon the insight and training of the teacher.

Practically all types of materials can be used in play

Painting," Journal of Psychology, 23 (1947), 93-132.
E. Mosse, "Painting Analyses in the Treatment of Neurosis," Psychoanalytic Review, 27 (1947), 65-81.
J. A. Arlow and A. Kadis, "Finger Painting in the Psychotherapy of Children," American Journal of Orthopsychiatry, 16 (1946), 134-46.

[131]R. Harms, "Play Diagnosis: Preliminary Considerations for a Sound Approach," Nervous Child, 7 (1948), 233-46.

[132]F. Amster, "Collective Psychotherapy of Mothers of Emotionally Disturbed Children," American Journal of Orthopsychiatry, 14 (1944), 44-52.

techniques, e. g., dolls, clay, assorted toys, cars, bricks, etc. In the play situation we try to see the world through the child's eyes, and try to understand the causes of his lack of adjustment. It is often difficult to distinguish diagnostic from play features, and one should look for possible mental or personality deviations and their significance for determining the nature and degree of the child's problems.

Treatment through play techniques may be approached in several ways. One of the most widely used is "release therapy" which is aimed at the release of the child's feelings, with no attempt at insight or interpretation on the part of the therapist. This was discovered by Levy when he found that children who had been subjected to a recent anxiety-provoking situation could be given much comfort by recreating the situation in effigy.[133]

The psychological approach is a planned play procedure in which the needs of the child determine the "acts" arranged by the therapist.[134] There is also the non-directive approach in which the responsibility and direction are left to the child.[135]

---

[133] D. M. Levy, "Trends in Therapy: III Release Therapy," American Journal of Orthopsychiatry, 9 (1939), 713-36.

[134] J. H. Conn, "Play Interview As an Investigative and Therapeutic Procedure," Nervous Child, 7 (1946), 257-86.

[135] V. M. Axline, Play Therapy: The Inner Dynamics of Childhood (Boston: Houghton Mifflin Company, 1947).

The relationship of the therapist and the child is extremely important in play techniques, especially as used in therapy. It is also indicated that each child should be handled according to clinical reaction type.[136]

10. Psychodrama: Originated by Moreno, this new "action" approach to human interrelations is based on the premise that the roles of the individual, and of the individuals who make up the groups in which he functions, are measurable units of behavior.[137]

In psychodrama the subject is put on a stage and assumes a role (either of himself or someone else depending upon the situation or problem). The way he reacts to this situation (plays the role) may reveal much valuable information concerning the person. As a basis of a therapeutic approach to interpersonal maladjustments, Moreno developed the concept of spontaneity. This is defined as:

> Spontaneity is the ability of a subject to meet each new situation with adequacy...It is a plastic adaptation skill, a mobility and flexibility of the self, which is indispensable to a rapidly growing organism in a rapidly changing environment.[138]

Spontaneity is not the only process within the person, but also the flow of feeling in the direction of the

---

[136] A. G. McClure, "Reaction Types in Maladjusted Children; Some Clinical Observations with Reference to Play Therapy," British Journal of Medical Psychology, 20 (1945-46), 389.

[137] J. L. Moreno, Psychodrama, Vol. 1 (New York: Beacon House, 1946).

[138] Ibid., pp. 81, 93.

spontaneity state of another person. From the contact between two spontaneity states centering in two different persons, there results an interpersonal situation.[139]

The spontaneous individual is creative and flexible in his adjustments and thus plays his response roles resourcefully. The person low in spontaneity will reflect this in stereotyped or conventional role playing.[140]

Thus the role a person plays in life must be spontaneous and able to meet the demands of the moment. Therefore, psychodrama can act as a learning medium, teaching the subject to act spontaneously in an acceptable manner. This is possible because according to psychodramatic theory, spontaneity can be learned.

The actual process of psychodrama occurs in various stages: First, the warming up stage to reach a feeling level; followed by the spontaneity state in which the subject is able to throw himself into the situation, live through it, and enact every detail. After each performance an analysis and discussion are held in which both director and audience take part. The director is a key individual in this technique. He not only initiates the session but often plays an active role throughout.[141]

---

[139] Ibid., p. 81.

[140] R. B. Haas and J. L. Moreno, "Psychodrama As a Projective Technique," ed. by L. R. Abt and L. Bellak in Projective Techniques (New York: Alfred A. Knopf, 1950), p. 663.

[141] Ibid., p. 665.

This method is readily adaptable to the classroom. The teacher can act as director, and any members of the class, not actually participating in the drama, may act as audience and later help analyze the performance.

Some workers in the field believe that psychodrama is superior to other projective methods in the manner in which it samples actual behavior of the individual as he comes up against real-life obstacles in a social setting involving other people.[142] DelTorto and Cornyetz have used a set of experimentally constructed situations (Projection and Expressive Action Test) which provide a norm for interpreting the differential response of subjects as a planned operational procedure.[143] The emphasis, in their test, is upon spontaneous expression at all psychological levels.

The test has many useful applications in guidance and education. Haas has used it in treating the relationships of the individual to the group.[144] Lippitt has used it in in the training of leaders.[145] Gillies used it with first grade children to release tensions in the group.[146] Haas

---

[142] J. DelTorto and P. Cornyetz, "Psychodrama As Expressive and Projective Technique," Sociometry, 7 (1944), 356-75.

[143] Ibid., p. 371.

[144] A. B. Haas, "Action Counseling and Process Analysis, A Psychodramatic Approach," Sociatry, 1 (1947), 256-85.

[145] R. Lippitt, "The Psychodrama in Leadership Training," Sociometry, 6 (1943), 286-92.

[146] Emily P. Gillies, "Therapy Dramatics for the Public Schoolroom," Nervous Child, 7 (1948), 328-36.

has also reported an experiment with a psychodramatic unit at the University School at Columbus, Ohio, at which psychodrama was developed in educational settings at various grade levels.[147] Evaluation indicated that: (1) Psychodramatic and sociodramatic techniques are useful on the diagnostic, retraining and therapeutic levels from elementary school age to adulthood; (2) Personal problem, general social, and freely structured situations lend themselves most effectively; (3) Reverse Role and Auxiliary Ego production techniques are power stimulators of self-other evaluations; (4) Attitudes and skills in the area of human relations seem to undergo growth during sociodramatic participation.

Levy, discussing psychodrama in relation to the philosophy of cultural education, felt that contemporary society lacked a framework through which individual differences could be brought into fruitful relationships. He feels that psychodrama supplies such a framework, and permits the planned but unrehearsed dramatization of human problems for the purpose of dealing with them more effectively. Thus, the psychodrama technique may be structured for emphasis on diagnosis, therapy, or education; it functions in terms of personal, interpersonal, and societal experiences; and operates upon the basic hypotheses of an open universe, spontaneity of interaction, and the involvement of the self

---

[147]Robert B. Haas, "Leaves From an Educator's Notebook Illustrating Action Applications in Several Forms of Production," Sociatry, 2 (1948), 283-321.

in all its aspects with all other members of a qualitatively unlimited community.[148]

11. Sociodrama: Sociodrama, essentially, is a transition from individual psychotherapy to group psychotherapy.[149] In sociodrama the number of individuals in the group is unlimited; however, the individual can still receive help. The individuals who take the active parts are usually representative of types within a given culture; thus, they are not considered so much as individuals, but rather as parts of a cultural group structure.

Sociodrama deals with intergroup and group relations rather than with interpersonal relations. Thus, the group has to work out its problems on the stage just the same as the individual with problems. Sociodrama has been found to be well suited in solving problems where there are existing cultures in close proximity, and where the members of these cultures are in a continuous process of interaction and exchange of values.

Applications of sociodramatic techniques have been extensive. One sociodramatic technique (The Situation Test) allows the observer to follow the role behavior of individuals through a planned series of real-life or lifelike situa-

---

[148]Ronald B. Levy, "Psychodrama and the Philosophy of Cultural Education," Sociatry, 2 (1948), 225-34.

[149]F. B. Moreno, The Theatre of Spontaneity: An Introduction to Psychodrama (New York: Beacon House, 1947).

tions.[150]

Also, Shaftel and Shaftel, utilizing sociodramatic materials, conducted an experiment in an elementary school designed to carry discussion about American ideals over to a practice action level.[151] Problem stories and critical conflict situations found in the literature of child development were used as a basis for role-playing. They feel that the results indicated a peer group loyalty as against the adult social code, and the ability to achieve a socially acceptable solution. Also, from the standpoint of the teacher, sociodrama is considered a helpful device even for inexperienced teachers, as it allows for attitude exploration, fosters a permissive atmosphere, and permits the expression of solutions in terms of drives and impulses.

Haas, on the basis of a previous exploratory study, outlined the ways in which sociodramatic techniques may be used in education, and what their applications and limitations may be, and what methods may be expected to enrich the process of education in a democracy.[152] He believes the more frequently we can adjust our role-playing

---

[150] F. B. Moreno, "Situation Test," Sociometry, IX (1946), Nos. 2-3.

[151] George Shaftel and Fannie R. Shaftel, "Report on the Use of a 'Practice Action Level' in the Stanford University Project for American Ideals," Sociatry, 2 (1948), 245-53.

[152] Robert B. Haas, "Sociodrama in Education," Sociatry, 2 (1948), 420-29.

to that of others, the more socially literate we become. He also feels that the sociodramatic approach is a way of achieving this accomodation, while working consciously for mutual role adaptation by every member of a group. Insofar as the teacher and the school employ the techniques of sociodrama, they are instrumental in making the school a living laboratory for the resolution of interpersonal and intergroup conflicts through the application of the principles of democratic human relationships.

Sociometry

Closely related to sociodrama is sociometry, which represents a system of measuring the interrelation of feeling patterns among people.[153] Sociometrics essentially represents the viewpoint of others. Sociometry may be used with any group, whether it be a schoolroom, in which a child may be asked to select from the group those whom he wants to sit beside, or in a home for delinquents in which the girls may be asked which particular cottage mother they would like to live with. Sociometry has definite implications for group and individual guidance in the classroom.

Utilizing sociometric techniques, a test was devised (The Sociometric Test) which allows an observer to tap the spontaneous choice and rejection patterns that pass between

---

[153]F. B. Moreno, Who Shall Survive? (New York: Beacon House, 1934).

the members of a group and condition the psychological atmosphere in which they function.[154]

Sociometric guidance puts group members into optional work on play relationships.[155] Brunelle found it of aid in achieving educational objectives through improved cultural relationships.[156] Richmond has reported the results of sociometric tests given to 32 young women in a nurses' training school. The findings corresponded with information obtained in a previous intensive psychological examination of each girl.[157]

12. Story Telling: This technique has a strong natural appeal for children. The primary theory behind story-telling seems to be similar to Freud's dream theory.[158] Basically, the concept behind this technique is that it is felt that given a relatively unstructured topic, the story told will reveal the kind of information which could not be elicited

---

[154]Haas and Moreno, op. cit., p. 663. For further information on the application of The Sociometric Test see H. H. Jennings, Leadership and Isolation (New York: Longmans, Green and Company, Inc., 1943).

[155]F. B. Moreno, A Sociometric Work Guide for Teachers (Washington, D. C.: American Council on Education, 1947.)

[156]Peggy Brunelle, "Action Projects from Children's Literature: An Indirect Approach to Intercultural Relations in the Elementary School," Sociatry, 2 (1948), 235-42.

[157]Winifred Richmond, "Sociometric Tests in a Training School for Nurses," Sociometry, 13 (1950), 29-38.

[158]Woodrow W. Morris, "Other Projective Techniques," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 518.

by direct questioning.

In general, the use of stories involves the same principles that apply to other fantasy productions of the T. A. T. type; the main difference being in the character of the stimuli employed.[159]

There have been no reported attempts to "score" story productions, nor has reliability been estimated. Validation, also has not proceeded beyond the assumption that the fantasy material produced is autobiographical, or that symbolic expressions which are used are interpreted in a similar fashion as other fantasy productions.[160]

Stories may be oral or written. In dealing with young children it is essential that they be oral, and even for older children a greater spontaneity results with the oral method. Despert and Potter have done clinical studies on children with this method.[161]

Studies have also been made with children in a conflict situation. In the experiment the children told stories that essentially reflected a conflict situation. In a non-conflict situation the stories were different.[162]

---

[159] Ibid., p. 518.

[160] Ibid., p. 519.

[161] J. L. Despert, "Technical Approaches Used in the Study and Treatment of Emotional Problems in Children. Part I. The Story: A Form of Directed Phantasy," Psychiatric Quarterly, 10 (1936), 619-38.

[162] B. A. Wright, "An Experimentally Created Conflict Expressed by Means of a Projective Technique," Journal of Social Psychology, 21 (1945), 229-45.

Comic strips have also been used, with children, as a theme for story telling with a fair amount of success.[163]

---

[163] E. A. Haggard, "A Projective Technique Using Comic Strip Characters," Character and Personality, 10 (1942), 289-95.

CHAPTER 10

APPLICATION OF PROJECTIVE TECHNIQUES TO THE STUDY OF INDIVIDUAL AND GROUP PROBLEMS IN GUIDANCE AND EDUCATION

The purpose of projective tests "is to entice the subject into revealing himself without his becoming aware of the fact that he is doing so."[164] If this purpose is accomplished, it is obvious that this technique would be a welcome addition in solving educational problems. Schools have only recently become seriously interested in the personality and emotional development of children and have been handicapped by a lack of psychometric and sociometric devices capable of being used by teachers and administrators. Projective techniques may in part answer this need. The spread in the use of projective techniques has been extremely rapid, and as stated earlier, must be used with caution pending suitable reliability and validation studies. In the meantime projective techniques seem suitable in the diagnosis and measurement of intergroup attitudes and behavior, which have important implications for guidance and education. Deri, et. al., find the following uses and limitations of the projective technique:

---

[164] P. M. Symonds, "New Directions for Projective Techniques," Journal of Consulting Psychology, 13 (1949), 387-89.

> Projective techniques are primarily valuable for probing attitudes of which a subject is unaware. Such attitudes may sometimes be inferred from the subject's behavior in the ordinary course of events, but it is usually necessary to set up special testing or interviewing situations if one is to diagnose them with any assurance. Even with special test situations and valid theories about how subjects respond to these situations, projective interpretations can be grieviously in error. Careful investigators use more than one kind of testing or interviewing situation to elicit data for their projective interpretations, and arrange to have independent interpretations made by different individuals to check on reliability.[165]

Studies of Racial Attitudes

Brief descriptions of three somewhat different projective techniques used in the study of racial attitudes are given below:

In an attempt to ascertain the racial attitudes of a small group of college students, Reynolds used a set of incomplete sentences tobether with pictures taken from magazine illustrations.[166] Each picture contained both Negroes and Whites. The cartoon technique was used to ask a question or make a statement. Space was provided for response to an incomplete sentence by either a White or Negro respondent. Attitudes from a variety of social

---

[165] S. Deri, D. Dinnerstein, J. Harding, and D. Pepitone, "Technique for the Diagnosis and Measurement of Intergroup Attitudes and Behavior," Psychological Bulletin, XLV (1948), 248-71.

[166] R. T. Reynolds, "Racial Attitudes Revealed by a Projective Technique," Journal of Consulting Psychology, 13 (1949), 396-99.

situations are indicated in the test items:

1. (Negro) What did the boss say about my getting the job?
   (White) He said he would like you to have it but ......

2. (Negro) Do you have a table for four?
   (White) I'm sorry.....

3. (White) I heard she married a Negro.
   (White) She.....

9. (Negro) Is this house for sale?
   (White) It.....

13. (White) It's terrible how the Negro area looks in the city.
    (White) Why.....

20. (White) Mary has a lovely Negro girl as a friend at college.
    (White) Do they.....

In scoring the responses to the test situation, symbols were developed to designate whether the Negro was in the wrong or right, and to express degrees to which society was acting constructively or detrimentally with respect to the Negro.

Brown used a modification of the Rosenzweig Picture-Frustration Test to study hostile interracial attitudes.[167] The material of the test is a series of twenty-four cartoon-like pictures, each depicting a frustrating situation of common occurrence. On the left of each picture is shown a frustrating person saying certain words which either help to describe the frustration in which another individual on

---

[167] J. F. Brown, "A Modification of the Rosenzweig Picture-Frustration Test to Study Hostile Interracial Attitudes," Journal of Psychology, 24 (1947), 247-72.

the right of the picture finds himself, or which of themselves actually frustrate this other person. Facial and other expressions of personality are purposely omitted. The person on the right is always shown with a blank caption box above.

Description of Test Items: Six pictures were taken directly from the Rosenzweig test except features of detail which were drawn in, and served as neutral or stooge items. Also, there were three in which a Negro is in some way the source of the White's frustration, three in which the Whites are aggressive toward Negroes. Six others were chosen to represent the most frequent situations in which Jews are discriminated against, and six in which a Jew is the source of a frustration to someone who is a Gentile.

Scoring the test follows the outline of Rosenzweig's frustration theory. Responses are considered in terms of the direction in which aggressive reactions are made for the type of reaction displayed. The writer felt that this modification of the Rosenzweig P-F test was of considerable value in studying interracial hostility.

Ammons, who was interested in the awareness and development of interracial feelings in very young children, used what he calls a Projective Doll-Play Interview.[168] The

---

[168]Robert B. Ammons, "Reactions in a Projective Doll-Play Interview of White Males Two to Six Years of Age to Differences in Skin Color and Racial Features," Pedagogical Seminary, LXXVI (1950), 232-41.

method consists of the "doll" being interviewed in appropriate simulated real-life situations with the child giving the answers. The materials consisted of two dolls, one Negro and one White, built around a pipe stem cleaner frame and clothed in denim overalls and cotton print shirts. A miniature playground equipped with awnings, blocks, and toys provided the setting.

Sample questions from the interview will indicate the nature of the situation:

1. Here are two little boys who would like to play on this playground. (1a) Do they look the same? (1b) How are they different?

3. Have you ever played with any real colored boys or girls?

6. This (White) boy's mother comes along and sees the boys playing. What does she say?

8. They would both like to play with the car. They push each other. (8a) What does this one (Colored) do? (8b) Who gets the car? (8c) Why?

14. The little (Colored) boy throws sand at this (White) one. What does this (White) boy do?

In evaluating this technique as a method of research, Ammons says, "It can be seen from this evidence that the doll-play interview involves the child emotionally, provides a situation in which he can freely express his feelings, and is thus an adequate instrument for research."[169]

---

[169] Ibid., p. 240.

Studies of Personal Adjustment

The effect of emotional disturbances in children on their academic work is being increasingly recognized. Reynolds used a modification of the T. A. T. to diagnose the learning disabilities of students assigned to her for remedial work.[170] She used pictures from current magazines of children who approximated the age and socio-economic status of her pupils. The children were asked to choose one of the pictures and write a story about the child in the picture. They were to pretend that the child in the picture was having trouble with his school work, and they were asked to explain the origin and nature of the child's trouble. He was encouraged to compose the story around the child's home, his school, or his relationships with other people.

The following is a story given by a boy age eleven with an I. Q. of 112 who was referred for his difficulty in arithmetic:

> The picture you see above is a boy that is not happy. He probably has a father that is always nagging him. Every minute he does something he has to watch out for a mistake. All he has is worries. And he probably will tell you he has no time for studies. A boy has to have a happy home to be smart, willing and understanding. This often deprives him of many things. He is never happy. Sometimes he does not want to learn.

Rather detailed case histories of each student were

---

[170]Reynolds, op. cit., pp. 396-99.

available to the teacher who made her interpretation of each story in terms of what she knew about him. The writer felt that this technique was valuable in that it allowed children to project parts of their past history that had been repressed, and that this may be one of the significant ways of diagnosing the learning disabilities of children with serious learning problems.

In an effort to distinguish well-adjusted and maladjusted high school students, Wilson prepared a list of forty incomplete sentences.[171] Half of these related directly to different phases of school life, and were administered to students of grades ten and eleven. Teachers of the school presumably selected the well-adjusted and maladjusted students to take the test, though the students themselves were unaware of the basis for selection or the reason for taking the test. They were not required to sign their names to the papers. The test was not satisfactory in discriminating between the well-adjusted and the maladjusted student, yet it did have some real value as an aid to understanding adolescents and in finding areas of maladjustment in the individual pupil.

Haggard used comic strip characters in designing a projective test to study the personality of young children.

---

[171] I. Wilson, "The Use of a Sentence Completion Test in Differentiating Between Well-Adjusted and Maladjusted Secondary School Pupils," Journal of Consulting Psychology, 13 (1949), 400-02.

In this test, the children selected their favorite from among many comic strip characters, and then described what was happening in the comic strip. They were then asked to be an "author" and make up a story about the comic strip hero.[172]

Temple and Amen constructed a test, using a new picture technique for studying personality problems in young children. The test consisted of twelve pictures in each of which the face of the central character was omitted. The child was to select either a happy face or a sad face to complete the picture, and he was then asked the reasons for his selection. The central character, in all of the pictures, was a small child of ambiguous sex shown in a variety of situations. This technique produced responses that revealed many different anxiety areas in the experience of small children. It is also suggested that with some modification this method could also be used for studying racial and religious attitudes in young children.[173]

Culture-Personality Studies

The Rorschach and the T. A. T. have been used successfully in a wide variety of studies of cultures other than

---

[172] N. A. Haggard, "A Projective Technique Using Comic Strip Characters," Character and Personality, 10 (1942), 289-95.

[173] R. Temple and E. W. Amen, "A Study of Anxiety Reactions in Young Children by Means of a Projective Technique," Genetic Psychology Monographs, 30 (1944), 61-113.

our own.[174] A brief description of a modification of the T. A. T. as used in a culture-personality study is included as representative of the use to which projective techniques may be employed. The U. S. Office of Education, together with the Committee on Human Development of the University of Chicago, used the T. A. T. together with a number of other techniques to study the development of personality of Indian youth from birth to adulthood, and the relation of child training patterns to the social structure.[175] A series of pictures drawn by an Indian artist was used, which represented common everyday experiences of Indian children.

In addition to its use for individual personality study, the T. A. T. technique was found useful in studying psychological characteristics of the culture in the following areas:[176]

1. Relationship to the physical world.
2. The extent and nature of adult pressure upon children.
3. The nature and control of authority systems.
4. The characteristic of interpersonal relations and

---

[174]W. E. Henry, "The Thematic Apperception Technique in the Study of Culture-Personality Relations," General Psychological Monographs, 35 (1947), 3-135.

[175]W. E. Henry, "The Thematic Apperception Technique in the Study of Group and Cultural Problems," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 258.

[176]Henry, "The Thematic Apperception Technique in the Study of Group and Cultural Problems," op. cit., p. 261.

behavior.

5. The roles of the sexes.

6. The family role--father-child; mother-child; and sibling relationships.

7. Individual freedom and restraint.

8. Integration of White contact into native culture.

9. Psychological development during major life periods.

Life history, Rorschach, and battery analysis including moral ideology, rules of games and moral judgments tests were used to study the usefulness and validity of the T. A. T. analysis.[177]

Similar studies have been made of Mexican Indians, the Ojibwa Indians of Wisconsin, a South West African community, and South Pacific Micronesian groups. In these studies, pictures were drawn which reflected the culture of the group being tested and which permitted ready identification with the content of the pictures. The selection and construction of pictures to be used in this type of study is extremely important. Experience in the abovementioned studies revealed several criteria to be used in this respect. Thus, a test for this type of study should contain a basic set of pictures that (1) picture a number of basic interpersonal relations, e. g., mother-child, father-child, person alone, a heterosexual scene, a group scene, an authority scene, a scene representing the usual physical environment,

---

[177] Ibid., p. 258.

and scenes representative of some characteristic cultural economic activity; (2) at least one or two unreal or bizarre type of pictures; and (3) one or two pictures representing an illogical arrangement of reality events.[178]

Also, in addition to the above basic set, it is suggested that additional pictures be added to represent scenes characteristic of the culture or of the particular problem which is to be studied. It is important that these scenes be selected in consultation with an anthropologist who is familiar with the culture. The basis of these studies is still personality, and by selecting a dual set of pictures there is a greater chance of seeing the attitudes toward special problems in their proper setting of total personality dynamics.[179]

The pictures selected must also be interesting enough so that the subject will desire to respond. However, they cannot be too restricted but should be sufficiently flexible and ambiguous so they will allow a full range of emotions and a complete range of possible solutions to the emotional problems presented. It is also important that the pictures be pictorially appropriate for the culture of the group being studied.[180]

---

[178] Ibid., p. 263.

[179] Ibid., p. 264.

[180] Ibid., p. 264.

Group Action Studies

Coherent groups have an internal consistency and a pattern of emotionalized interpersonalized relationships. In order to understand the behavior of groups, they must be studied the same as individuals, i. e., in relation to a set of dynamics revealed in consistent patterns of interpersonal relationships and feelings. The majority of present day techniques used to study the dynamics of group structure are often inadequate and time consuming.[181]

The basic conception of a projective method for diagnosing group properties was developed at the Research Center for Group Dynamics at the University of Michigan.[182] The technique was that of a projective picture test with modified T. A. T. instructions. It was found that the story told by the group, based on the way it reacted to this relatively unstructured stimulus configuration, revealed important insights into the group's structure and internal processes. Thus, this projective instrument can be used in analyzing the structure and dynamics of the small face-to-face group. It can also be constructed for work with groups of adults who may meet for a wide variety of purposes.[183]

---

[181] W. E. Henry and H. Guetzkow, "Group Projection Sketches for the Study of Small Groups," Publication No. 4 of the Conference Research Project at the University of Michigan, Journal of Social Psychology, 33 (1951), 77-102.

[182] M. Horowitz and O. Cartwright, "A Projective Method for the Diagnosis of Groups," Human Relations (1951).

[183] Henry and Guetzkow, op. cit., pp. 77-102.

This technique, as utilized for the evaluation of "group Studies" gives evidence of great usefulness when adapted to problems in education and guidance. A study illustrating the use of this is that by Henry and Guetzkow. In the technique used by these men, five sketches are presented consecutively to the group, which is asked to compose a story about each of these pictures. Only the final composition, agreed upon by all of its members, is analyzed. The following is a brief description of the pictures used in the test:

1. Conference Group: A group of seven men assembled around a conference table.
2. Man in Doorway: A man is standing in the doorway of a house, his back and partial profile visible to the observer. He is looking out on the landscape.
3. Two Men: Two men are facing each other, the older man on the left, and the younger man on the right.
4. Woman and Man: An older woman sits in a wing chair. To her left, by a window is a younger man looking at the woman. There is an object in his hands.
5. Four men are in a room that looks like a clubroom. Two are seated on a small sofa, their backs to the observer; two other men are standing in front of them, one with his foot up on the seat of a chair.[184]

Three broad categories are considered in the scoring of the stories produced by the group to be interpreted or represented on a six point scale: Sociodynamics, Group Structure, and Outcome of Group Process.

Although the writers considered the interpretations

---

[184] Ibid., p. 77.

and scoring methods as tentative, they felt that the instrument held promise in providing a practical technique for the description of groups and in suggesting clues to insightful analysis and internal dynamics of small groups.[185]

An infinite variety of techniques, for the study of groups, is available to the research student according to his orientation and purposes. To this end Haggard suggests the following criteria in developing projective techniques:

1. The subject should be unaware of the purpose of the task and of the inferences to be drawn from his productions.
2. The task should be adapted to the subject's level of interests and abilities.
3. The task should be so designed that it is easy for the subject to "lose himself" in the test situation.
4. The test should disclose information regarding latent trends in the subject's personality.
5. There should be some method of evaluating and interpreting the obtained information or material.[186]

---

[185] Ibid., pp. 77-102.

[186] Haggard, op. cit., p. 289.

CHAPTER 11

VALUES AND LIMITATIONS OF PROJECTIVE TECHNIQUES

The introduction of projective techniques, their rapid growth and widely increasing application have created much discussion and argument among workers in the guidance, psychological and psychiatric fields.[187]

Groups were formed who accepted these techniques, as represented by the various projective tests, almost without question and with cult-like devotion and fanaticism proceeded to apply these tests to a wide variety of clinical situations. They produced research, mainly of the clinical variety, i. e., studying the relationships and magnitudes of a variety of the test factors in relation to psychiatric classifications and different age groups. In their experiments they did not question the basic foundations and principles of the test.[188]

As opposed to this group, there were other workers who believed in the traditional experimental approach, e. g., variation of single factors in otherwise controlled situa-

---

[187] Best exemplified by the Rorschach test, although it holds true for all projective techniques.

[188] Albert I. Rabin, "Validating and Experimental Studies with the Rorschach Method," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice Hall, Inc., 1951), p. 124.

tions. These workers did not accept the claims of the projective test supporters.

These groups, in general, did not agree on basic premises nor on standards of evidence. Those "sold" on projective tests regarded as incontrovertible, pragmatic proof of validity the testimony of many expert clinicians that projective devices are useful and give new clinical insights. They discounted negative findings from statistical evaluations of projective tests on the ground that statistics are inadequate for revealing complex configurations in multidimensional data.[189]

Critics of projective tests felt that the clinical reports of projective test validity usually confound the test and its interpreter, and are therefore not crucial to an appraisal of the test itself. They believed that the necessity for interpretation removed projective tests from the scientific field, because interpretation involves operations that are subjective and nonexplicit, and that the vocabulary of the projectivists was vague and often lacking in precision so as to preclude either proof or disproof.[190]

In recent years the division between these two opposing groups in projective psychology has grown smaller. Projec-

---

[189]Jean W. MacFarlane and Read D. Tuddenham, "Problems in the Validation of Projective Techniques," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), p. 27.

[190]Ibid., p. 27.

tive tests have proved their usefulness in clinical situations, in personality description and diagnosis.[191] Also, those working with the tests are more aware of the need for research and investigation.

However, the projective hypothesis has to be handled with care. There is always the possibility of an incautious extrapolation of these ideas beyond the limits for which they were devised. Also, behind the projective hypothesis there is a great number of assumptions which vary from worker to worker in the field and which mostly are implicit.

If projective psychology is to be accepted and validated it is essential that these assumptions be made fully explicit, and that they are tested to determine whether they have established validity and generality within the area of inquiry in which they are employed. The question of the validity and reliability of projective methods is of the greatest concern, and if projective tests are to have meaning and value--reliability and validity must be established. Macfarlane and Tuddenham offer five reasons which clearly and concisely seem to sum up the "why" of scientific objective validation for projective tests. They are:

> 1. A social responsibility. Too many persons of little clinical skill and maturity are using projective tests as if their validity with respect to all manner of unproved claims had been established. Worse, drastic decisions are being based upon such misuse of the tests. A body of fact

---

[191] Ibid., p. 124.

that shows the degree and areas of validity should reduce rather shocking present excesses.

2. A professional responsibility. By determining the areas of validity and invalidity with respect to defined reference-populations, the clinician's private norms can be supplemented, thus reducing his errors of interpretation and sharpening his interpretive skills.

3. A teaching responsibility. Only what is communicable is teachable, and we are faced with the task of training competent clinicians.

4. An opportunity to advance an important area of knowledge. A responsible attack on the problems of validity with the rich materials obtained through the use of projective techniques should refine our personality theories and add to trustworthy knowledge in this important field.

5. A challenge to research skills. We are confronted as scientists with a challenge to see if we have enough imagination to develop research methods that will organize in a public, repeatable, objective fashion the multifactor data that the skilled clinician organizes by unpublic interpretive synthesis. To date it is clear that the clinician has already made much progress in understanding personality in spite of, or perhaps because of, the fact that he has ignored many of the contemporary scientific folkways. As scientists, we still insist that the processes by which a clinician synthesizes his material are not beyond discovery, and that eventually we shall be able to correct his subjective errors and make his methods public.[192]

More fundamental research is required if projective tests are to be accepted as valid. An experimental approach is advocated by Beck for the validation of projective tests. He suggests general methods for this accomplishment with the Rorschach tests, which would be applicable to projective tests in general. They are:

1. More "blind" validating diagnostic studies involving minor differences of subgroups

---

[192]Macfarlane and Tuddeham, op. cit., p. 28.

within a larger general diagnostic group.

2. "Controlled" clinical descriptions with which Rorschach interpretations may be compared; this means that care should be taken that the clinical material deals with the same factors as the Rorscach interpretation, so that congruence of interpretation is possible.

3. Ingenious experimental designs that would by the performance involved define clearly certain activities corresponding to clearly defined Rorschach hypotheses represented by certain determinants.

4. Statistical methods to represent quantitatively the gestalt of the Rorschach pattern and the dynamic and modifying relationships between its various constituent factors.[193]

Rosenzweig also has suggested a method for validating projective techniques projectively. In his method trial and error are used systematically,

> ...with a succession of hypotheses being advanced, checked, rejected or revised until finally the character of the instrument... has been defined as a result of empirical investigation. The unique virtue of the recommended procedure of validation lies in its permitting the new instrument to define its own peculiarities regardless of the assumptions that may have led to its construction.[194]

Ainsworth has also likened the validation of projective techniques to the scientific process of validation of

---

[193]Samuel J. Beck, "The Rorschach Test: A Multi-Dimensional Test of Personality," ed. by H. H. Anderson and G. L. Anderson in An Introduction to Projective Techniques (New York: Prentice-Hall, Inc., 1951), pp. 143-44.
The word "test" may be substituted for the word "Rorschach" to make the above methods applicable in general to projective tests.

[194]Saul Rosenzweig, "A Method of Validation by Successive Clinical Predictions," Journal of Abnormal and Social Psychology, 45 (1950), 507-09.

hypotheses.[195] She feels that since satisfactory independent criteria are not available, prediction is seen as the most feasible method of demonstrating validity.

Today, the initial flush of enthusiasm of early day projectivists has somewhat abated, and whereas earlier projective tests were often considered as the answer to all testing problems, present indications are that as they exist now they are of limited value, except in those cases in which there are significant personality problems.

In general, projective testing has its greatest applicability to the problems of individual diagnosis and especially to the diagnosis of neuro-psychiatric individuals.[196] In this matter, they aid in the understanding of the psycho-dynamics of the individual case, in revealing the specific ideational content of conflicts, and in suggesting economical leads for guidance efforts.

Projective tests are also useful in predicting the outcomes of therapy.[197] Indications are that they should be equally useful in predicting the outcomes of the coun-

---

[195]Mary D. Ainsworth, "Some Problems of Validation of Projective Techniques," British Journal of Medical Psychology, 24 (1951), 151-61.

[196]Max L. Hutt, "Projective Techniques in Guidance," ed. by W. T. Donahue, et. al., in The Measurement of Student Adjustment and Achievement (Ann Arbor: University of Michigan Press, 1949).

[197]J. D. Benjamin and F. G. Ebaugh, "The Diagnostic Validity of the Rorschach Test," American Journal of Psychiatry, 94 (1938), 1163-78.

seling process.[198] Wide use is also being made of projective testing in schools, social work agencies, child guidance bureaus, mental hygiene clinics, and personnel bureaus.[199] Most modern guidance agencies find these tests essential in any comprehensive personality evaluation of their clients. Projective tests also have a general use as a direct therapeutic aid.[200]

In a general evaluation of the overall place of projective tests in guidance today, it appears that their accomplishments, thus far, have not been as great as their promise. This may be due partially to their newness, and also to a certain extent to their misuse by inadequately trained persons. However, for the short span of their existence they have made considerable contributions, and their potentialities are still tremendous. Present requirements for the continued growth and service of projective tests are: (1) greater ingenuity in their application, (2) more critical analysis in their evaluation, and (3) more creativity in research regarding them.[201]

---

[198] R. Munroe, "Use of Rorschach in College Counseling," Journal of Consulting Psychology, 7 (1943), 89-97.

[199] M. Krugman, "The Rorschach in Child Guidance," Journal of Consulting Psychology, 7 (1943), 83-90.

[200] Hutt, op. cit., p. 65.

[201] Ibid., p. 66.

PART IV

SUMMATION--IMPLICATIONS OF PSYCHOLOGICAL TESTING FOR GUIDANCE AND EDUCATION

CHAPTER 12

DEVELOPMENTS IN GUIDANCE, EDUCATION AND PSYCHOLOGICAL TESTING

The Development of Guidance As a Profession

In previous chapters we have considered two broad fields, the field of guidance and counseling and the field of psychological testing. An attempt has been made to show how these fields are integrated, i. e., to demonstrate the relevance of psychological tests of many varieties to counseling and guidance, particularly within the field of education.

For many years the field of guidance was an adjunct or supplementary function, in education, to the teacher's other obligations. Regardless of their qualifications, many teachers who had been assigned to advise students regarding academic problems found themselves confronted with problems that embraced all aspects of life.[1] It was implicitly assumed that because an individual was trained as a teacher, such a person could also automatically perform the duties of a guidance specialist. This notion has

---

[1]Wilma T. Donahue, "The Training of Guidance Workers," in W. T. Donahue, et. al., The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), p. 72.

undergone considerable revision in the past few years. The many special skills required of the guidance specialist; skills in interviewing, in gathering case history data, in the techniques of administering, scoring and interpreting psychological tests, in obtaining information about various kinds of vocational training, etc., have been increasingly recognized. At last guidance is developing as a mature field of professional endeavor destined to assist people in making adjustments to successive life situations.[2]

The Changing Role of the Counselor

The growing interest of educators in guidance, brought about by the increasing awareness of the individual as a complex organism, has of necessity expanded and changed the role of the counselor. This role is no longer a simple matter of educational or vocational testing, but is rapidly becoming a counseling function in all the meaning of the word, i. e., the counselor must now be concerned with all of the emotional and developmental problems of the individual. To the extent that tests can provide information useful in understanding and handling these problems, they are now an important adjunct to the counseling function.

With the growth of guidance as a profession there has also come the realization that professional training is

---

[2] Ibid., p. 71.

necessary. However, the extent and type of training for this work has not yet been clearly established, and the matter, to a considerable extent, is still in a state of flux. It is gratifying to note that training for the guidance field, at a professional graduate level, is now being taken seriously at an increasing number of colleges.

What is the best basis for guidance or "personnel" training? If guidance is considered as those functions which provide for the systematic and professional counseling of the individual, then training for guidance work must have as its base a knowledge of the individual human being.

Therefore, a brief statement of the qualifications and training of the guidance counselor is in order. Essentially, the areas which must be considered are:[3]

1. Personality: The guidance counselor must be able to instill confidence, to obtain cooperation and achieve rapid rapport with others. No one crystallized personality is the pattern for the counselor. There are opportunities for many variations. Persons with radically different personal characteristics may function as successful counselors in relatively different situations.

2. Intellectual Competence: An outstanding intellec-

---

[3]Wilma T. Donahue, "The Training of Guidance Workers," ed. by W. T. Donahue, et. al., in The Measurement of Student Adjustment and Achievement (Ann Arbor: The University of Michigan Press, 1949), pp. 74-81.

tual characteristic of the successful counselor is the ability to organize and to synthesize and to integrate data from a number of sources into a coherent meaningful pattern.

3. The Nature of the Formal Education: According to Donahue, the training requirements for the guidance worker "...are essentially the same as those for clinical psychologists."[4]

A knowledge of biological sciences sufficient to enable comprehension of biological factors in behavior may be met by courses in zoology and physiology at the undergraduate level, which is amplified by work in neurology, psychosomatic medicine and psychiatry at the graduate level. A knowledge of environmental background may be obtained through study of courses in economics, political science, anthropology, and particularly sociology at the undergraduate level. The graduate training might include specialized courses in family organization, juvenile delinquency, social disorganization, and the like. Mathematical training, particularly through advanced statistics, is necessary to permit the counselor to evaluate various measuring devices which he might be called upon to use, and to analyze data which he may gather in the course of original research.

Psychology at both the undergraduate and graduate

---

[4] Ibid., p. 75.

levels should constitute the core of the program. Psychology courses should furnish the basic concepts and data which the counselor requires. Among the most relevant courses in the undergraduate program are psychometric methods, psychology of individual differences, developmental psychology, social psychology, psychopathology, and personality theory. These provide the basis for the development of sound graduate level courses in dynamic psychology, psychosomatics, and theory of measurement.

4. The Nature of Supervised Experience: The counselor should have a period of supervised experience. Frequently an internship of one year is proposed. Actually there has been little agreement as to the length of the supervised counseling period or the nature and variety of experiences to which the apprentice counselor should be exposed.

5. Specialized Skills: Among the specialized skills which the counselor is expected to develop, the following consitute a fairly representative sample:

a. Case history preparation

b. Interview techniques

c. Analysis of personal data

d. Analysis of personnel records (e. g., attendance records, work records, prior test scores, etc.)

e. Up-to-date occupational and vocational information

f. Administration, scoring, interpretation of objective and projective psychological tests

g. Familiarization with the syndromes revealing presence of maladjustment or psychopathology

h. Ability to detect special teaching problems

i. Knowledge of therapeutic procedures and skill in counseling

j. Knowledge of where to refer special problems and the competence to do so tactfully.

The changing role of the counselor is ably summed up by Wesman in his statement:

> ...The better preparation and greater sophistication of the counselor (in the field of psychological testing) is the one sure guarantee of better tests put to wiser use. The wisdom of the counselor in knowing what to look for in a test, how to interpret the results, and how to employ tests to best advantage for the individual ...and the community at large, has increased in giant strides in the last decade or two. Comparable progress in the professional competence of counselors in the coming years can only result in test research of even greater scope, more educational value, and deeper personal and social significance than the very healthy trends already seen.[5]

Psychological Testing in Guidance and Education

What is the place of psychological testing in guidance and education today? Should it be maximized or minimized? The answers to this question vary tremendously. The question of degree of emphasis which the counselor or educator

---

[5]Alexander G. Wesman, "Guidance Testing," Occupations, 30 (1951), 14.

places upon the measured as against the non-measured aspects of the problem situation is closely related. Some counselors and educators put much more weight upon test scores than do others, i. e., they use psychological tests as the focus for counseling or educational situations, whereas others do not employ psychological tests and hold that tests have no place in counseling or school situations.

Definitely the approach to counseling exclusively through psychometrics has not been found to be desirable. It may, in fact, be undesirable, for the counselor's attention to the rationale of measurement and prediction may lead him to ignore the fact that what to him are objective data may have highly affective connotations for the counselee.

On the other hand, the approach at the other extreme also seems undesirable. To ignore completely instruments that might enhance the counselor's insights into an understanding of the client's problem, or to corroborate opinions arrived at by other means, or which might otherwise aid the counseling situation is hardly to be encouraged. Although they are in the minority, those who minimize the value of measured data feel that the influence of the non-measured variables is so great, that the data which are yielded by measurement are relatively unimportant. As exponents of this viewpoint, Rogers and his students have supported the viewpoint that psychological testing be minimized.

Darley, in reviewing the field, believes this is a healthy reaction against too great a concern with measurement alone.[6]

In considering the above problem it is found that the utilization of tests depends, to a large extent, upon how the individual counselor feels about test scores, and to what degree they have meaning to him.

In this regard it is important to state that no measuring instrument by itself ever yields a prescription. A score may be obtained, but the score does not indicate the direction which the counselee should take. Test results require interpretation. The implications of the interpretation for guidance must not be considered independent of other information concerning the counselee. The counselor must evaluate test results along with other factors. The same objective score on a particular psychological test may imply vastly different "directions" for two different people depending upon other factors.

Thus, it is important that a psychological test score should never be considered apart from the individual's background and his immediate social situation. The test score is but one of many kinds of data, and information from psychological tests is but one kind of information.

---

[6]John G. Darley and Gordon V. Anderson, "The Functions of Measurement in Counseling," ed. by E. F. Lindquist in Educational Measurement (Washington, D. C.: American Council on Education, 1951), p. 71.

They cannot be used in isolation, but must be considered in context if they are to have proper meaning.

The guidance specialist or counselor who would function effectively utilizes the results of psychological tests, objective and projective, along with his personal observations, formal interviews, case history data, objective personal data, personnel records, school grades and reports, autobiographical information, reports of parents, teachers, and friends, etc., in making his interpretation. The psychological test is not and should not be considered a substitute for the guidance-counselor; it is merely a tool which the guidance-counselor uses. The test never replaces the observer; it merely supplements him and serves as a convenient information giving and diagnostic tool.

At this time it may also be useful to review some of the major functions ascribed to tests. Psychological tests, also, frequently serve a time-economy function. A person who is disturbed may not know what his problem is; he merely knows he is disturbed or anxious without knowing why. Or an individual not infrequently rationalizes a problem or focuses attention upon some minor rather than the major problem. Psychological tests, particularly the projective tests, serve as short-cut devices. They permit the counselor to obtain information, or at least strong cues, or give him insights into the client's problems. Further, this information is obtained rather rapidly in the

course of a few hours or less, whereas the same sort of cues or insights might not otherwise be revealed in less than several weeks of interviewing. The diagnoses made in terms of psychological test results sometimes also suggest the type of counseling which might be most effective.

Often the counselor is confronted with the problem of whether or not the client should be referred for psychiatric consultation. In these cases psychological tests may provide an independent confirmation for the counselor's own predilections in the matter. Such information permits the counselor to proceed with greater assurance in regard to the question of psychiatric referral. Of course, when test results conflict with the counselor's interview-based judgments, it is necessary to investigate extensively and deeply by many alternative procedures in order to ascertain with greater certainty the level of seriousness of the difficulty.[7]

Guidance is most effective if a counseling relationship is established with the client.[8] The assumption is that, since the client wants help in working out a problem, the most effective procedure is to start working <u>with</u> him. According to this point of view, to estimate the problem and proceed to administer a battery of tests is synonymous with telling the student that the counselor will obtain the

---

[7] <u>Ibid.</u>, p. 81.

[6] Donald E. Super, "Testing and Using Test Results in Counseling," <u>Occupations</u>, 29 (1950), 95.

necessary facts and bring them before him so that a decision can be made; in this case the counselor is working on the student, treating him impersonally as a case.

The psychometric approach to counseling, therefore, tends to create a passive attitude in the counselee; in anticipating tests, he also anticipates prescriptive answers to his problems.[9] But actually tests are only an adjunct; their utility is limited. Tests cannot serve as a substitute for the client's thinking through his problem and finding answers which are meaningful and acceptable to him.[10] Nor can they serve as a substitute for a skilled counselor.

The counselor should work with the client, not work on him, i. e., there must be continuous and progressive interaction between the counselor and client in thinking through the problem and in attempting to find meaningful and acceptable answers. Tests do not automatically clarify problems or provide solutions; they merely supply some supplementary information which may be useful. The counselor who begins by administering a battery of tests may have difficulty in shifting back to the counselee's responsibility for analyzing his situation and for making decisions.[11]

However, psychological tests can function as an integral part of the counseling relationship. Tests can actually be

---

[9]Darley and Anderson, op. cit., p. 73.

[10]Super, op. cit., p. 95.

[11]Darley and Anderson, op. cit., p. 73.

woven into the interview process.[12] For example, if as a consequence of discussion it is clear that certain special data should be considered, the counselor and client together can obtain and evaluate the required data. When tests are selected and administered, because client and counselor agree on the need for certain facts, and when the client understands that the facts may be obtained by a certain kind of test, (the limits of the tests having also been discussed with the client), it is unlikely that the tests will be regarded as irrelevant, but are more likely to be appropriately evaluated and accepted.

To this end, Super has suggested that in counseling an individual for whom testing is needed, that the test should not be routinely administered. Instead, the test situation should develop from and be a part of the interview and counseling process. The counselor and client should both perceive the testing process as a part of a larger and more varied data-gathering program, i. e., but one of several means of obtaining information about the client, and which the client may want to discuss from time to time with the counselor.[13]

Kirk has pointed out that "Both test selection and test interpretation should be in relation to the emotional

---

[12]Super, op. cit., p. 95.

[13]Ibid., p. 96.

needs of the individual client."[14] Testing as part of the counseling situation should not relate to the symptoms as such, but to the underlying problems.[15]

The counselor must also beware of test-obsessed counselees. These are frequently difficult to handle. Gratifying their need for assurance, testing generally terminates their relationship with the counselor with nothing whatever having been gained. Such counselees may continue from service to service for more and more tests in order that they may be informed as to how well they did and on how able they are. Such individuals have developed attitudes of overdependency. Modification of the underlying source of difficulty is not accomplished by testing, but merely further reinforced. It has been found that by denying these test-obsessed counselees the opportunity for taking tests, that often the counselee somewhat later seeks therapy. Thus, refusing to administer tests may, in certain cases, prepare the counselee for more effective therapy.[16]

While it is desirable that the counselee have a healthy respect for psychological tests, some counselees are overly confident of the capacities of psychological tests. Therefore, in certain cases part of the counseling situation may

---

[14]Barbara A. Kirk, "Individualizing of Test Interpretation," Occupations, 30 (1952), 505.

[15]Ibid., p. 505.

[16]Ibid., p. 501.

consist in educating the counselee as to the limitations of the tests for which he shows so much reverence.

Many times clients frequently insist on scores which they cannot interpret, and it is important for the counselor to decide how much and how little information to give each counselee. In each case it is different. But practically never is a specific test score given to a client or his parents, as the layman is seldom equipped to properly interpret these scores. It is better to give a descriptive statement of test results in terms which the client can understand.

Psychological Tests in Education

School administrators have long recognized that testing is an effective way of emphasizing educational objectives. Teachers have also known that students will learn most effectively those things that are tested.

The increased use of tests has aided in clarifying and emphasizing educational objectives of both teachers and students, i. e., educational goals have become more definite and meaningful. Along this line there have been appraisals and modifications in selection of subject matter and in the organization and nature of learning experiences. Attention has been focused on achievement and educational method has become a means rather than an end.

Tests are fundamental tools in educational research.

Education has advanced as better test instruments were designed and constructed.

Also psychological tests have been increasingly used by counselors and guidance specialists in education. Achievement tests have been standardized on a nationwide basis; extensive normative data are available on them. General intelligence tests are useful in predicting academic success and in placing the mentally superior and mentally retarded. Aptitude tests have long been used in guidance programs for assessing capacity and potential in various fields. Diagnostic tests are useful for detecting and analyzing various disabilities in reading, writing, study skills, etc. Personality devices have become increasingly used in detecting potential behavior problems, as well as diagnosing factors involved in the development of such problem students.

As previously indicated in this paper, psychological tests have limitations. However, objective psychological tests have at least three general kinds of utility in the educational situation:[17]

1. Measurement Utility: They enable the counselor to assess psychological development in various dimensions. They help in identifying psychological strengths and weaknesses.

2. Diagnostic Utility: They aid the counselor in classifying and determining rather definitely the nature

---

[17]Darley and Anderson, op. cit., p. 71.

of the problem and perhaps in identifying some of the causal factors. They may provide insights for both counselor and counselee.

3. Predictive Utility: They permit the trained counselor to predict future behavior of the student.

At present, all psychological tests may be considered as measuring instruments in varying stages of development, and operating with different degrees of effectiveness. They must be looked on as tools, serving mainly to disclose clues or suggestions useful for further inquiry. They serve as means to ends, and they should never be considered as ends in themselves, at all times they must be considered in relation to structural and conceptual frameworks, taking into account the varying socio-economic status and cultural differences of the individuals or groups to whom they may be applied.

Of great importance is the fact that psychological testing has assumed an increasing role in the curricular planning of schools. A program of educational measurement definitely facilitates the selection and clarification of educational objectives. Thus, it provides a base for the identification and formulation of a comprehensive range of major objectives of a curriculum, i. e., their definition in terms of pupil needs and behavior. The use of tests in education has shifted curriculum planning from an emphasis on subject matter to a broader concept of growth and develop-

ment of individuals.

CHAPTER 13

RELATION OF PSYCHOLOGICAL TESTING TO SCHOOLS

"Schools are institutions set up by society to help the young acquire the skills, knowledges, and attitudes needed in adult living."[18] To achieve this end, guidance and testing form an integral part of the school services. Learning is the main business of the school, and its relation to mental health is of the utmost importance. Schools with adequately functioning guidance and testing services can help in the emotional strengthening of the child. However, poorly managed learning situations can adversely affect the mental health of the child. To a large extent tests, objective and projective, have proved their usefulness in supplying data essential to a well-managed learning situation.

Comparison of Objective and Projective Tests

Earlier chapters have discussed objective and projective testing in terms of the description and application of specific tests. At this time it may be advisable, for purposes of clarification in relation to educational objectives,

---

[18] Fritz Redl and William Wattenburg, Mental Hygiene in Teaching (New York: Harcourt, Brace and Company, 1951), p. 187.

to review some of the general features of objective and projective tests through a comparative contrast of various aspects. These are:[19]

1. Administration of the Tests: Little variability is permitted in the giving of directions for objective tests, they, in general, being more formalized and structured. Projective tests are relatively unstructured and to a great extent the directions for administration are less formalized, and a larger degree of permissiveness for variation is allowed. In projective testing there may be a considerable modification of directions depending upon the age level, educational background and experience of the individual. Thus, the projective technique possesses greater flexibility; the objective technique, greater objectivity.

2. Stimuli Employed: Stimuli of objective tests are specific and carefully structured, generally in terms of meticulously stated questions. Stimuli of projective tests are generally amorphous, vague and indefinite (as in the form of ink blots or relatively nebulous pictures).

3. Gradation of Responses: In objective tests the response possibilities are limited by the rigid construction of the test, e. g., "yes-no" or multiple answer alternatives. Variability is a function of the possible alterna-

---

[19]Sheldon J. Lachman, The Psychological Nature of Personality and Appraisal Techniques in Personality Evaluation (Detroit, Michigan: Glengary Press, 1950), pp. 17-19.

tives and number of items. In projective tests the possibilities are practically unlimited and depend largely on the subject's ability, ingenuity and desire. Thus, projective techniques permit much wider variety in answers, as the subject is relatively free in regard to response responsibilities.

4. Recording of Responses: In objective tests the responses are generally recorded by the subjects. In projective tests, responses are generally recorded by the examiner. (This will not hold completely true in those projective techniques such as figure drawing, finger-painting, etc., where the test is the subject's recorded product.)

5. Psychological Processes Involved in Response: The responses for objective tests are, to a large degree, dependent upon simple recognition or recall. On projective tests, responses are dependent, to a greater extent, upon the creative imagination, or some kind of ideational synthesis.

6. Scoring of the Test: For the majority of objective tests, scoring is impersonal, precise, and relatively mechanical. Also, it may often be quickly accomplished as usually only a single score, or small number of scores are involved, and tabulations are generally simple. Scoring of projective tests is usually more difficult, as the criteria are less definite and often grade into each other.

Consequently in projective testing there is a greater susceptibility to subjectivity, bias, and impressionistic judgment of the scorer. Generally several subscores are obtained; various ratios, combinations and proportions having to be considered.

7. Standardization, Reliability, Validity: Objective tests are generally standardized, i. e., normative data regarding scores for various population samples are generally provided. Also, results of reliability and validity investigations are generally available. In contrast, few projective tests have been even partially standardized. This may be partially due to the function of the nature of the test itself, and the fact that, in the majority of instances, completely adequate techniques for obtaining indices of validity and reliability do not as yet exist.

8. Range of Applicability: Objective tests, to a large extent, contain items which are linguistic in nature, and these items often have highly specific connotations, and therefore may be highly restricted as effective stimuli, i. e., they may be restricted to a certain cultural group; or they may be limited, depending upon the structure of the items, to a particular sex, age level, or people with a certain amount of education. Projective techniques are not so dependent upon verbal or linguistic ability; since they are relatively unstructured, they may in many instances be utilized in several cultures and in a wide range of age

and educational levels.

9. Theory or Rationale of Results Derived: Objective tests purport to derive static indices of development or achievement. Projective tests, theoretically, yield a more generalized portrayal of the total personality and the nature of its organization; supposedly, projective techniques provide information concerning dynamics and organization.

10. Qualifications of Examiner: For the administration and interpretation of any type of psychological test, it is believed that a thorough foundation in psychology, with emphasis on test theory and construction, is necessary. With as little as two years work in psychology, including special training in theory and construction of psychological tests, it is possible for an individual to achieve a high degree of proficiency in the administration, scoring, and interpretation of a large number and variety of objective tests. However, in addition to the above, projective testing calls for a greater knowledge of personality dynamics, as well as considerable practical experience, preferably in a clinical setup. Also, in projective testing, there is a greater degree of interpersonal relations between subject and examiner, which may be of considerable importance in influencing the test results. Thus, since the scoring and interpretation are so dependent upon the examiner's skill and evaluation, the personal and professional qualities of the examiner must be carefully considered.

There has been an increasing use of projective techniques in recent years, and this approach to measurement appears to have great value for many educational situations. Projective techniques of appraisal and objective techniques of appraisal do not form a dichotomy.[20] Rather, there is a continuum from the tests which call for highly specific information to the projective approaches which use almost completely unstructured material. In between the two extremes will fall most of our measuring instruments. Thus, to derive the utmost benefit from tests, the skill of the statistician and the clinician must be blended in an adequate and competent professional counselor.

Current Trends in Guidance and Testing

In the early days of standard tests, it was not unusual to think of guidance as synonymous with testing. It must, however, be recognized that guidance is more than giving tests, no matter how extensively or carefully done.[21] Tests actually may or may not serve any guidance function. In general, they are a potent part of the counselor's armentarium. But their role as tools, as means to ends, not ends in themselves, must be continually recognized. There is no doubt that measurement techniques have proved useful. Thus, the successful counselor should be skilled

---

[20]Wrenn, op. cit., p. 9.

[21]C. C. Ross, Measurement in Today's Schools (New York: Prentice-Hall, Inc., 1947), p. 450.

in using psychological tests along with other appraisal instruments as adjuncts in evaluating and diagnosing.

Evaluation in some form is implicit in the guidance function.[22] The counselor skilled in psychological testing has a technique which can provide him with objective data valuable to the counseling situation. He must be able to assess accurately individual competences and limitations and to match these with educational and vocational opportunities and goals.

Therefore, it can be stated that psychological tests contribute to that aspect of guidance concerned with developing a balance sheet for each individual upon which can be revealed in objective terms psychological strengths and weaknesses.

Likewise, the progress of science and inventive contributions have vastly complicated and are continuously altering the social and economic world for the student. The curricula of the secondary school and college have likewise become more complicated. The number of subjects offered in American high schools increased from nine in 1890 to more than 250 in 1942.[23]

Such complications have tremendously increased the need for guidance and testing services, and for highly

---

[22] Ibid., p. 451.

[23] Charles H. Judd, "General Education and the Baccalaureate Degree," School and Society, 35 (1942), 56.

specialized skills in the guidance counselor. Guidance and testing today are inescapable aspects of the educational process, and mental hygiene must form the framework from which they function. Therefore, these fields of study must be thoroughly understood by all people who are responsible for guiding the growth of children.

Implications for the Future

To what extent are psychological tests being employed in guidance and schools today? One fairly recent study, based on 111 public schools in a nation-wide survey, indicated that the per cent of schools utilizing tests in the "guidance and counseling services provided for adults" was as follows:[24] Achievement Tests, 62 per cent; Aptitude Tests, 53 per cent; Interest Inventories, 51 per cent; Intelligence Tests, 48 per cent; and other tests 6 per cent. This 6 per cent includes all personality tests, projective and objective. This study, if it can be considered representative of the use of tests in guidance in schools, indicates that tests, and especially projective techniques, are not yet being utilized to their fullest potential in guidance situations.

An interesting aspect of this study was the fact that many of the smaller school districts reported having little or no guidance program or testing service. The cause for

---

[24]Homer Kempfer and Sophie V. Cheskie, "Adult Guidance Services in Public Schools," Occupations, 29 (1951), 324-27.

this is quite apparent; lack of money and trained personnel, the constant plague of school systems everywhere.

The question at present is how to meet this problem. Some financial help for these types of services is being supplied by Federal and State governments, and it is hoped that the future will bring increasing awareness of the value of these services along with increased financial aid.

However, financial aid alone is not the complete answer. Time and facilities are required to train competent personnel, and the number of such trained people, in relation to the need, is extremely small. What then is the answer?

Looking back, the history of education reveals constant changing in educational techniques and practices. Most of the changes recorded have stemmed from the persistent efforts of educators to achieve more effectively the fundamental purposes of the educational process. Our constantly changing social and economic order regularly requires that new techniques and practices be determined to serve the needs of individuals and society.

In the fields of guidance and testing, the new development which has arisen to meet the need is the concept of the teacher-counselor. The history of the development of most professions reveals that after a certain growth they tend to envelop themselves with rigid restrictions, jealously guarding any encroachment on their type of service from the non-initiated.

There is no argument with the fact that, all things being equal, the greater the training of an individual, the more things he can do effectively. However, there are many testing and guidance services which can be performed by the intelligent and understanding teacher, with a minimum of training; especially if competent supervision is available. That this is being increasingly recognized by teacher training institutions is seen in their introduction of, and stress on, courses in mental hygiene and testing to provide a background for this work. Also, the teacher has an important group function and the counselor's role should be that of consultant and coordinator.

In line with this thought, it is also possible, if administrators so desire, to conduct in-service training programs utilizing competent personnel to function in a training and consultant capacity. Thus, it is my feeling that a possible answer to providing guidance and testing services to schools which at present are unable to afford them is to utilize the services of a professional counselor as a consultant to several schools. This worker could organize and supervise testing and guidance programs, assisted by the teacher to the fullest extent. In this manner by operating such a service for several schools, the problems of finance and trained personnel would be minimized for the schools; each would receive a better program of services in this collective arrangement than they could provide for

themselves individually.

It is conceivable that this service could be set up on some kind of a cooperative "cost plus" basis in which schools indicated the kinds and amounts of testing and other services which they desired. If the volume was sufficient, these services could be provided by a specialist in this field at a very low cost to schools. While, in theory, schools would work toward their own unique programs, the services suggested would be better than no services at all until schools were able to organize and finance individual programs.

Summation

In summary, much has happened in the last four decades in the field of psychological testing. From the relatively simple beginning made by Binet many ramifications have grown. From an instrument designed chiefly for the purpose of identifying the mentally backward there has developed a series of methods and devices for measuring with greater or less accuracy almost every type of mental process and overt form of human activity that is known to science. Measuring instruments of sufficient precision to warrant their use in many types of scientific investigation have been developed and their value for such purposes have become well established. Also, there has been a corresponding growth in the technical understanding of methods of test construction.

Psychological tests have become firmly established and integrated in the fields of guidance and education. Tests of general intelligence have proved their worth and have been widely adopted. Also, tests of achievement, aptitude and personality have been increasingly utilized by more and more schools. Finally, the most recent development in the field of psychological testing, the projective techniques, have opened up a complete new vista of possibilities, and promise to be increasingly valuable in guidance and education.

The future looks bright, but a note of caution is in order. There is no doubt that psychological testing has improved since its early days; however, that infinitely more remains to be accomplished is also beyond question. The best of our present day tests involves a considerable possibility of error, and even the simplest test is by no means foolproof. Every psychological test has its own set of implicit assumptions, its own limits of applicability and its own hazards of interpretation. Neglect of these factors by those responsible for the guidance and testing may have very serious and disastrous consequences.

Tests are only tools, much of their value depending upon the skill, training, and insight of the interpreter. The increased emphasis upon providing better facilities and more adequate training for teachers and guidance workers in psychological testing and interpretation is

a good sign and is certainly a step in the right direction.

BIBLIOGRAPHY

Books

Abt, L. E. and Bellak, L. Projective Psychology. New York: Alfred A. Knopf, 1950.

Allport, Gordon W. Personality: A Psychological Interpretation. New York: Henry Holt, 1937.

Alschuler, R. H. and Hattwick, L. B. W. Painting and Personality. Chicago: University of Chicago Press, 1947.

Anderson, H. H. and Anderson, G. L. An Introduction to Projective Techniques. New York: Prentice-Hall, Inc., 1951.

Axline, V. M. Play Therapy: The Inner Dynamics of Childhood. Boston: Houghton Mifflin Company, 1947.

Bell, H. M. The Theory and Practice of Student Counseling, with Special Reference to the Adjustment Inventory. Stanford University, California: Stanford University Press, 1935.

Bender, Lauretta. "A Visual-Motor Gestalt Test and Its Clinical Use. Research Monograph No. 3. New York: American Orthopsychiatric Association, 1938.

Boring, Edwin G. A History of Experimental Psychology. New York: D. Appleton-Century Company, 1929.

Brewer, John M. History of Vocational Guidance. New York: Harper and Brothers, 1942.

Chisholm, Leslie L. Guiding Youth in the Secondary School. New York: American Book Company, 1945.

Deri, S., Dinnerstein, D., Harding, J., and Pepitone, D. Introduction to the Szondi Test. New York: Grune and Stratton, 1949.

Erickson, C. E. Practical Handbook for School Counselor. New York: Ronald Press Company, 1949.

Garrett, Henry E. and Schneck, H. H. Psychological Tests, Methods, and Results. New York: Harper and Brothers, 1933.

Goodenough, F. L. Measurement of Intelligence By Drawings. Yonkers, N. Y.: World Book Company, 1926.

Hathaway, Starke R. and McKinley, J. Charnley. The Minnesota Multiphasic Personality Inventory. Revised edition. Minneapolis: University of Minnesota Press, 1943.

Healy, W., Bronner, A., and Bowers, A. M. The Structure and Meaning of Psychoanalysis. New York: Alfred A. Knopf, 1930.

Hollingsworth, Leta. Children Above 180 I. Q. New York: World Book Company, 1942.

Hoppock, Robert. Group Guidance Principles, Techniques, and Evaluation. New York: McGraw Hill Book Company, Inc., 1949.

Jennings, H. H. Leadership and Isolation. New York: Longmans, Green, and Company, Inc., 1943.

Kent, Grace H. Mental Tests in Clinics for Children. New York: D. Van Nostrand, 1950.

Lachman, Sheldon J. The Psychological Nature of Personality and Appraisal Techniques in Personality Evaluation. Detroit, Michigan: Glengary Press, 1950.

Machover, Karen. Personality Projection in the Drawing of the Human Figure. Springfield: Charles C. Thomas, 1948.

Moreno, J. L. Psychodrama. Vol. 1. New York: Beacon House, 1946.

Moreno, F. B. A Sociometric Work Guide for Teachers. Washington, D. C.: American Council on Education, 1947.

Moreno, F. B. The Theatre of Spontaneity: An Introduction to Psychodrama. New York: Beacon House, 1947.

Moreno, F. B. Who Shall Survive? New York: Beacon House, 1934.

Munn, Norman L. Psychology. New York: Houghton Mifflin Company, 1946.

Murray, Henry A. Thematic Apperception Test. Cambridge, Mass.: Harvard University Press, 1943 (set of thirty cards and manual).

Murray, Henry A., et. al. Explorations in Personality. New York: Oxford University Press, 1938.

Nelson, Lester W. Use of Tests in School Administration. Washington, D. C.: American Council on Education, 1951.

Payne, A. F. Sentence Completions. New York: New York Guidance Clinic, 1928.

Percy, Mildred S. Use of Tests in the Guidance Program of Public Schools. Washington, D. C.: American Council on Education, 1951.

Peterson, Joseph. Early Conceptions and Tests of Intelligence. New York: World Book Company, 1925.

Rappaport, David, Gill, Merton, and Schafer, Roy. Diagnostic Psychological Testing. Chicago: The Yearbook Publishers, 1946.

Redl, Fritz and Wattenburg, William. Mental Hygiene in Teaching. New York: Harcourt, Brace and Company, 1951.

Reed, Anna Y. Guidance and Personnel Services in Education. Ithaca, N. Y.: Cornell University Press, 1944.

Richards, T. W. Modern Clinical Psychology. New York: McGraw Hill Book Company, 1946.

Rogers, Carl R. Counseling and Psychotherapy. Boston: Houghton Mifflin Company, 1942.

Rogers, Carl R. Measuring Personality Adjustment in Children 9 to 13 Years of Age. New York: Bureau of Publications, Teachers College, Columbia University, 1931.

Ross, C. C. Measurement in Today's Schools. New York: Prentice-Hall, Inc., 1947.

Rothney, John W. M. and Roens, Bert A. Counseling the Individual Student. New York: William Sloane Associates, Inc., 1949.

Shaw, Ruth F. Finger Painting. Boston: Little, Brown and Company, 1934.

Smith, Glenn E. Principles and Practices of the Guidance Program. New York: Macmillan Company, 1951.

Terman, L. M. and Merrill, M. A. Measuring Intelligence. New York: Houghton Mifflin Company, 1937.

Tiegs, Ernest W. Educational Diagnosis. Los Angeles: California Test Bureau, 1948.

Tiegs, Ernest W. Tests and Measurements in the Improvement of Learning. New York: Houghton Mifflin Company, 1939.

Tomkins, Silvan S. The Thematic Apperception Test. New York: Grune and Stratton, 1947.

Traxler, A. E. Techniques of Guidance. New York: Harper and Brothers, 1945.

Warthers, Jane. High School Personnel Work Today. New York: McGraw-Hill Book Company, Inc., 1946.

Willey, Roy Deverl. Guidance in Elementary Education. New York: Harper and Brothers, 1952.

Williamson, E. G. How to Counsel Students. New York: McGraw-Hill Book Company, 1939.

Wolff, W. The Personality of the Pre-School Child: the Child's Search for His Self. New York: Grune and Stratton, 1946.

Periodicals

Ainsworth, Mary D. "Some Problems of Validation of Projective Techniques." British Journal of Medical Psychology, 24 (1951), 151-61.

Allport, Gordon W. "A Test of Ascendance-Submission." Journal of Abnormal and Social Psychology, 26 (1931), 231-48.

Ammons, Robert B. "Reactions in a Projective Doll-Play Interview of White Males Two to Six Years of Age to Differences in Skin and Color and Racial Features." Pedagogical Seminary, LXXVI (1950), 232-41.

Amster, F. "Collective Psychotherapy of Mothers of Emotionally Disturbed Children." American Journal of Orthopsychiatry, 14 (1944), 44-52.

Appel, K. E. "Drawings by Children As Aids to Personality Studies." American Journal of Orthopsychiatry, 1 (1931), 129-44.

Arlow, J. A. and Kadis, A. "Finger-Painting in the Psycotherapy of Children." American Journal of Orthopsychiatry, 16 (1946), 134-46.

Baldwin, Marcella. "A Note Regarding the Suggested Use of the Bender Visual Motor Gestalt Test As a Measure of School Readiness." Journal of Clinical Psychology, 6 (1950), 412-15.

Bellak, L. "The Concept of Projection." Psychiatry, 7 (1944), 353-70.

Benjamin, J. D. and Ebaugh, F. G. "The Diagnostic Validity of the Rorschach Test." American Journal of Psychiatry, 94 (1938), 1163-78.

Bernreuter, Robert G. "The Theory and Construction of the Personality Inventory." Journal of Social Psychology, IV (1933), 387-405.

Brown, Fred. "A Psychoneurotic Inventory for Children Between Nine and Fourteen Years of Age." Journal of Applied Psychology, XVIII (1934), 566-77.

Brown, J. F. "A Modification of the Rosenzweig Picture-Frustration Test to Study Hostile Interracial Attitudes." Journal of Psychology, 24 (1947), 247-72.

Brunelle, Peggy. "Action Projects from Children's Literature: An Indirect Approach to Intercultural Relations in the Elementary School." Sociatry, 2 (1948), 235-42.

Cattell, R. B. "Projection and the Design of Projective Tests of Personality." Character and Personality, 12 (1944), 177-94.

Coleman, William. "The Thematic Apperception Test: I Effects of Recent Experience: II Some Quantitative Observations." Journal of Clinical Psychology, 3 (1947), 357-64.

Colm, Hanna. "The Value of Projective Methods in the Psychological Examination of Children: The Mosaic Test in Conjunction with the Rorschach and Binet Tests." Rorschach Research Exchange, 12 (1948), 216-37.

Combs, Arthur W. "The Use of Personal Experience in Thematic Apperception Test Story Plots." Journal of Clinical Psychology, 2 (1946), 357-63.

Conn, J. E. "Play Interview As an Investigative and Therapeutic Procedure." Nervous Child, 7 (1948), 257-86.

Cox, Beverly and Sargent, Helen. "T. A. T. Responses of Emotionally Disturbed and Emotionally Stable Children: Clinical Judgement Versus Normative Data." Journal of Projective Techniques, 14 (1950), 60-74.

DelTorto, S. and Cornsetz, P. "Psychodrama Expressive and Projective Technique." Sociometry, 7 (1948), 356-75.

Deri, S., Dinnerstein, D., Harding, J., and Pepitone, D. "Techniques for the Diagnosis and Measurement of Intergroup Attitudes and Behavior." Psychological Bulletin, XLV (1948), 248-99.

Deri, S., Dinnerstein, D., Harding, J., and Pepitone, D. "Descriptions of the Szondi Test: A Projective Technique for Psychological Diagnosis." American Psychologist, 1 (1946), 286.

Despert, J. L. "Technical Approaches Used in the Study and Treatment of Emotional Problems in Children. Part I. The Story: A Form of Directed Phantasy." Psychiatric Quarterly, 10 (1936), 619-38.

Diamond, B. L. and Schmale, H. T. "The Mosaic Test: I An Evaluation of Its Clinical Application." American Journal of Orthopsychiatry, 14 (1944), 240-41.

Elkisch, Paula. "Children's Drawings in a Project-Technique." Psychological Monographs, 58 (1945), 1-31.

Ellis, Albert. "The Validity of Personality Questionnaires." Psychological Bulletin, 43 (1946), 385-440.

England, Arthur O. "A Psychological Study of Children's Drawings: Comparison of Public School, Retarded, Institutionalized and Delinquent Children's Drawings." American Journal of Orthopsychiatry, 13 (1943), 525-30.

Failor, Clarence F. and Mahler, Clarence A. "Examining Counselors' Selection of Tests." Occupations, 28 (1949), 164-69.

Failor, Clarence W. "Distinguishing Marks of Counseling." Occupations, 30 (1952), 260-63.

Frank, L. K. "Projective Methods for the Study of Personality." Journal of Psychology, 8 (1939), 389-413.

Gillies, Emily P. "Therapy Dramatics for the Public Schoolroom." Nervous Child, 7 (1948), 328-36.

Goodenough, F. L. "Studies in the Psychology of Children's Drawings." Psychological Bulletin, 25 (1928), 272-83.

Goodenough, Florence L. and Harris, Dale B. "Studies in the Psychology of Children's Drawings: II 1928-1949." Psychological Bulletin, 47 (1950), 369-433.

Guetin, Wilson H. and McMahan, Herbert G. "A Survey of Szondi Research." American Journal of Psychiatry, 108 (1952), 180-84.

Haas, Robert B. "Sociodrama in Education." Sociatry, 2 (1948), 420-29.

Haas, Robert B. "Action Counseling and Process Analysis, A Psychodramatic Approach." Sociatry, 1 (1947), 256-85.

Haas, Robert B. "Leaves from an Educator's Notebook Illustrating Action Applications in Several Forms of Production." Sociatry, 2 (1948), 283-321.

Haggard, E. A. "A Projective Technique Using Comic Strip Characters." Character and Personality, 10 (1942), 289-95.

Halpern, Florence. "Projective Tests in the Personality Investigation of Children." Journal of Pediatrics, 36 (1951), 770-75.

Harriman, Mildred and Harriman, Philip L. "The Bender Visual Motor Gestalt Test As a Measure of School Readiness." Journal of Clinical Psychology, 6 (1950), 175-77.

Harms, R. "Play Diagnosis: Preliminary Considerations for a Sound Approach." Nervous Child, 7 (1948), 233-46.

Henry, W. E. "The Thematic Apperception Technique in the Study of Culture-Personality Relations." Genetic Psychology Monographs, 35 (1947), 3-315.

Henry, W. E. and Guetzkow, H. "Group Projection Sketches for the Study of Small Groups." Publication No. 4 of the Conference Research Project at the University of Michigan. Journal of Social Psychology 35 (1951), 77-102.

Holt, Robert R. and Thompson, Charles E. "Bibliography for the Thematic Apperception Test." Journal of Projective Techniques, 14 (1950).

Horowitz, N. and Cartwright, O. "A Projective Method for the Diagnosis of Groups." Human Relations, (1951).

Judd, Charles H. "General Education and the Baccalaureate Degree." School and Society, 36 (1942), 35-36.

Kempfer, Homer and Cheskie, Sophie V. "Adult Guidance Services in Public Schools." Occupations, 29 (1951), 324-27.

Kirk, Barbara A. "Individualizing of Test Interpretation." Occupations, 30 (1952), 300-05.

Kornhauser, Arthur. "Replies of Psychologists to a Short Questionnaire on Mental Test Developments, Personality Inventories, and the Rorschach Test." Educational and Psychological Measurement, (1945).

Krim, Murray. "Diagnostic Personality Testing with Figure Drawings." Unpublished Thesis, New York University, 1947.

Krugman, M. "The Rorschach in Child Guidance." Journal of Consulting Psychology, 7 (1943), 80-88.

Laird, D. A. "Detecting Abnormal Behavior." Journal of Abnormal and Social Psychology, 20 (1925), 128-34.

Levy, D. W. "Trends in Therapy: III Release Therapy." American Journal of Orthopsychiatry, 9 (1939), 713-36.

Levy, Ronald B. "Psychodrama and the Philosophy of Cultural Education." Sociatry, 2 (1948), 225-34.

Levy, Sidney. Drawing Analysis Record Form. Copyright, 1948.

Lippett, R. "The Psychodrama in Leadership Training." Sociometry, 6 (1943), 286-92.

Lorge, I. and Thorndike, E. L. "The Value of Responses in a Completion Test As Indications of Personality Traits." Journal of Applied Psychology, 25 (1941), 191-99.

Lowenfeld, Margaret. "A New Approach to the Problem of Psychoneurosis in Childhood." British Journal of Medical Psychology, 11 (1931), 194.

Lubin, A. and Malloy, M. "An Empirical Test of Some Assumptions Underlying the Szondi Test." Journal of Abnormal and Social Psychology, 46 (1952), 480-84.

McCandless, B. R. "The Rorschach As a Predictor of Academic Success." Journal of Applied Psychology, 33 (1949), 43-50.

McClure, A. G. "Reaction Types in Maladjusted Children: Some Clinical Observations with Reference to Play Therapy." British Journal of Medical Psychology, 20 (1945-1946), 389.

Monroe, Ruth L. "Diagnosis of Learning Disabilities Through a Projective Technique." Journal of Consulting Psychology, 13 (1949), 390-95.

Moreno, F. B. "Situation Test." Sociometry, XX (1946), 2-3.

Morgan, C. D. and Murray, H. A. "A Method for Investigating Fantasies: The Thematic Apperception Test." Archives of Neurology and Psychiatry, 34 (1935), 389-406.

Mosse, E. "Painting Analyses in the Treatment of Neurosis." Psychoanalytic Review, 27 (1947), 65-81.

Munroe, R. "Use of Rorschach in College Counseling." Journal of Consulting Psychology, 7 (1943), 89-97.

Murray, Henry A. "Techniques for the Systematic Investigation of Fantasy." Journal of Psychology, 3 (1937), 115-43.

Murray, Henry A. and Stein, Morris I. "Note on the Selection of Combat Officers." Psychosomatic Medicine, 5 (1943), 386-91.

Napoli, P. J. "Finger-Painting and Personality Diagnosis." Genetic Psychology Monographs, 34 (1946), 192-230.

Napoli, P. J. "The Interpretative Aspects of Finger Painting." Journal of Psychology, 23 (1947), 93-132.

Occupational Information and Guidance. U. S. Office of Education, Vocational Division, Bulletin 204. Washington, D. C.: Government Printing Office, 1939. 29-30.

Prelinger, Ernst. "On the Reliability of Szondi Test." Psychological Service Center Journal, 3 (1950), 227-30.

Reynolds, R. T. "Racial Attitudes Revealed by a Projective Technique," Journal of Consulting Psychology, 13 (1949), 386-99.

Rhode, A. "Explorations in Personality by the Sentence Completion Method." Journal of Applied Psychology, 30 (1946), 169-81.

Richmond, Winifred. "Sociometric Tests in a Training School for Nurses." Sociometry, 13 (1950), 29-38.

Rosenzweig, Saul. "A Method of Validation by Successive Clinical Predictions." Journal of Abnormal and Social Psychology, 45 (1950), 507-09.

Rotter, J. B. and Willerman, B. "The Incomplete Sentence Test As a Method of Studying Personality." Journal of Consulting Psychology, 11 (1947), 43-48.

Rotter, J. B., Rafferty, J. E., and Schachtitz, E. "Validation of the Rotter Incomplete Sentences Blank for College Screening." Journal of Consulting Psychology, 13 (1949), 348-56.

Sacks, Joseph M. "Effect Upon Projective Responses of Stimuli Referring to the Subject and to Others." Journal of Consulting Psychology, 13 (1949), 12-21.

Schafer, Sarah and Leitch, Mary. "An Exploratory Study of the Usefulness of a Battery of Psychological Tests with Nursery School Children." American Journal of Psychiatry, 104 (1948), 647-52.

Schmidt, F. "The Rorschach Method in Social Work Treatment of Adults." Family, 24 (1943), 83-90.

Sears, R. H. "Experimental Studies of Projection: I Attribution of Traits." Journal of Social Psychology, 7 (1938), 389-98.

Seeman, E. "Development of Pictorial Aptitude in Children." Character and Personality, 2 (1934), 209-21.

Selover, Margaret, Townsend, Agatha, Jacobs, Hebert, and Traxler, Arthur E. Introduction to Testing and the Use of Test Results. Educational Records Bulletin, 1950.

Sher, J. "Report on a Verbal Projective Technique." Journal of Clinical Psychology, 2 (1946), 279-82.

Studebaker, J. W. "The Occupational, Informational and Guidance Service: A Report of Progress." Occupations, XVII, 7 (1939), 587.

Super, Donald E. "Testing and Using Test Results in Counseling." Occupations, 28 (1950), 95-97.

Symonds, P. M. "New Directions for Projective Techniques." Journal of Consulting Psychology, 13 (1949), 387-89.

Symonds, P. M. "The Sentence Completion Test As a Projective Technique." Journal of Abnormal and Social Psychology, 42 (1947), 320-29.

Taylor, Joseph L. "Application of the Rorschach in a Jewish Vocational Agency." Jewish Social Services Quarterly, 25 (1949), 349-56.

Temple, R. and Amen, E. W. "A Study of Anxiety Reactions in Young Children by Means of a Projective Technique." Genetic Psychology Monographs, 30 (1944), 61-113.

Tendler, A. D. "A Preliminary Report on a Test for Emotional Insight." Journal of Applied Psychology, 14 (1930).

Thurstone, L. L. "Primary Mental Abilities." Science, 108 (1948), 585.

Tiegs, Ernest W., Clark, Willis W., and Thorpe, Louis P. "The California Test of Personality." Journal of Educational Research, XXXV (1941), 102-08.

Wertham, Fredric and Golden, Lili. "A Differential Diagnostic Method of Interpreting Mosaics and Colored Block Designs." American Journal of Psychiatry, 98 (1941), 124.

Wertheimer, Max. "Studies in the Theory of Gestalt Psychology." Psychologische Forschung, 4 (1923).

Wesman, Alexander G. "Guidance Testing." Occupations, 30 (1951), 10-14.

Wilson, I. "The Use of a Sentence Completion Test in Differentiating between Well-Adjusted and Maladjusted Secondary School Pupils." Journal of Consulting Psychology, 13 (1949), 400-02.

Wittenbron, J. R. "Some Thematic Apperception Test Norms and a Note on the Use of the Test Cards in the Guidance of College Students." Journal of Clinical Psychology, 2 (1946), 157-61.

Wright, B. A. "An Experimentally Created Conflict Expressed by Means of a Projective Technique." Journal of Social Psychology, 21 (1945), 229-45.

Wyatt, F. "The Interpretation of the T. A. T." Rorschach Research Exchange and Journal of Projective Techniques, II (1947), 21-26.

AUTOBIOGRAPHICAL STATEMENT

Name: R. Edward Berman

Birth: April 14, 1918; Detroit, Wayne County, Michigan, U. S. A.

Education: Elem. and H. S., Detroit; Colleges: Wayne University, B. S., 1939, M. A., 1941.

Positions: Teacher: Detroit Schools, 1939-40; Vocational Advisor, M. S. Employment Service, Detroit, 1940-41; Personnel Consultant and Clinical Psychologist, Army of the United States, 1942-46; Clinical Psychologist, Veterans Administration Mental Hygiene Clinic, Detroit, 1947-48; Consulting Psychologist, Psychological Consultation Service, Detroit, 1949-52.

Memberships: National Vocational Guidance Association, American Psychological Association, Michigan Psychological Association.

Publications: Article in Journal of War Medicine.