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CHAPTER I

INTRODUCTION

The history of projective techniques over the past forty-odd years in the United States has been one founded in controversy and conflict, a dispute which has continued into the present. Because of their dissatisfaction with the increasing quantification of psychological assessment, a group of psychologists in the 1930's welcomed the projective techniques as procedures which could be used to understand the "whole individual" rather than reducing all his uniqueness to a single score within a statistical distribution.

L. K. Frank (1939) in his classic article on projective techniques, succinctly stated the case for personality study through projective procedures:

> If we will face the problem of personality, in its full complexity, as an active dynamic process to be studied as a process rather than as an entity or aggregate of traits or factors or as a static organization, then these projective methods offer many advantages for obtaining data on the process of organizing experience that is peculiar to each personality and is useful in understanding him throughout his life. Moreover, the projective methods offer possibilities for utilizing the available insights into personality which the prevailing quantitative procedures seem deliberately to reject (p. 405).

Since the Szondi test is considered by its practitioners

to be a projective technique and since it has generally been accepted as such (Shneidman, 1965, p. 513), it seems appropriate to discuss and clarify the concept of "projection" as used in relation to projective tests. The discussion will involve the general rationale underlying the use of such tests and relate some of the difficulties associated with their validation.

Projection, Projective Techniques and Validity

The Projective Hypothesis. Projective methods have been in use since publication of Kleksographien in 1857 by Kerner, who is also given credit for the earliest recorded use of ink-blots as psychological material. However, projective methods were not specifically designated as such until the introduction of the term in 1939 by L. K. Frank. Frank presented the social-psychological meaning of projective methods:

> ...We may approach the personality and induce the individual to reveal his way of organizing experience by giving him a field (objects, materials, experiences) with relatively little structure and cultural patterning so that the personality can project upon that plastic field his way of seeing life, his meanings, significances, patterns, and especially, his feelings. Thus we elicit a projection of the individual personality's private world because he has to organize the field, interpret the material and react affectively to it (p. 402).

Since Frank's exposition of the "projective hypothesis," there has been considerable confusion regarding the term "projection" as used within a psychoanalytic context and "projective" as utilized in "projective methods." It seems necessary to differentiate these terms before continuing the discussion of projective

techniques in general.

Definitions of "Projection" and "Projective Techniques." The term "projection" as first used by Freud (1938) had a specific psychological definition which has altered very little over the years. In his words:

> The projection of inner perceptions to the outside is a primitive mechanism which, for instance, also influences our sense perceptions, so that it normally has the greatest share in shaping our outer world. Under conditions that have not yet been sufficiently determined even inner perceptions of the ideational and emotional processes are projected outwardly, like sense perceptions, and are used to shape the outer world, whereas they ought to remain in the inner world (p. 857).

Projection, in the psychoanalytic usage is primarily a "pathological" mechanism, one of the primary defense mechanisms of the ego utilized especially by "paranoid" individuals. The term "projective," however, is usually assigned a much more general definition, essentially denoting the individual's expression of his personality in his behavior. For example, in his textbook, Personality (1947), Murphy discussed projective methods as follows:

> The term projective methods has come into general use in recent years to denote the devices that enable the subject to project himself into a planned situation. . . .All psychological methods involve some projection in the sense that a person reveals himself in whatever he does. . . .There is a continuum of self-expression or self-projection, from the slight reflection of individuality in rapid-fire mechanical utterance of the "opposites" to words like black or heavy, up to the identification of one's self with a character in a stage production. Since there is a continuum, the definition is for convenience only (p. 669).

Murphy's definition involves two important aspects of projective techniques; the idiosyncratic and revelatory attributes in particular, but also the concepts of empathy in terms of identification and a continuum of self-expression or "self-projection."

Rapaport (1950) also commented that the term "projection" could have two seemingly widely separated, but actually related meanings. First, with Freud, the term could mean a way of thinking in which an individual imputes his thoughts and feelings to another while perceiving them as being external reality or, second, as simply the expression of one's personality in everyday behavior. The latter meaning, Rapaport felt, is particularly relevant whenever an individual is confronted with an ambiguous or novel situation.

To summarize, the cited definitions of the term "projection" have distinguished between two connotations; the more strictly psychoanalytic one in which the term is defined as being a defensive mechanism whereby the ego projects unconscious wishes and ideas on the external world and, a more general meaning as a reflection of inner personality structures and dynamics. Such reflection is usually from behavior in life situations, but more specifically from projective test behavior. The two definitions might be further clarified by viewing, with MacCorquodale and Meehl (1948), the psychoanalytic meaning as a hypothetical construct and the more general one as an intervening variable.

Projective and non-projective tests have been differentiated in that projective tests are characterized by (1) ambiguous stimulus

materials, as opposed to discrete, unambiguous ones, (2) allowing for a multiplicity of subject responses in a relatively open situation, rather than requiring the test responses to be chosen from a pre-selected array and (3) viewing the goal of the test interpreter to be the inference of the unconscious aspects of the subject's personality and the meaningful verbal communication of his interpretations.

Guilford (1959) has emphasized the unstructured aspect of projective materials. He distinguishes them from other kinds of methods primarily in terms of this differentiation and the freedom of the examinee to respond in his own unique way.

Lazarus (1961) also defined projective techniques partially in terms of their differences from psychometric or "objective" tests. He noted the difficulty in determining the reliability of projective tests due to the large part played by the individual interpreter's ability:

> They attempt to obtain more information about the person's unique way of looking at the world, and because of this, the assessor or diagnostician must use his own judgment a great deal in interpreting the responses. The projective tests tend to sacrifice such virtues of the psychometric tests as objectivity, simplicity, and economy in favor of behavior that potentially reflects the subject's unique orientation to the world and his psychodynamics (pp. 403-404).

Lindzey (1961) synthesized and combined these and other aspects of projective tests in his definition:

> A projective technique is an instrument that is considered especially sensitive to covert or unconscious aspects of behavior, it permits or encourages a wide variety of subject responses, is highly

> multidimentional, and it evokes unusually rich or profuse response data with a minimum of subject awareness concerning the purpose of the test. Further, it is very often true that the stimulus material presented by the projective test is ambiguous, interpreters of the test depend upon holistic analysis, the test evokes fantasy responses, and there are no correct or incorrect responses to the test (p. 45).

Rapaport, Gill and Schafer (1968) further differentiate projective tests from projective procedures-in-general by considering the projective test to be a short-cut method for discovering a person's personality structure and dynamics without using such methods as scrutiny of a case history and intuition. The four general goals or criteria for projective tests cited by Rapaport and his co-authors are summarized:

(1) The eliciting procedure. The test should be economical to use in terms of the time required to give and score it and should be simple to administer. Its administration should not require a close personal relationship between the examiner and subject. It should be limited to one segment of behavior and it should be sufficiently standardized so that all subjects are given the same materials and degree of cooperation by the examiner.

(2) The observing procedure. The testing procedure must be such that its subject matter and starting point is objectively given and observable to the examiner, and its end

point fixed by the instructions.

(3) The recording procedure. The behavior to be elicited must be amenable to full recording. The examiner should not be required to arbitrarily select portions of the material for recording.

(4) The communication procedure. The examiner must be able to describe the personality structure verbally, in terms of making interpersonal comparisons; and designate specific features which differentiate the subject from others. This should be accomplished through quantitative means of comparison.

Validity of Projective Techniques. The demonstration of the validity of projective techniques falters at the point of establishing a meaningful, reliable criterion measure. Predictive validity techniques could be used, but there is little agreement as to which kinds of behavior constitute a legitimate assessment of the total personality. Concurrent validity techniques face the same impasse.

The type of validity usually considered most relevant and important in research with projective techniques is of the construct variety (Bechtoldt, 1959). However, as noted by Shneidman in his discussion of projective techniques in the Handbook of Clinical Psychology (1965), the construct validity concept has at least two major shortcomings. The first is that the phrase "construct

validity" itself appears to be a contradiction in terms:

> It is, in effect, like saying "untestable truth," "debatable fact," "transient verity," "unsubstantiated belief," or "unreal reality."....to conceptualize in terms of construct validity is tantamount to stating that one insists that the phenomena under investigation correlate highly with ideas that somehow one trusts and with taxonomies, usually implicit and unverbalized, whose ordering of the universe into apparent phenomena (implied by the taxonomy) one has unconsciously or uncritically accepted as either optimal or real. Construct validity may contain the usual bedevilments found in any tautology (p. 505).

Secondly, Shneidman points out the possibility of viewing "validity" as automatically exhausting the various kinds of verifiability. He cites the concepts of "espousal, proof and maximum potential verifiability" as being equal in importance to the notions concerning "degrees of certainty, precision, and completeness" in our current thinking about validity (p. 506).

Murstein, in the Handbook of Projective Techniques (1965) has commented on the general failure of studies which have sought to demonstrate that "validity" was or was not an inherent characteristic of projective techniques. He has noted that, rather, "validity" has meaning only within a specific situation. For example, it has been found that the projective techniques which depend more upon "unconscious" processes have fared much less well than those, (such as sentence completion tests) which measure conscious personality attributes. Murstein suggests that such findings are actually to be expected, in view of the conscious kinds of criteria used in most validation studies:

> Why then, should not a strongly conscious test prove more valid than a less conscious one, such as the Rorschach, when rating a highly conscious criterion? In justice to the Rorschach, perhaps, we ought to seek more suitable criteria than conscious and publicly avowed feelings of emotional malaise.. . .Should we allow the inchoate state of personality theory lead us to accept the empirical findings that, for example, the Rorschach is not a very valid test since it often shows little or no relationship to psychiatric classification or ratings gained from observational data? Perhaps instead, we ought to validate the psychiatric ratings by employing the Rorschach as the criterion against which to compare them (p. xviii).

To sum up, projective techniques represent an attempt to gain an idiographic understanding of man as he is involved in his unique intrapsychic and interpersonal relationships, rather than as compared with various isolated aspects of "man-in-general."

Primarily because of the criterion problem, the concept of statistical validity is extremely difficult to utilize in projective technique research. For instance, it appears to be relatively meaningless to expect a projective test to predict conscious criteria when its theoretical purpose is the understanding of unconscious personality structures and dynamics. It is very difficult to establish meaningful criteria in projective research due to the extremely complex and holistic kinds of data yielded by projective tests. It seems unrealistic to expect a projective (or objective) test to predict precisely a multidetermined criterion when neither test nor criterion is fully understood.

Finally, an enumeration of the various "types" of validity procedures does not necessarily seem to deplete all possibilities for verifying the usefulness of projective techniques. "Types of

validity" may be considered only one subsection in a larger classification of ways of understanding data.

The Szondi Test

The Szondi test consists of 48 photographs of mental patients of various diagnoses which is administered by asking a subject to choose pictures which he "likes" and "dislikes." The subject's personality diagnosis is then inferred from his preferred and nonpreferred selections of photographs.

The Szondi test was developed by an Hungarian psychiatrist, Dr. Lipot Szondi (1947), as part of his attempt to demonstrate the importance of latent recessive genes in psychological structures and behavior. Szondi has postulated eight kinds of mental and emotional illness which are associated with eight types of latent recessive genes. These latent genes are assumed to be present in everyone, but in numerically greater amounts in the "mentally ill." Persons who possess similar gene structures are believed to gravitate toward each other through a process known as "genotropism." This process refers specifically to ". . .the attraction (or repulsion) which exists between two or more persons whose genetic stock contains identical or related latent genes" (Szondi, 1947, p. 208). According to Szondi, a subject's picture selections on the test are made on a primarily unconscious, genetically-determined basis. The following poetic description by E. P. Jewell, one of Szondi's students, seems to best sum up Dr. Szondi's beliefs in and aspirations for his test:

> The first individuals who produced the hieroglyphics made them in their own mental image of what constituted courage, love, fear, hatred, etc. In their long evolution, however, to our modern alphabet these images lost their original subjective reality. Nevertheless, these ancient concepts of mans' primitive drives still exist in our familial unconscious. Our image of hatred, for example, is still that of a leering slavering-jawed animal; our concept of love yet encompasses an etheral beautiful woman; our visualization of honesty and truth endures as a shining youth in armor, etc. Szondi in his photographs, which McIntyre has characterized as "the forty-eight faces of destiny," has epitomized this tendency of man to project his thoughts.
>
> In the same way that the Rosetta Stone unlocked the secrets of the hieroglyphics and thereby the secrets of the ancient world, so Szondi's system of psychodiagnostics operating through the "language of choice" has unlocked the secrets of the personal and familial unconscious and thereby the inner secrets of the personality itself. Szondianism is the Rosetta Stone of psychology (Szondi, Moser and Webb, 1959, p. xii).

The Szondi test was introduced in the United States by Susan Deri, a former student and coworker of Szondi. In her Introduction to the Szondi Test (1949), however, Deri did not attempt to utilize Szondi's genetic rationale to account for individual preferences of photographs nor did she base her discussion of the test upon Szondi's psychodiagnostic system. Rather, the test was described as an holistically-oriented projective technique which is unique in its capacity to describe the personality as a dynamic process instead of a static entity. Deri wrote:

> Irrespective of whether or not one accepts Szondi's genetic theory, and whether or not one can agree with him in considering his test as being the proper methodology for proving or disproving this theory, the test has proved itself empirically to be one of the most useful projective

> technics. . . .the test will be described as a projective technic and the basic processes of interpretation will be discussed from a purely psychologic point of view (1949, p. 2).

Since the introduction of the test to American psychologists, a considerable amount of research has been conducted in the attempt to validate (or, perhaps more accurately, to invalidate) the instrument. To the clinical psychologists who continue to utilize the Szondi test, usually as one in a battery of diagnostic tests, it apparently has demonstrated its pragmatic usefulness. Such clinicians tend to ignore or discount the plurality of research which casts doubt on the test's "scientific respectability." Much of the validational research which has been completed on the Szondi test, on the other hand, appears to have been designed so as to leave little realistic possibility of validation.

Szondi Test Materials and Administrative Procedure. The test materials consist of 48 photographs, two-by-three inches in size, divided into six sets of eight pictures each. Each set is comprised of the head-and-shoulders photograph of (1) a male homosexual (actually an hermaphrodite), (2) a male sadistic murderer, (3) an epileptic, (4) an hysteric, (5) a catatonic schizophrenic, (6) a paranoid schizophrenic, (7) a manic-depressive depressive and (8) a manic-depressive manic.

The administration of the test consists of presenting the pictures in standardized groups of eight and asking the subject to choose the two pictures he "likes most" and the two he "dislikes most" from each group. These choices are recorded on

a standard Szondi test profile (Appendix II). The subject is then asked to choose from the remaining 24 photographs the 12 which are liked most and the 12 disliked most, which are recorded on an identical profile. The first 24 photographs chosen comprise the "Original" profile, while the second 24 constitute the "Complementary" (after Szondi) or "Shadow" (after Lemmon) profile (Deri, 1952). The interpretation of the test profile is based upon the number of "likes" and "dislikes" of the particular kinds of photographs, their interrelationships and the similarities and differences between the Original and Shadow profiles. The reader is referred to the standard texts in the area for a formal and complete presentation of the techniques of Szondi test interpretation (Deri, 1949; Szondi, 1947; Szondi, Moser and Webb, 1959).

Deri's Need-System Rationale. Deri attempts to provide a consistent rationale for the Szondi test subject's choice selections through her "need-tension" theory. She has cited Lewin's original formulation of a dynamic theory of need-systems (1935) ". . .by stating that, depending upon the state of tension in the various need-systems of the organism, various environmental objects acquire valence character" (Deri, 1949, p. 25). It is Deri's basic assumption that the eight diagnostic categories represented in the test correlate with eight "need-systems" which exist in every individual to some degree. The subject's like and dislike choices correspond to his dynamic need-tensions; his total system of need-tensions comprising his personality. These need-tensions serve as "driving-forces" in the sense of directing the subject to choose

or avoid certain photographs. The choices or avoidances thus function to reduce the original tension within the personality which exists due to ungratified need. In general, Deri sees the function of all behavior in Lewinian approach-avoidance terms; the particular kind of activity engaged in by the individual (the specific type of goal object approached or avoided) depends upon the degree of tension present within the need-system. The degree of tension within the need-system is also influenced by the environmental availability of appropriate channels through which the need-tension can be discharged.

Table 1 illustrates the specific need associated with each of the Szondian diagnostic categories or "factors." The factors are divided into bipolar pairs, each pair comprising a separate but interacting "vector."

The Sexual (S) vector, consisting of the homosexual and sadist pictures, represents the passive and active aspects of sexuality. The Paroxymal (P) vector, comprised of the epileptic and hysteric factors, is associated with the inhibition or exhibition of emotions. The catatonic and paranoid schizophrenic photographs make up the Schizophrenic (SCH) or "Ego" vector, which represents the individual's opposite needs to be separate from or freely interacting with his milieu. Finally, the Contact (C) vector consists of the depressive and manic photographs, representing the subject's attitudes toward the objects (of libido) in the environment, his "contact with reality."

According to Deri's need-system rationale, the frequency

Table 1

Szondi Test Vectors and Factors Corresponding to Need Areas

VECTOR	FACTOR	NEED-TENSION
S	homosexual h	Need to give one's self to be tenderly loved by another.
	sadistic s	Need to act and love aggressively.
P	epileptic e	Need for ethical behavior, control of aggression.
	hysteric hy	Need for exhibitionistic expression of emotions.
SCH	catatonic k	Need for "ego contraction;" tendency toward internalization of ideals; need to remain apart from others.
	paranoid p	Need for "ego expansion;" tendency toward creation of ego ideals; need to express and share thoughts and feelings with others.
C	depressive d	Need for seeking, acquiring and adhering to (libido) objects.
	manic m	Need for clinging fast and protecting (libido) objects

of selections within a given diagnostic category (factor) is an indication of the amount of tension within the particular need-system. Accordingly, a predominant number of "like" choices within a factor is believed to represent an identification with, or conscious acceptance of the associated need. Conversely, a majority of "dislike" choices constitutes a "counter-identification" or conscious rejection of the need. The presence of both like and dislike choices within a factor indicates ambivalence regarding the conscious acceptance or rejection of the associated need, while the relative absence of choices within a factor points to a relative lack of tension within the need-system.

There are a variety of basic assumptions and sub-assumptions which can be derived from the theoretical rationales underlying the Szondi test. The specific nature of the assumption depends upon whether one is considering the genetically-based rationale of Szondi or whether, as is the case with most American psychologists, one utilizes Deri's need-tension system. Szondi and Deri are in essential agreement however, on three basic postulates; (1) that personality characteristics are reflected in the individual facial physiognomy, (2) that the subject's test choices are largely unconscious (made in terms of stimulus qualities of which he is primarily unaware) and (3) that the photographs within a diagnostic category are essentially equal as to intensity and type of stimulus quality. The separate logical and theoretical assumptions associated with the test rationales of Szondi and Deri are summarized in Appendix I.

Review of Research

There are few Szondi studies reported in the current literature, particularly in the United States, although there are scattered reports of research in other countries. A search of the current Psychological Abstracts reveals no published Szondi test research during 1969, only one French study in 1968, one Italian study in 1967 and only three published studies during 1966; one French, one Italian and one Indian.

Crenshaw and his associates (1968) reviewed ten psychology journals for projective tehcnique research during the years 1947 through 1965. It was found that of the 21 projective techniques surveyed, the Szondi test dropped from a rank frequency of sixth, which it held during the first five years of the survey, to nineteenth during the last five years. For example, there were 23 published studies dealing with the Szondi test during the years 1951 through 1952, but only six reported studies from 1958 through 1962. During the years 1963 through 1965, there was no published Szondi research reported in the ten journals reviewed by Crenshaw and his associates.

Accordingly, the majority of the research cited in this review of the Szondi literature will be a number of years old, with occasional exceptions whenever it is possible to cite available unpublished research. The review will be divided into three, often overlapping sections: (1) studies pertaining to investigations of the basic theoretical assumptions postulated by Szondi and Deri;

(2) research involving Szondi test findings obtained from various populations (children, juvenile delinquents and anti-social adults) and (3) validity and reliability studies.

Szondi's Genetic Assumptions. Rabin (1952) and Goldman (1952) conducted studies which are examples of the kind of research undertaken in order to investigate Szondi's genetic postulates.

Rabin compared the test results of 37 pairs of identical and fraternal twins, 25 pairs of like-sex siblings and 37 pairs of unrelated individuals. Of the 37 pairs of twins, 24 were, according to their verbal report, identical twins. The 37 pairs of unrelated individuals were matched for sex and age with the other groups. Rabin reasoned that if Szondi's genetic hypotheses were accurate, one could expect that the amount of agreement between pairs of Szondi photographs chosen by the identical twins would be greater than those chosen by pairs of fraternal twins, like-sex siblings and unrelated individuals. Such reasoning seems plausible since identical twins have identical genetic backgrounds. Rabin found that there were significant differences between the total twin group's choices of photographs and those of the 37 pairs of unrelated individuals. However, it was also found that the identical and fraternal twins' choices were almost identical as to amount of agreement. Rabin thus found no support for Szondi's genetic postulates, attributing the higher degree of agreement between twin pairs, as compared with pairs of unrelated individuals, to major differences in life experiences. He further offered an alternative environmental hypothesis as the mediational process which accounts

for Szondi picture selection.

Goldman (1952) investigated Szondi's genetic assumptions by comparing the test responses of white, male World War II veterans on the Parozymal (P) vector (epileptic and hysteric photographs). He utilized three groups of 26 subjects each; one group which had been diagnosed as having had seizures related to an idiopathic epilepsy condition (abnormal EEG patterns), another group which had been diagnosed as having hysterical seizures (normal EEG patterns) and a third group which had been diagnosed as neurotic (no seizures). The primary hypothesis under investigation was whether test subjects respond to the Szondi photographs as a function of the relationship between their own genetically-determined "drive tendencies" and those of the pictured patients. It was found that the photograph selections made within the P vector did not significantly differentiate the three groups.

It is evident that Goldman did not understand the Szondi test. For example, he apparently did not control for the theoretically important variable of "time-since-last-seizure." Without such control, the P vector could not be expected to differentiate the groups, since both the epileptic (e) and hysteric (hy) factors are related to the inhibition and discharge of energy. In addition, since Goldman states that the epileptic patients had received anticonvulsive medication (and apparently were under the influence of such medication when administered the Szondi test), the study's results appear to be of doubtful meaning.

One aspect of Goldman's research seems noteworthy in another vein. It was found that the group of hysterical patients gave significantly more "minus-s" responses than did the other two groups. Such a difference would be theoretically predictable, since the "minus-s" configuration points toward a denial or repression of anger, which is characteristic of the hysterical personality. Such a finding appears to lend validational support to the purported meaning of the s (sadistic) factor.

In summary, although few studies have been published which relate directly to an investigation of Szondi's genetic postulates, those which have been completed have not produced supportive conclusions.

Assumed Relationship Between Facial Physiognomy and Personality. One assumption, basic to both Szondi's and Deri's rationales, is that of the assumed correlation between personality characteristics and facial physiognomy. It seems appropriate, therefore, to discuss the history of this concept in some detail.

Langfeld (1918) used a series of sketches drawn by a prominent German artist, Rudolph, to investigate the relationship between emotions and facial expressions. Rudolph's sketches were drawn from photographs of a skilled actor portraying a series of different attitudes and emotions. Langfeld selected 105 of the sketches and asked subjects to write descriptions of them. It was found that the subjects ranged in ability to correctly interpret the intended emotions from 17% to 58% accuracy.

Guilford (1929) obtained comparable results in a

replication of the experiment conducted by Langfeld. In addition, Guilford found that when the subjects were trained with regard to the role of the various facial muscles used in the expression of emotion, their success in identifying emotions accurately increased.

Munn (1940) selected 16 unposed photographs from two popular magazines (Life and Look) and prepared two sets of lantern slides from them. The complete photographs were contained in the first set of slides, while the second set contained enlargements of only the face. The facial enlargements were presented to 90 psychology students, who were asked to judge the emotional reactions represented. One week later, the students were shown the complete pictures and again asked to judge the expressed emotions. A second group of 65 students were presented the same pictures in conjunction with a suggested list of emotions from which to choose. The suggested list was prepared from those most frequently given by the initial group of judges. Munn found that the predominant judgments of the two groups were very similar, concluding that:

> . . .aroused emotional expressions may be interpreted with as much agreement as are the more conventional posed expressions used in previous research (p. 338).

Five studies by Arnheim, reported by Vernon (1936), indicate that subjects can successfully match such variables as portraits with single character traits, portraits with descriptions of the style of life of the persons portrayed and portraits of three of Kretchmer's psychopathic patients with personality sketches. The contingency coefficients for these matchings ranged from .48 to

.74. Arnheim also matched silhouettes and personality characteristics successfully, with reported C's ranging from .31 to .63.

Wolff (1943) has demonstrated that subjects can accurately match personality characteristics with only portions of photographs of persons with known medical diagnoses. Wolff concluded that:

> . . .the correlation between the expressive value of certain parts of the face and the traits listed in the medical diagnoses is not accidental (p. 38).

To summarize, there appears to be considerable experimental evidence that at least some aspects of personality can be discerned from photographs. The research of Arnheim and Wolff suggest that even some complex personality attributes may be related to portraits and photographs in some way. It seems plausible, accordingly, that at least some personality characteristics may be identifiable in expressive behavior; that:

> The expressive features of the body are not independently activated. Any one of them is affected in much the same way as any other (Allport, 1937, p. 480).

Stimulus Properties of the Szondi Photographs. The original evidence in support of the assumption that personality characteristics are discernible from the Szondi photographs stems from Szondi's "experiment in factorial association" (Deri, 1949, pp. 17-24; Szondi, 1953, Ch. V). The experiment consisted of presenting subjects with photographs which they had chosen as "liked" or "disliked" and instructing them to elaborate on the personality characteristics of the depicted persons. Both Szondi and Deri

report that the verbal associations are descriptive of the characteristics and dynamics of the respective diagnostic categories. To explain this reported phenomenon, Szondi has assumed that personality characteristics, based on "genotropic influences," are present in the photographs. Deri, more cautiously, has written that:

> These . . . (associations) are of course not 'proof' in the strict sense of the word yet they throw light on the specific ways in which the stimulus material of this test affects the subject (p. 23).

In an attempt to verify the presence of such common associations, Klopfer (1950) used ten graduate students as subjects, who had all either undergone private psychoanalysis or who currently were in analysis. He reasoned that these subjects' ability to free-associate to the Szondi photographs would be greater than that of the average person. He found that only 23 of the 48 pictures yielded the same associative content as that reported by Szondi.

Davis and Raimy (1952) utilized three separate groups of beginning psychology students to write brief, free descriptions of the facial expressions of 24 of the Szondi pictures (one-half of the photographs from each of the eight diagnostic categories). Using independent and committee judgments of the written descriptions, eight most-frequent "clusters" of descriptions were obtained for each of the eight categories. It was found, after determining which of the descriptions were agreed upon at better than a chance frequency, that only three of the 24 photographs used had standard stimulus values. For the remaining 21 photographs, it was found that only two or three descriptions of the eight compared were appropriate

to the specific categories. There was no diagnostic category used by Szondi for which there was a common description for all the pictures in that category.

Davis and Raimy recognized that their results may not have been an accurate test of the "intra-category equivalence" assumption, due to their use of written descriptions of the Szondi photographs. In their words, they were aware of:

> . . . the possibility that subliminal cues may be more influential in the S's selections during the testing procedure than they are in the verbalized descriptions obtained by us from our laboratory subjects. If the subliminal clue hypothesis is correct, it would seem that evidence is needed to substantiate it (pp. 159-160).

Dudek and Patterson (1952) utilized a different approach in the attempt to determine whether the photographs within any given diagnostic category have common characteristics which differentiate them individually and as a group from the photographs within other categories. They utilized 100 naive subjects, ranging in age from 20 to 56 years, who matched the 48 Szondi pictures with verbal passages describing the characteristics of the eight diagnostic categories. Four "neutral" descriptions were also included in the verbal passages. It was found that certain consistencies did appear in the subjects' responses. However, pictures within categories were not found to be consistent since some were more frequently identified correctly than were others. Also, some pictures seemed to be associated with categories other than those to which they belonged. In general, the results suggested that chance cannot explain the way in which the photographs were associated

with the verbal descriptive passages, although the assumption of equal associative stimulus values (photograph valences) within categories was not supported.

Richardson (1952), in another approach to the question of intracategory equivalence, asked ten subjects to match the photographs of every other series. The subjects were asked to match each picture with the other pictures which represented to them the identical dominant emotion or feeling. The manic (m) and homosexual (h) photographs were matched correctly almost three times better than would be expected by chance. The paranoid (p) and sadistic (s) photographs were also correctly matched at a frequency well above chance expectancy (double). However, the matchings in the other four diagnostic categories did not occur at a frequency significantly different from chance.

It should be noted that, although Richardson did not utilize verbal or written descriptions in his investigation of the stimulus commonality of the photographs, he did utilize another "conscious" process; that of photograph-matching by subjects.

Booth (1967) asked 50 beginning psychology students to rate the 48 Szondi pictures on the three major dimensions of the Semantic Differential (Osgood, Suci and Tannenbaum, 1957). In accord with all other studies which have investigated the assumption of intra-category stimulus equivalence, Booth found that the assumption could not be supported, although specific photographs within categories appeared to have common meanings.

Webb (Szondi, Moser and Webb, 1959) has attempted to

answer the criticism leveled at the assumption of intra-category equivalence and the validity of Szondi's "experiment in factorial association." He asserts that, after consulting with Dr. Szondi, the proper associative technique to be used with the Szondi photographs is a "forced" rather than a "free" association; that the original validational technique was in fact of this "forced" variety:

> By the forced association technic we refer to that method by which the examiner repeats forcefully the stimulus words produced by the subject and thus constrains him to proceed further in his narration. The method is somewhat analogous to the forensic technic of cross-examination employed against reluctant or hostile witnesses (p. 10).

To the writer's knowledge, no research has been completed which compares such a "forced association" method with a "free" one, but it does seem unlikely that the findings of such a study would differ significantly from those found in others. The following brief critique is offered in support of this opinion and as a generalized criticism of the cited studies which have utilized verbal and written associations to the Szondi pictures:

Critique. There appear to be several major difficulties associated with the use of verbal and/or written descriptions of the meanings or valences of the Szondi photographs. First, descriptions of even the most stereotyped stimulus pattern would necessarily appear to vary considerably because of individual differences inherent in the perceptual processes of the describing individuals. Second, even if the presence of common valences could be demonstrated, it seems reasonable to doubt that the associations actually have a

direct relationship with the personality of the pictured person; such associations could well be simply projections of the describing person. Finally, the conscious descriptions of the photographs made by subjects are theoretically meaningless, since according to the rationales of both Deri and Szondi, the test subject's selections of the photographs are made on a primarily unconscious basis. With regard to this point, Deri doubts:

> . . . whether a direct verbal approach can ever be designed which reveals the assumed unconscious resonance to the essence of the mental disorders depicted in the photographs . . . (1952, p. 224).

Saunders (1953) devised an ingenious experimental situation which seems to have overcome the major difficulty in investigating the basic assumption of the "unconscious resonance" between the Szondi test subject and the Szondi photograph. Saunders investigated two basic assumptions of Szondi test theory; (1) that picture selection is affected by similarities in personality between the test subject and the pictured mental patient and (2) that the subject's reasons for choosing particular photographs can be determined from his associations to the photographs, since both choices and associations are theoretically functions of the same psychological processes. To test these assumptions, Saunders constructed an experimental situation in which 20 male subjects drawn at random from an introductory psychology class, were given the choice of choosing or rejecting facial portions of their own photographs. The photographs were obtained and used without the subjects' knowledge. Saunders presented two series of facial segments to each

subject, part of which were from the subject's own photograph and part from the photographs of other experimental subjects.

It was found that the subjects selected their own facial segments as "liked" and facial segments of others as "disliked" significantly more often than could be expected by chance. The test of the second hypothesis was made by comparing a subject's "liked" or "disliked" selections with his verbal associations to his selections. These associations were classified as "favorable" or "unfavorable" by pooling the opinions of ten independent judges. Agreement was designated as the consensus of seven of the ten judges. It was found that the "favorable" associations were matched with the "like" selections and the "unfavorable" associations matched with the "dislike" selections to a degree significantly greater than would be expected by chance.

To summarize, the "experiment in factorial association" as explicated by Szondi has thus far not been replicable. Although some studies have obtained results which are partially in agreement as to Szondi's findings, no study has obtained significantly positive results with regard to the claimed associative meanings of each of the eight diagnostic categories. However, the majority of the studies cited have utilized seemingly inappropriate research designs, in that verbal, written or matching techniques could all be said to be attempts to investigate theoretically unconscious test characteristics through conscious means.

Deri's Need-Tension Assumptions. Guertin (1950) investigated an assumption basic to Deri's rationale; that different degrees

of tension are reflected in the Szondi test by differential picture selection patterns. He reasoned that if the assumption is a valid one, then the Szondi profiles of a group of hospital attendants, should be different than a group of profiles derived from random numbers. It was found that there were no significant differences between the profiles in regard to the frequency of selections within categories nor in selection of positive choices. Significant differences were found in the selection of negative choices and in the frequencies of intracategory inbalances (plus scores greater than minus, or vice-versa). The attendants' profiles were found to have more negative and unbalanced scores, while the chance profiles had significantly more ambivalent scores. Guertin concluded from his findings that frequency of selections within a category is not indicative of tension within that area; that ambivalence within categories is indicative of stability rather than conflict, and that minus scores are most reflective of tension.

Guertin's findings seem of questionable meaning in that the extent of the attendant group's homogeneity or hetereogenity with regard to the experimental variables being considered (need-tension) was not specified. No external criteria for such a variable was employed. Therefore, the only supported conclusions appear to be that the group of subjects used can be characterized by certain negative and unbalanced category choices.

Odes (1950) investigated the differential effects of reading a short horror story and a pleasant story to 40 mostly

graduate students. The Szondi test was administered before and after reading the stories. Odes reported that a majority of the subjects had strong emotional reactions to the horror story (although not to the pleasant one).

It was found that there were marked changes between the pre-and post-Szondi test profiles of the majority of the subjects. The primary change appeared in the k factor which became more "directional" after the reading of the horror story; in either the "plus" or "minus" direction. The changes in the other factors appeared to be in a definite relationship to the changes in the k factor. When the k factor became more "minus" (repression used more as a defense mechanism), the s and d factors became less "minus" and the e factor became less "plus." When the k factor became more "plus" the s and d factors became more "plus" and the e factor became more "minus." These changes are related to differing ways of coping with the affect aroused by the horror story and are interpreted as being consistent with need-tension theory by Odes (pp. 11-14). Other pre-to post-test changes occurred in the direction of more "loadedness" in the p factor (more choices in the factor) and less "loadedness" in the m factor (fewer choices in the factor). Regarding interpretation of these changes, a more loaded p indicates a higher level of "internal pressures" and a less loaded m indicates a shift from a "passive" kind of coping behavior to a more active, manipulative coping. Again, these kinds of changes are interpreted by Odes as being the theoretically expected ones in terms of need-tension rationale. Further corroboration of the meaning of the Ego or Schizophrenic vector (k and p

factors) was found by Odes in that the subjects who gave an "open k" response (few or no choices on the k factor) on the pre-test responded with more frequent and extreme changes on the post-test. Conversely, the subjects who gave an "open p" response on the pre-test changed little or none on the post-test. The post-test changes for the "open k" and "open p" subjects were toward greater and less changes in the other factors, respectively. In Odes' words:

> . . . in this group, which gave an initial 'open k' response, the changes in the Szondi profiles were most striking, and the reaction to the story the most severe. The 'open k' group is in this respect at the other extreme from the 'open p' group. The susceptibility of this group (open k) may be related to their lack of sufficient ego defences to deal with the stress situation, or to maintain an inner distance from it as the 'open k' response would suggest (1951, p. 11).

The subjects who commented, after hearing the horror story, that it was "too far removed, too fantastic;" who failed to respond emotionally, gave "open p" responses both on the pre- and post-tests. This apparent lack of emotional reaction of the "open p" group was reflected on the post-test by a lack of the characteristic changes in the other factors (e, d, s and m). The differences between the "open k" and "open p" subjects are consistent in terms of Deri's rationale:

> Subjects with open k . . . give free reign to their needs without feeling the necessity either to neutralize the needs by introjecting . . . or to repress them (pp. 206-207).

> While . . . no tension in the p factor always indicates the lack of such projective mechanisms as sincere 'sympathy' or 'empathy' . . . (p. 290).

While Odes' study seems to provide support for Deri's interpretation of several factors, especially the k and p factors, it is open to methodological criticism. The criterion for "strong emotional reactions" appears to be a vague one, particularly since there apparently was no attempt to control for contamination between judgments of emotional behavior and interpretations of test behavior. These two interpretations were apparently made by the same experimenter.

Deri (1950) investigated the effect of electroshock therapy upon Szondi test behavior. She hypothesized that the tendency of depressive patients to reject the sadistic (s) photographs would be modified by EST treatments toward less rejection. According to need-tension theory, this is predicted since "minus s" is a characteristic sign of depression and would be modified toward "plus s" when the depression lifts (as after EST treatments). Utilizing 19 shock patients, with Szondi pre- and post-tests before and after shock, and control groups of ten non-shock patients and ten hospital employees, Deri found that the shock patients gave less "minus s" responses after treatment while the control subjects did not. The shock patients also showed more "minus k" responses in the post-treatment Szondi profile, which was interpreted as showing greater use of repression. Greater use of repression is concomitant with less depression (introverted aggression). The differences between the experimental and control groups were statistically significant.

Fosberg (1951) studied the need-tension hypothesis that overt discharge or release of sexual tension will be reflected in

the decreased selection of the homosexual (h) and the sadist (s) photographs, the two factors comprising the Sexual vector. Using ten male and ten female volunteers, Fosberg found no significant differences in selection of the h and s pictures between reported sexual activity within 12 hours, or over 48 hours. Fosberg's findings seem inconclusive, however, in that such volunteers may well be more conscious of sexual needs and therefore experience less nonconscious tension regarding such needs. According to need-tension rationale, needs may be gratified either through "acting-out" or through intellectual or fantasy experience, depending upon the person's characteristic manner of emotional expression.

Hill (1951) compared category, vector and individual photograph selection patterns of 1066 college students with the chance probabilities of such patterns. He found that most choice patterns did differ significantly from chance, but pointed out that the failure of chance to account for test patterns does not provide data as to the actual test determinants.

Saunders and North (1951) investigated the effect of an experimentally induced frame of reference on the consistency of responses on the Szondi test. They reasoned that if Szondi test behavior is primarily due to basic personality structure, then test responses should not be sensitive to cognitive transitory sets. The authors selected frames of reference which were designed to alter judgments rather than affect the subjects emotionally. This was done so the subjects' "need-systems" could remain essentially unaffected. College students (N = 420) were assigned to three groups,

each group receiving two standard Szondi test administrations and one interpolated Szondi test administered under altered instructions. One group received, as the interpolated test instructions, the standard instructions to choose liked and disliked pictures. Another group was instructed to choose "happy" and "unhappy" pictures while a third group was asked to make "strong-weak character" selections. Three of the six sets of pictures were used as pre- and post-tests, while the other three sets were utilized for the interpolated test.

It was found that the three groups were essentially equal as to extent of agreement between pre- and post-test choices (75% duplicate responses). It was concluded that the transitory set (the judging process) did not appreciably alter Szondi test responses when the test is given under standard instructions. The results were seen to lend support to the assumption that Szondi test behavior is primarily a function of personality structure rather than transitory cognitive set. The authors noted, however, that one important variable in the study was uncontrolled, the possibility of retention of responses from the pre- to the post-test significantly influencing the degree of consistency between the pre- and post-tests.

Logan (1961) utilized an experimental design similar to that used by Odes (1950). The Szondi test was administered before and after the showing of a movie demonstrating human suffering as the result of a destructive tornado. It was hypothesized that the sudden arousal of sorrow in normal subjects would be reflected by a shift in the direction of higher (plus) h, hy and m scores. A group of experimental subjects showed a small, nonsignificant shift

in the expected direction, as compared with a control group. When the experimental subjects were divided into those who had experienced "little or moderate" sorrow arousal and "intense" sorrow arousal, significant differences were found between the two groups. The "little or moderate" sorrow subjects showed significant pre- to post-test shifts in the predicted direction on all three factors, while the "intense sorrow" subjects showed significant shifts in the three factors in the opposite direction (minus).

Logan explained his findings by suggesting that the conscious awareness of sorrow resulted in a release of tension, thus accounting for the opposite direction of the "intense sorrow arousal" subjects. This explanation, which is similar to this writer's in relation to the negative findings of Fosberg (1951), seems plausible in terms of Deri's need-tension theory.

To summarize, the following general findings and criticisms have been presented: (1) chance does not appear to account for Szondi photograph selections; (2) Deri's need-tension rationale appears to have been given tentative support with regard to the meanings of each of the eight Szondi factors; (3) the majority of the cited studies are open to methodological criticism related to the difficulties in establishing meaningful criterion measures.

Child, Juvenile Delinquent and Anti-Social Adult Research

Child Studies. Spitz (1950) has reported findings from the Szondi test obtained from a total sample of 110 Swiss children

between the ages of five and seven years. By averaging the frequency of picture selections in the eight Szondi factors, she derived a characteristic profile for the five-to-seven year old child as follows: plus h, plus s, minus e, minus hy, minus k, minus p, open d and minus m. This profile is, according to Deri (1949), typical of children at about this age level.

Fancher and Weinstein (1956) investigated the Szondi test patterns of seven year old American children of various national, socio-economic and cultural backgrounds. Using test results from 50 white public school children, 50 white "progressive school" children, 50 Negro children from Harlem and 50 Puerto Rican children from Harlem, it was found that all groups displayed very similar test patterns. Although there were a few significant differences between the groups, the authors stated that these differences seemed consistent with the known cultural variations. In comparing their findings with those of Spitz, Fancher and Weinstein found an identical average profile, with the exception of the e factor. Spitz's sample of Swiss children gave an average e factor response which was "minus," while Fancher and Weinstein found that the American children gave a variable e response. The authors concluded that children's Szondi test responses are probably dependent basically on developmental factors, rather than cultural ones.

In another study, Fancher (1956) compared the Szondi test profiles of 200 seven year old children (same subjects as in 1956 Fancher and Weinstein study) with the profiles of 88 adolescents, aged 14 to 16 years. As compared with the seven year old children,

the adolescents' Szondi profiles differed in regard to five factors e, p, d, m and s. Their responses suggested greater degrees of self-control (plus e), psychological insight (plus p), capacity for sublimation (plus m), idealistic thinking (minus d) and more socialized ways of coping with aggressive needs (variable s). Such differences are characteristic of adolescents as compared with preadolescent children and are consistent with Deri's need-tension rationale.

Finally, a study by Whitmyre (1952) offers additional tentative support of the Szondi test's capacity to differentiate between children of various age levels. Whitmyre investigated the relationship of Szondi test responses in the Sch vector (k and p factors) to chronological age level. According to Szondi, as reported by Deri (1949, pp. 209-242), six stages in the ego development of children are reflected in six specific Sch vector configurations. The first stage is theoretically that of the newborn child, while the sixth stage is that of the adolescent. These hypothesized stages are reflected in the Szondi test by different k and p factor configurations.

Using two groups of school children, 50 six year olds, to nearest birthday and 50 twelve year olds, Whitmyre compared the Szondi profiles with relation to the differences found in the Sch vector. It was found that there was ". . . a low significant relationship between Szondi ego stage and chronological age. . . . This relationship is in the direction expected, with younger ego stages being associated with younger children and older ego stages

being associated with older children." Although considerable overlap was found in the ego stages of the two groups, . . ."This is explainable within the rationale of the test" (Whitmyre, 1952, p. 9).

To sum up, although the cited studies cannot be termed strictly controlled research, they provide at least tentative support for the ability of the Szondi test to differentiate between chronological age groups and offer some empirical foundation for specific theoretical postulates. Those which have received some support are: (1) at least with regard to children, cultural differences appear to be secondary to developmental characteristics in determining Szondi test responses; (2) the obtained differences between adolescent and pre-adolescent children appear to be those which would be predicted by the test rationale. These differences constitute a tentative validation of the s, e, d, p and m factors; (3) there appears to be a positive relationship between the six Sch (ego) vector developmental stages and chronological age level.

Juvenile Delinquent and Anti-Social Adult Research. The attempt to distinguish between criminals and non-criminals via the Szondi test has been a frequent concern of both Szondi and Deri. In the most recent text dealing with the test (The Szondi Test, Szondi, Moser and Webb, 1959), a complete chapter is devoted to the Szondi test's use as an aid in forensic psychiatry and psychology (Chapter 8, pp. 172-245). Deri (1949) also has made frequent references to the typical kinds of responses and patterns associated with anti-social behavior, at one point giving a typical profile

illustrating the presence of anti-social, murderous impulses (pp. 307-315). With regard to the difficulties of the differential diagnosis of criminals and delinquents from more well-socialized individuals, Deri (1954) has written:

> Can we diagnose with certainty various types of criminality and delinquency on the basis of the Szondi profiles? No, we cannot. We cannot do that in spite of the fact that there are certain types of choices of the Szondi pictures which are characteristic of certain types of individuals who in one way or another get into trouble with the law. . . . one can say (however) that what antisocial individuals have in common in their Szondi profiles is the presence of intensive primitive drives with simultaneous lack of integrative or sublimating mechanisms, unsatisfactory correlation between the constellations of the eight drive-factors, which means the lack of healthy self-regulating processes (p. 34).

With regard to empirical findings, studies by Deri (1954) and Harrower (1958) are illustrative. Deri compared and contrasted Szondi profiles obtained from five groups of individuals. Four of the groups were antisocial ones: (1) 13 convicted murderers; (2) 50 convicted thieves; (3) 25 frequently truant children and (4) 19 Parisian prostitutes. The fifth group consisted of 40 theology students. Table 2 compares the most frequent responses of the combined antisocial groups with the most frequent responses of the group of theology students.

Table 2

Comparison of Most Frequent Responses on Szondi Test of Four Antisocial Groups (N=107) With Theology Students (N=40)

Factors	h	s	e	hy	k	p	d	m	
Anti-Social Groups	+	0 and +	-	+ and -	-	-	0 and +	0 and -	Anti-Social Groups
Theology Student Group	±	-	+	-	-	+	-	+	Theology Student Group

0 = open reaction
+ = chosen as liked
- = chosen as disliked
± = ambivalent

Marked differences are in six factors, h, s, e, p, d and m. Deri interpreted the antisocial profile as follows:

> The overall presence of the plus 'h' and minus 'm' shows the basic infantile character and oral frustration of these individuals, while the plus 's' and minus 'e' reactions show the tendency to react with unsublimated aggression. The absence of minus 'h' and minus 's' shows the untamable intensity of the infantile drives -in analytic terms the unaltered intensity of the Id-drives. . . . the undifferentiated Ego of a minus 'k', minus 'p' type, . . . has no power to mold and channelize the socially unacceptable drives of the Id, except for some attempt at repression which easily breaks down under pressure (p. 41).

Harrower (1958) investigated and compared the Szondi profiles of 83 delinquent children (first offenders), 18 "neglected" children and 77 nondelinquent children. The 83 delinquent children were brought into a New York City court on charges of (1) sexual

misdemeanors (N=21), (2) incorrigibility (N=12), (3) assault (N=12), (4) stealing (N=24) and (5) breaking-in (N=14). Three main ethnic groups were represented in the group of delinquent children; (1) white (N=30), (2) Negro children (N=21) and (3) Puerto Rican children (N=32). Table 3 compares the typical profile of the delinquent group with the typical profile of the non-delinquent group. The most frequent factor directions are given with the percentage of the total subjects in each group giving the response.

Table 3

Comparison of Typical Szondi Profile of
83 Delinquent Children With
77 Non-Delinquent Children

Factors	h	s	e	hy	k	p	d	m
Delinquent N=83	plus 69%	plus 55%	plus 29%	minus 65%	minus 48%	plus 33%	open 54%	minus 41%
Non-Delinquent N=77	plus 48%	plus 32% minus 32%	plus 34%	minus 62%	minus 43%	plus 49%	minus 45%	plus 45%

Although the differences between Harrower's delinquents and non-delinquents are not as clearcut as are the differences between the antisocial group and theology students compared by Deri (1954), there are similarities in the two studies. For example, the delinquent group tends to have more "plus h", "plus s," less "plus p," more "open d" and "minus m." The typical delinquent

profile and the most frequent antisocial adult profile are similar in the preponderance of "plus h," "plus s," "minus hy," "minus k," open d and "minus m." In summarizing her findings, Harrower's remarks are similar to those of Deri in describing the antisocial profile:

> Our findings show that a typical profile exists for this delinquent group as a whole, with some minor variations to be found when this group is broken up in terms of why the child was brought to the court. . . . Of prime importance in terms of the delinquent group as a whole, and in varying degrees amongst the subgroup(s) . . . is the strength of the unsatisfied craving for love and attention, the strong + h, and the generally pessimistic orientation, the basic emotional frustration carried in the m. The delinquent group also appears more aggressive than the controls . . . (p. 16).

The differences which exist between Harrower's delinquent and Deri's antisocial group may in part be explained by differences between the compositions of the groups. Harrower's subjects were all younger first offenders, while Deri's were generally older and may have been habitual offenders. This is only speculative, however, since Deri does not give complete information in her study. Regardless, the two studies appear to offer some empirical basis for Deri's theoretical assertions concerning personality differences between criminal and non-criminal populations.

Validity Research. The majority of past Szondi test research has been related primarily to attempts to verify the various logical assumptions which seem basic to the test's rationale. Examples, already cited, are the studies of Klopfer (1950), Davis and Raimy (1952), Dudek and Patterson (1952) and Richardson (1952).

These studies, all of which found generally negative results, were basically concerned with the "intra-test" assumptions of the Szondi test; its internal consistency. Researchers who have utilized "extra-" rather than "intra-test" criteria, however, have tended to find more positive results. Examples are the cited studies of Odes (1950), Deri (1950) and Logan (1961).

Another study which used an external criterion measure was that of Ray and Oldroyd (1957). They investigated the validity of the Szondi e factor (epileptic) by comparing the Galvanic Skin Response (GSR) readings of subjects who characteristically gave Szondi "loaded" (four or more) "plus e" responses with subjects who did not give such responses. It was hypothesized that, compared with other subjects, "plus e" subjects, being more emotionally rigid and inhibited, would have slower relaxation rates as measured by GSR readings. It was found that significant differences in the predicted direction existed between the "plus e" and the other subjects.

Holt (1950) used an idiographic approach to Szondi test validation, utilizing self-ratings as criteria, by repeatedly administering the test to a 24 year old male subject. During each of the twelve testing sessions, conducted over a two week period, the subject completed a 130 item self-rating checklist. Thirty of the items were directly related to the Szondi test factors. Correlations were obtained between the variations in the subject's self-ratings and the variations in the Szondi test choices. Holt concluded that "The correlations obtained give a substantial measure

of entirely independent support to Deri's statements about the meaning of the Szondi factors. . ." (p. 444).

It seems apparent then, in view of the studies by Ray and Oldroyd and by Holt, that research with the Szondi test is more likely to find positive results when other than an internal kind of criterion is utilized. This point is stressed in Aumack (1957), who suggests that research with the Szondi test has been largely negative because of the primary use of "intra-test" rather than "extra-test" criteria, and sees the test as a potentially valuable instrument which should not be abandoned because of negative results found with research utilizing intra-test criteria.

Another important methodological differentiation in research with projective techniques is that between designs employing a quantitative, "sign" approach as contrasted with those utilizing a more holistic, qualitative one. The "sign" approach consists essentially of isolating assumed differentiating responses or response patterns which are then used as criterion measures for distinguishing between various populations.

An example is a study completed by David and Rabinowitz (1952) who gleaned 25 Szondi factor configurations from the writings of Deri which were associated with male homosexuality. These "signs" were then used as criteria for differentiating between 100 male homosexuals and 100 male epileptics. Of the 25 signs utilized in the study, it was found that only six significantly differentiated the groups in the predicted direction and that two were significant in the non-predicted direction. Deri (1954) has commented on the

"sign" approach as follows:

> The answer to this seeming contradiction lies in the meaning of the term, "signs". . . . sometimes they inferred the existence of established signs where such signs were never originally mentioned. For example, there was a dissertation on the Szondi test (David, 1951) in which "signs" for homosexuality were used as the main criteria, these signs having been inferred on the basis of lumping together all the entries under the word "homosexuality" in the index of my book (Deri, 1949). . . . And here we come to one of the basic problems of interpreting projective tehcniques- or rather of human psychodynamics in general-namely: what is the relationship between existing psychological tendencies and manifest behavior? . . . identical surface manifestations can be produced by different underlying causes and the reverse: similar psychological causal factors can result in different behavior symptoms (p. 33).

A "sign" approach then, would seem to ignore many relevant variables implicit in a more "holistic" approach; such as the almost infinite interrelationships between various Szondi test indices and the interpretative processes of the examiner. These points seem to have been better taken into account by a later study (David, Orne and Rabinowitz, 1953) in which the quantitative, sign, approach was combined with a more holistic, qualitative methodology. From the same 100 male homosexual and 100 epileptic Szondi test profiles which were used in David and Rabinowitz's 1952 study, the authors asked three recognized Szondi test experts to divide 139 of the profiles into homosexual and epileptic groups. (The full 200 profiles, because of the experts' time limitations, were not used.) The three Szondi test experts were Dr. Szondi and two of his former students. It was found that 66.9% of the profiles were accurately differentiated, which is significantly

different from chance expectancy ($p. < .01$). The authors concluded that the qualitative method was considerably more successful than the quantitative sign approach, that "the results obtained raise some pertinent questions of research methodology with projective techniques" (p. 77).

The role of the test interpreter seems to be a central issue in any dispute regarding research with projective techniques. Opinions vary as to the degree of importance which should be placed on the skill of the interpreting clinician. Meehl (1959) feels that a projective test should be amenable not only to its use by experts, but also by those with less experience. He does not deny, however, that the clinician's interpretations must be considered in projective validational research; "Such a procedure, which studies the final result of the clinician's cerebrations, seems to me to be an unavoidable part of validation" (p. 86). Mahoney and Krimsky (1957), from a more liberal viewpoint, place a great deal more emphasis on the clinician's interpretive function. They believe that a projective test provides only the raw material for interpretation and that the actual meaning of the test data depends primarily upon the skill of the diagnostician.

Two studies which stressed the interpreter's role in investigations of the Szondi test are those of Ray and Hill (1953) and Hammer and Piotrowski (1953).

Ray and Hill selected four advanced students in clinical psychology, each of whom had completed at least two years of study in projective methods, including the Szondi test. These students

were asked to match six unidentified "composite" Szondi profiles (each profile was the average of five Szondi test administrations) with six individuals who were professionally or socially known to the students. It was found that, as a group, the four clinicians' ability to correctly match the profiles with the individuals was not significantly different from chance expectancy. One of the clinicians, however, matched the profiles at a level closely approaching the .05 level of significance ($p < .07$). It was also found that the one individual with whom all the student clinicians were most familiar was correctly identified 100% of the time. The authors concluded that the clinicians' degree of familiarity with the individuals to be matched definitely influenced their capacity for accurate matching.

Hammer and Piotrowski (1953) conducted an experiment dealing with the relationship of the degree of hostility attributed to projective test subjects by six clinicians (on the basis of the subjects' House-Tree-Person drawings) with the degree of hostility attributed to the clinicians themselves by their supervisors. Susan Deri was also asked to rank the clinicians' Szondi profiles as to the degree of hostility indicated in the profile. A rank-order correlation of .94, with a standard error of .48, was found between the degree of hostility perceived by the clinicians in the H-T-P drawings and the degree of their own hostility as judged by their supervisors. The identical rank-order correlation and standard error was found between the supervisors' and Deri's ranking of the six clinicians.

In view of the last two studies cited, it appears that the role of the interpreter is a very important one in the meaningful use of the Szondi test. It seems apparent from Ray and Hill's research that interpreters vary considerably in their Szondi test interpretive skill; that some are seemingly better able to utilize the test than others. This point appears to be further illustrated by the findings of Hammer and Piotrowski's research. Deri, who would probably be considered the most skilled interpreter of the Szondi test in this country, was able to match a clinical criterion (supervisors' ratings) with a high degree of success.

The Problem

The present study is an attempt to take account of the holistic nature of the Szondi test and, in addition, utilize the interpretive skills of recognized experts with the instrument. The study will investigate the degree of agreement between the clinical judgments of experienced psychotherapists regarding the personality characteristics of (1) their psychotherapy clients and (2) their colleagues and acquaintances, and the independent judgments of Szondi test experts regarding the personality characteristics of these same subjects, as inferred from their Szondi test profiles.

It is felt that this combination of a quantitative and qualitative approach takes into account many of the variables which seem to be ignored in the majority of projective technique validation research. These variables include the role of the

test interpreter, the extremely complex nature of the data obtained from the Szondi test and the largely unknown interrelationships between such holistic data and the interpreters' inferential processes.

If there is agreement at a level significantly greater than chance between the therapist's direct evaluation of personality and the Szondi test experts' inferences based on the test profile, validity would be demonstrated.

CHAPTER II

METHOD

The study utilized two groups of subjects, each consisting of 15 individuals. Ten psychotherapists made clinical judgments of the 30 subjects, while four experienced clinical psychologists (post-Ph.D.) made independent judgments derived from the subjects' Szondi test profiles.

Subjects

Group I was comprised of nine females and six males who were actively involved as clients in a therapeutic relationship at the time of the data collection. None of these 15 subjects was considered psychotic by his respective psychotherapist nor had any been an in-patient in a psychiatric institution. The Group I subjects ranged in age from 20 to 44 years, with a median age of 30.25 years. They had completed from four to 125 hours of psychotherapy, with a median of 75 hours. Their educational level ranged from completion of the tenth grade to the possession of a college master's degree, with a median educational level of 13.75 years.

The second group of 15 subjects, Group II, was composed primarily of persons (psychologists, social workers, nurses, hospital attendants) who were themselves currently involved in the treatment of emotionally disturbed individuals. The primary basis

for their selection as subjects, however, was their being personally well-known by at least one of the participating psychotherapists. The Group II subjects ranged in age from 23 to 51 years, with a median age of 29.25 years. The educational level of the seven males and eight females in Group II ranged from completion of high school to possession of the doctorate in psychology, with a median educational level of 17.75 years. The length of personal acquaintance with the respective psychotherapist who made clinical judgments of the subjects ranged from five months to seven years, with a median length-of-acquaintance of two years, four months.

Psychotherapists

Ten psychotherapists were utilized in the study, of whom five possessed a Doctor of Philosophy degree in psychology, three Masters Degree in psychology and two Masters Degree in social work.

The five doctoral-level clinical psychologists had from three to ten years experience in administering and interpreting the Szondi test and from five to fifteen years general clinical experience. The three Masters Degree-level psychologists had from three to 20 years general clinical experience, with the most experienced one also having approximately ten years experience with the Szondi test. The other two Masters-level psychologists had only six months to one year experience with the test. The two Masters Degree-level social workers each had approximately five years general clinical experience, but only negligible contact with the Szondi test. Of the ten psychotherapists, seven were males and

three were females. All were personally and professionally acquainted with each other.

Szondi Test Experts

Four expert interpreters of the Szondi test took part in the study. All were doctoral-level clinical psychologists, with experience ranging from nine to 20 years in both general clinical activity and with the Szondi test. Although it is extremely difficult to establish a quantitative criterion for "expertness" with any projective technique, all the experts taking part in the research were recognized by their colleagues as being highly proficient in the interpretation of the Szondi test. The four clinical experts are all graduates of the Clinical Training Program in Psychology at the University of Oklahoma, which has included training with the Szondi test in its diagnostic curriculum for many years.

Materials

(a) The standard set of Szondi test photographs was utilized in the study. (b) A standard scoring profile (Appendix II) was used which allows for the Original and Shadow profiles to be completed on the same. (c) A two-page "personality-checklist" (Appendix III) was devised which permits the clinician completing it to respond with either "YES" or "NO" to a variety of descriptive phrases pertaining to the subject's typical "needs," his personality dynamics and structures and his primary "ego-defense mechanisms." In addition, the judging clinician is asked to check either a "high" or "low" confidence blank regarding his

personal degree of certainty in choosing the "YES" or "NO" category after each of the 29 items.

The checklist is comprised of two separate pages; on one page there are 16 descriptive phrases designed to represent the appropriate personality characteristics associated with a "plus" or "minus" score on each of the eight Szondi factors. These 16 phrases also permit the judging clinician to account for "open" or "ambivalent" Szondi factor scores, since he may check the pair of items for a given factor as both "YES" or both "NO". The 16 phrases were designed to be very similar to the descriptions of the Szondi factors as cited by Moser in the most recent formal presentation of the test (Szondi, Moser and Webb, 1959, pp. 36-37).

The other page of the checklist consists of items which deal with (1) the subject's typical personality structures and dynamics and (2) his primarily-used kinds of ego defense mechanisms. This page represents a more global clinical rating which is not specific to the Szondi test, but could plausibly be utilized in conjunction with a variety of other clinical techniques.

Procedure

As the first step in the procedure, each subject was administered the Szondi test by the author under the standard instructions as given by Deri (1949, pp. 8-12). In addition, the Shadow profile was obtained by having each subject choose the 12 "most liked" photographs from the 24 pictures not initially chosen as either "liked" or "disliked." These 12 photographs, along with the

12 remaining which were not chosen as "liked" were plotted on the Shadow profile in the same manner as on the Original profile. Thus, the Szondi test data collected from each subject consisted of two complete profiles, an Original and a Shadow. During each test administration, only the subject and the examiner were present. The data collection was completed during an approximately two-month duration; the time of each individual test administration depending largely upon the convenience and availability of the subject.

In the case of the Group I subjects, the test was administered following a regularly scheduled psychotherapy contact. Each subject's therapist was then given a blank personality checklist and asked to complete it in terms of his current judgments of the subject. This procedure was followed in order to attempt to account for the theorized high degree of variability of the Szondi test. However, in order to increase the probability that a given therapist could make a relatively objective judgment of the subject, a minimum two hour delay between the administration of the test and the completion of the checklist was specified. The therapists were also asked to complete the checklist prior to their next contact with a subject. It was felt that these specifications would allow a more objective judgment by a therapist, in that he would have sufficient time to become "disinvolved" with a client, but at the same time judge the client primarily in terms of the therapist's most recent impressions of him.

Regarding the Group II subjects, the test was administered during a normal working day; the personality checklist was completed

by the judging therapist during the same day. In every case, the judging therapist and the judged subject had daily personal contact due to their working relationship. Accordingly, the same minimum two hour delay was specified between the clinician's (therapist) last contact with the subject and his completion of the personality checklist.

The third step in the experimental procedure consisted of the Szondi experts filling out a personality checklist for each subject based only on the Szondi profiles, Original and Shadow, and sex and age information. The experts were also informed that none of the subjects were known to be psychotic and that some were currently undergoing psychotherapy while others were not.

Table 4 illustrates that each of the experts, designated as W, X, Y and Z, received profiles from both groups (I and II), although not in a strict "50-50" proportion.

Table 4

Distribution of Profiles to Experts

Expert	Group I	Group II	Total
W	5	3	8
X	3	5	8
Y	3	3	6
Z	4	4	8

N = 30

No attempt was made to randomize the profile distribution to the experts, since this depended largely upon the mutual availability of the subjects and experts.

Finally, the pair of completed personality checklists, one from the clinician, based on personal interaction and one from the expert, based on the Szondi profiles, were compared to determine the degree of agreement.

CHAPTER III

RESULTS

The experimental results are presented in four sections: (I) the results of chi-square analyses of the number of agreements and disagreements between the expert-therapist pairs for the total group of thirty subjects on each personality checklist item. The analyses are with regard to each item on each of the three separate item lists (Lists A, B and C) and in respect to the sum of agreements versus disagreements on each of the lists and with the lists combined (total of 29 items); (II) analyses of the number of agreements versus disagreements in regard to the two groups of subjects, Group I (therapists' clients) and Group II (therapists' colleagues and acquaintances). The analyses are presented separately for each item List (A, B and C) and for the total number of items. The third section (III) consists of analyses to determine (1) whether the proportion of agreements versus disagreements on each item list and for each of the two subject groups is related to the therapists' high or low confidence in their judgments and (2) a corresponding analysis with regard to the experts' degree of judgment confidence. The last analysis (IV) is designed to determine whether the four individual experts differed from each other in regard to their success in matching the clinical judgments of the therapists.

Section I

Table 5 illustrates the total number of therapist-expert agreements and disagreements for each item of the personality checklist. Since agreement between therapist and expert would be expected by chance half the time, chi-square values were computed for each item based on the expected chance value of 15, half the number of subjects.

Examination of Table 5 shows that there were 18 items which had agree-disagree levels in favor of agreements, two items of equal agree-disagree proportions and nine items which had a greater number of disagreements. There were three items upon which the therapists and experts agreed to a degree significantly above the chance expectancy of 15 agreements and 15 disagreements: items A7, A8 and A16 ($p < .05$). There are five additional items upon which agreement approaches the .05 level of significance ($p < .10$), items A14, A15, B1, B4 and B7. There is one item (A2) which is significant ($p < .05$) in a negative direction; the therapists and experts disagreed with each other on this item to a degree greater than would be expected by chance. There is also one item (C4) upon which disagreement approaches the .05 level of significance ($p < .10$).

Summation of agreements and disagreements for the items of each list (Table 6) indicates that List A has a significantly ($p < .05$) greater number of agreements as compared to disagreements. List B also has a significantly greater number of total agreements

Table 5

Therapist-Expert Agreement and Disagreement for all Subjects (N = 30) on all Items

Szondi Factor		Item Number	Agree	Disagree	Chi Square Value (1 df)
h	+	A1	11	19	2.13
	-	A2	9	21	4.80*
s	+	A3	15	15	0
	-	A4	16	14	.13
e	+	A5	17	13	.53
	-	A6	17	13	.53
hy	+	A7	21	9	4.80*
	-	A8	21	9	4.80*
k	+	A9	13	17	.53
	-	A10	12	18	1.20
p	+	A11	19	11	2.13
	-	A12	18	12	1.20
d	+	A13	15	15	0
	-	A14	20	10	3.33x
m	+	A15	20	10	3.33x
	-	A16	22	8	6.53*
		B1	20	10	3.33x
		B2	18	12	1.20
		B3	14	16	.13
		B4	20	10	3.33x
		B5	13	17	.53
		B6	16	14	.13
		B7	20	10	3.33x
		C1	16	14	.13
		C2	16	14	.13
		C3	16	14	.13
		C4	10	20	3.33x
		C5	14	16	.13
		C6	14	16	.13

* equals $p \leq .05$
x equals $p < .10$

Table 6

Therapist-Expert Agreement and Disagreement for Each Item List for all Subjects (N = 30)

	Agree	Disagree	Chi^2	C
Sum List A	266	214	5.62*	.39
Sum List B	121	89	4.87*	.35
Sum List C	86	94	0.35	
Sum Lists A and B	387	303	10.22**	.51
Sum Lists A, B and C	473	397	6.64**	.42

** equals $p < .01$
* equals $p < .05$

than disagreements ($p < .05$). List C has more total disagreements than agreements, but not significantly more than could be expected by chance. If total agreements-disagreements of List A and List B are compared with chance expectancy, the result is significant at the .01 level. In addition, when the total number of agreements versus disagreements for the total number of items (Lists A, B and C) are compared with chance, it is found that the chi-square value (6.64) is significantly greater than would be predicted by chance expectancy ($p < .01$). Conversion of tne chi-square value to a contingency coefficient, results in a C of .42.

Section II

As can be seen in Table 7, agreement on the two items comprising the hy factor (A7 and A8) was statistically significant

Table 7

Therapist-Expert Agreement-Disagreement for Szondi Factors (List A) for Groups I and II

	Group I			Group II		
Factor	Agree	Disagree	Chi^2	Agree	Disagree	Chi^2
h	10	20	3.33	10	20	3.33
s	10	20	3.33	21	9	4.80*
e	14	16	.13	20	10	3.33
hy	23	7	8.53**	19	11	2.13
k	11	19	2.13	14	16	.13
p	15	15	0	22	8	6.53*
d	17	13	.53	18	12	1.20
m	17	13	3.33	25	5	13.32**

** equals $p < .01$
* equals $p < .05$

($p < .01$) with respect to the Group I subjects, while the Group II subjects' distribution of agreements and disagreements did not differ significantly from chance expectancy. The therapist-expert pairs were significantly more successful with regard to the Group II subjects on factors s (items A3 and A4), p (items A11 and A12) ($p < .05$) and m (items A15 and A16) ($p < .01$).

With respect to the Group I subjects, the hy factor appears to be validated, while the p and m factors receive validational support with regard to the Group II, but not the Group I subjects.

From Table 8, it can be noted that there is a significant difference ($p < .05$) between Group I and Group II with respect to the frequency of agreement-disagreement on List A. Differences

Table 8

Therapist-Expert Agreement-Disagreement for Each Item List for Group I (N = 15) and Group II (N = 15)

List	Group I Agree	Group I Disagree	Group II Agree	Group II Disagree	Chi^2
A	117	123	149	91	8.63*
B	62	43	59	46	0.31
C	42	48	44	46	0.09

* equals $p < .05$

between Group I and Group II on Lists B and C were not significant. In relation to the above, for Group II subjects on List A, the frequency of agreement is significantly greater than would be expected by chance ($chi^2 = 14.02$, $p < .01$, $C = .69$). For the Group I subjects on List A, the distribution of agreements and disagreements is not significantly different from chance expectancy.

Section III

Table 9 shows the number of agreements and disagreements under the conditions of high and low therapist confidence with regard to the total group of subjects (N = 30) on Lists A, B and C and on the three lists combined. The chi-square values were computed utilizing two-by-two contingency tables (high-versus-low

Table 9

Therapist-Expert Agreement-Disagreement for Total Group (N = 30) in Relation to Confidence of Therapists' Judgments

List	Confidence	No. A	No. D	Chi^2 High vs. Low
A	High	160	136	
	Low	106	78	.39
B	High	78	59	
	Low	43	30	.31
C	High	53	56	
	Low	33	38	.08
Total Items	High	291	251	
	Low	182	146	.27

therapist confidence, agreements versus disagreements). Table 9 illustrates that therapist high or low confidence has no significant relationship to the number of therapist-expert agreements and disagreements. Analyses of Group I and Group II separately with respect to therapist confidence level also showed no significant differences in frequency of agreement-disagreement.

Table 10 illustrates the proportion of agreements-disagreements with high and low <u>expert</u> confidence, regarding the Groups I and II subjects separately and combined, on Lists A, B and C and on the total number of items. The chi-square analysis was computed in the same manner as with the preceding one (high and low therapist confidence), but with respect to high-versus-low <u>expert</u> confidence. Table 10 demonstrates that on List A expert

Table 10

Therapist-Expert Agreement and Disagreement for Group I (N = 15), Group II (N = 15) and Total Group (N = 30) in Relation to Expert Confidence Level

	Group	I			II			Total		
List	Conf. Level	No. A	No. D	Chi^2 H--L	No. A	No. D	Chi^2 H--L	No. A	No. D	Chi^2 H--L
A	High	73	61	4.01*	102	48	5.90*	175	109	10.81**
	Low	44	62		47	43		91	105	
B	High	37	18	3.20x	34	21	1.49	71	39	4.51*
	Low	25	25		25	25		50	50	
C	High	26	25	.61	23	26	.18	49	51	.13
	Low	16	23		21	20		37	43	
Total Items	High	136	104	7.39**	159	95	5.49*	295	199	13.16**
	Low	85	110		93	88		178	198	

H = High
L = Low
D = Disagreement
A = Agreement

** equals $p < .01$
* equals $p < .05$
x equals $p < .10$

high confidence is significantly ($p < .05$) related to agreement with regard to both Group I (C = .46) and Group II (C = .53), and that, with respect to the two groups combined, is significant at the .01 level (C = .51). Concerning List B, expert high confidence is related to number of agreements at a level approaching significance ($p < .10$) with Group I and, regarding both groups combined, is significantly related to agreement ($p < .05$, C = .36). Expert high and low confidence was found to have no significant relationship

with regard to agreement-disagreement on List C. With respect to the total number of items (Lists A, B and C combined), expert high confidence is significantly related to therapist-expert agreement with respect to Group I ($p < .01$, $C = .57$), Group II ($p < .05$, $C = .47$) and to both groups combined ($p < .01$, $C = .55$).

Section IV

It can be seen upon examination of Table 11 that there

Table 11

Comparison of Individual Experts' Success in Matching Therapists' Judgments for Total Group (N = 30)

Expert	List A		List B		List C		Total Items	
	A	D	A	D	A	D	A	D
W	63	65	31	25	28	20	122	110
X	77	51	34	22	19	29	130	102
Y	49	47	23	19	13	23	85	89
Z	77	51	33	23	26	22	136	96
Chi^2	5.07*		.51		6.21*		4.40*	

A = Agreement
D = Disagreement

* equals $p < .05$

are statistically significant differences between the individual experts' respective agree-disagree frequencies. These differences exist with regard to List A ($p < .05$), List C ($p < .05$) and the total number of items ($p < .05$). Concerning List B, no significant

differences exist. Upon examining the respective number of agreements and disagreements of the individual experts, it is apparent that Experts X and Z had considerably more success in matching the clinical criterion on List A and on the total group of items than did Experts W and Y. On List C, Experts W and Z were most successful, with Experts X and Y having more disagreements than agreements. On the total number of items, three of the four experts (W, X and Z) had more agreements than disagreements, although only one had more agreements than would be expected by chance. Expert Z, with 59% agreement with the different therapists, differs from chance expectancy at the 1% level, with a chi-square value of 6.90.

CHAPTER IV

DISCUSSION

The present study comprises an attempt to validate the Szondi test through the comparisons of the judgments of ten experienced psychotherapists, made regarding their psychotherapy clients (N = 15) and their colleagues and acquaintances (N = 15), with judgments by four Szondi test experts regarding the same subjects, derived from Szondi test profiles.

The experts' and therapists' judgments were compared via a three-part, 29 item personality checklist (Appendix III) consisting of descriptive phrases of opposite kinds of personality characteristics as defined by Szondi test rationale (List A), common kinds of personality structures and dynamics (List B) and typical "ego defense mechanisms" (List C). For each item on the check list, the therapists and experts were asked to indicate "YES" or "NO" as to whether, in their opinion, the statement or phrase applied to a given subject. In addition, they were asked to rate each item as to their respective high or low confidence in making that judgment. Demonstration of validity of the Szondi test would be effected if the frequency of therapist-expert agreements as compared to disagreements was statistically significantly greater than expected by chance.

It was found (Table 6) that there were significantly more agreements than disagreements by the expert-therapist pairs on the List A items ($p < .05$, $C = .39$), on the List B items ($p < .05$, $C = .35$), on the combined Lists A and B items ($p < .01$, $C = .51$) and for the total number of items ($p < .01$, $C = .42$). There were more disagreements than agreements on the List C items, but not significantly more than would be expected by chance.

These findings, indicating that experts using Szondi test profiles can match personality descriptions based on personal experience, constitute a general validation of the Szondi test.

Differences Between Item Lists. The therapist-expert pairs were generally more successful in reaching agreement with regard to the items of List A. Of the sixteen List A items, agreements were more frequent than disagreements for eleven. Three of the items (A7, A8 and A16) had significantly more ($p < .05$) agreements than disagreements. These three List A items are associated with the "plus" and "minus" aspects of the Szondi hy factor (A7 and A8, respectively) and the "minus" aspect of the m factor (A16). These items were the only ones found which attained the accepted 5% level of significance, in the direction of greater agreement. Disagreement between therapist-expert pairs at a level significantly greater ($p < .05$) than would be expected by chance occurred for one List A item (A2). This item is associated with the "minus" aspect of the h factor. Within the context of this study, the Szondi hy factor would appear to have been validated. Validation of the m factor also appears to exist, since summation of number of agreements

and disagreements for both aspects, "plus" and "minus," of the factor (items A15 and A16) results in a significant value (chi-square = 9.60, $p < .01$). Conversely, the h factor appears to be invalidated, since there are significantly more (chi-square = 6.67, $p < .01$) disagreements than agreements on the combined "plus" and "minus" h factor items (A1 and A2). With regard to the number of agreements versus disagreements on the List A items, there were significantly more ($p < .05$) agreements, indicating that, with regard to the descriptive phrases directly related to the Szondi test factors, the therapists and experts agreed at a level greater than would be expected by chance.

On List B, there were three items (B1, B4 and B7) which approached statistical significance ($p < .10$) in the direction of agreement. Overall, with respect to the List B items, there were significantly more ($p < .05$) agreements than disagreements. This indicates that the Szondi test experts' interpretations agreed with the therapists' judgments, as to whether the subjects possessed the listed personality traits, at a level greater than would be expected by chance. If the combination of Lists A and B is used, the frequency of agreements over disagreements is significant at the 1% level, with a contingency coefficient of .51.

On List C, three of the total six items were agreed upon more than disagreed upon, although none of the items differed significantly from chance. Overall, there were more List C disagreements than agreements, but not to a degree significantly greater than chance expectancy.

Concerning the lack of success by the expert-therapist pairs in reaching agreement on the List C items, there appear to be two possible explanations; (1) the Szondi test as interpreted by the experts is poorly related to identification of "ego defense mechanisms," (2) such general constructs are so hypothetical in nature that they are extremely difficult to reach agreement upon, due to differing individual conceptions of their characteristics and manifestations. In view of the significant degrees of success by the expert-therapist pairs on the other items, the second explanation seems most plausible.

On the total List A (Table 8), there is a significant ($p < .05$) difference between Group I and Group II; the Group II subjects having significantly more agreements as compared with disagreements than the Group I subjects. No significant differences exist between Groups I and II on Lists B and C, regarding the total agreements-disagreements for each item list.

It is apparent that the therapists and experts were more in agreement in their judgments of the Group II subjects (colleagues and acquaintances) than in their judgments of the Group I subjects (clients). There was greater therapist-expert agreement in regard to the Group I subjects only with respect to the hy factor items. All other differences (s factor, p factor, m factor and total List A agreements) were in favor of the Group II subjects.

The meaning of the hy factor (Appendix III) may explain why this factor was more successfully agreed-upon with respect to the Group I than with the Group II subjects. The hy factor is

related to the expression of emotions; "plus" hy (item A7) indicating expression of emotions in an exhibitionistic manner and "minus" hy (item A8) pointing to the inhibition of emotions. Such a difference in affect would likely be more apparent to a therapist in the close interpersonal relationship characteristic of therapist-client contacts, while less evident in the more interpersonally distant peer or acquaintance relationship. On the other hand, it seems reasonable that a therapist would be more objective in judging a colleague or acquaintance than in judging his client. Accordingly, a therapist could probably be more accurate in his judgment of a colleague or acquaintance, with regard to more subtle personality characteristics, than he could in making judgments of his clients. Such hypotheses are largely speculative, but are supported by the existence of some pragmatically-derived practices within clinical settings; therapists currently involved with clients seldom serve as psychodiagnosticians with respect to the same clients. Rather, they depend upon other clinicians to render such objective evaluations.

The findings of the analyses concerning the relationship of therapist and expert rating of high or low confidence appear to further support the preceding speculations. It was demonstrated (Table 9) that therapist confidence level has no significant relationship to distribution of therapist-expert agreement and disagreement. This lack of relationship was found with respect to all three item lists (A, B and C), to total number of items and with regard to both Groups I and II, separately and combined. However,

the high confidence of the experts (Table 10) was significantly related to greater agreement between the therapist-expert pairs. Accordingly, since expert high rating confidence, rather than therapist high confidence, is related to greater agreement, it seems plausible that the therapists' degree of objectivity, as suggested by their indicated feelings of confidence, is less than that of the experts.

The analysis dealing with the differing successes of the individual experts in matching the clinical criterion of therapists' judgments (Table 11) serves to point out the importance of an interpreter's skill with the Szondi test. The usefulness of the test appears to be determined and limited by the ability of the interpreter to draw accurate inferences from the test data. The analysis also serves to illustrate the difficulty in establishing a stable and accurate criterion measure with which to compare such a complex measure as that utilized in this study; Szondi experts' judgments.

Future Szondi Research: Suggestions. Although the present study has demonstrated that therapists' (clinical) judgments and Szondi experts' judgments may agree at a level significantly greater than chance expectancy, it has also been demonstrated that agreement does not approach a one-to-one relationship. Although there were found to be, of 870 matching possibilities, 473 agreements, there were nevertheless 397 disagreements by the therapist-expert pairs. It seems likely that a great many of these disagreements are directly related to the nature of the criterion, i.e.,

clinical judgments. Such judgments are necessarily influenced by the semantic differences between judging individuals. Consensus as to the operational meanings of such descriptive phrases and psychodiagnostic "labels" as used in this study is very difficult to obtain with any group of clinicians, despite common training and close personal association.

Regarding future Szondi validational research (and perhaps with regard to other projective techniques), the present research design might be improved through the following modifications: (1) individual and group discussion of the particular descriptive phrases, diagnostic "labels" and hypothetical constructs used, with the goal of reaching consensus as to their operational meanings. (2) The basic experimental design could be modified to provide greater control of semantic differences between various clinicians' individual frames of reference. This might be accomplished by utilizing a given clinician for both judging operations; judging therapy clients and colleagues through personal impressions alone and judging the same subjects from the Szondi test profile alone. The clinicians could also judge other clinicians' clients from the Szondi test profile, but without awareness as to whose clients were being judged. In this way, differing frames of reference could be eliminated as a confounding variable. (3) Finally, in order to further investigate the probable effects of therapists' non-objective and objective judgments, a group of subjects could be evaluated on a personality checklist by consensus of a group of clinicians who would not be involved in a therapeutic relationship with any of the subjects.

CHAPTER V

SUMMARY

The majority of past validational research with the Szondi test has been concerned with the investigation of the various logical intra-test assumptions of the instrument. Such studies, the plurality of which have found negative results, have not usually utilized the interpretive skills of clinicians expert with the test, thereby omitting a relevant variable in the use and understanding of such an holistic psychodiagnostic tool. In addition, the methodology often employed in past research has involved the inappropriate use of conscious criteria measures to investigate the theoretically unconscious dynamics operant in Szondi test behavior. Such criteria have usually not been concerned with utilizing seemingly more appropriate external measures with which to investigate the test's clinical usefulness.

The present study utilizes the clinical skills of ten experienced psychotherapists and four clinical psychologists who have demonstrated expertise in Szondi test interpretation. Thirty experimental subjects, fifteen of whom were currently undergoing psychotherapy with the ten therapists and fifteen of whom were therapists' colleagues and acquaintances, were administered the Szondi test under standard instructions. The psychotherapists,

using a 29 item "personality checklist," independently made 'yes-no', 'high-low confidence' judgments with regard to; (1) the applicability of 16 descriptive phrases directly related to the eight Szondi test factors, (2) each subject's possession of seven common personality structures and dynamics and (3) each subject's characteristic use of six kinds of "ego defense mechanisms." This criterion, the psychotherapists' judgments, was compared with the judgments of the four Szondi test experts, derived from their respective independent interpretations of the subjects' Szondi test profiles.

It was found that the combined experts' level of agreement with the therapists' judgments was significantly ($p < .01$, $C = .42$) greater than would be expected by chance. It was also found that expert high-confidence in judgment was significantly ($p < .01$) related to therapist-expert agreement. Therapist high-confidence was found to be unrelated to therapist-expert agreement. In general, agreement with respect to therapy clients was less than that with therapists' colleagues and acquaintances. It was hypothesized that therapists' relatively greater objectivity with colleagues and acquaintances influenced the respective levels of agreement with the two subject groups. Finally, the differential validity of separate Szondi test factors was examined.

Certain suggestions for future research with the Szondi test were made.

REFERENCES

Allport, G. W. Personality: a psychological interpretation. New York: Henry Holt and Co., 1937.

Aumack, L. The Szondi: internal or external validation? Perceptual and Motor Skills, 1957, 7, 7-15.

Bechtoldt, H. P., Construct Validity: a critique. American Psychologist, 1959, 14, 619-629.

Booth, K. G., A study of the factorial stimulus qualities of the Szondi photographs as measured by the semantic differential. Unpublished master's thesis (University of Oklahoma, 1967).

Crenshaw, David A., Bohn, Suzanne, Hoffman, Marlene R., Matheus, John M., Offenbach, Stefan, G. The Use of Projective Methods in Research. Journal of Projective Techniques and Personality Assessment. 1968, 32, 3-9.

David, H. P., Orne, M., and Rabinowitz, W., Qualitative and quantitative Szondi diagnosis. Journal of Projective Techniques, 1953, 17, 75-78

David, H. P., and Rabinowitz, W. Szondi patterns in epileptic and homosexual males. Journal of Consulting Psychology, 1952, 16, 247-250.

Davis, Elaine and Raimy, V. C. Stimulus functions of the Szondi cards. Journal of Clinical Psychology, 1952, 8, 155-160.

Deri, Susan. Introduction to the Szondi Test. New York: Grune and Stratton, 1949.

Deri, Susan. The Szondi Test: its application in a research study of depressive patients before and after electric-shock treatment. In L. E. Abt and L. Bellak (eds.). Projective Psychology. New York: Alfred Knopf, 1950.

Deri, Susan. The Szondi Test. Progress in Clinical Psychology. 1952, 1, Sec. 1, 222-233.

Deri, Susan. Differential diagnosis of delinquents with the Szondi test. Journal of Projective Techniques. 1954, 18, 33-41.

Dudek, F. J., and Patterson, H. O. Relationships among Szondi test items. Journal of Consulting Psychology, 1952, 16, 389-394.

Fancher, E. C. A comparative study of adolescents with the Szondi test. Journal of Genetic Psychology, 1956, 88, 89-93.

Fancher, E. C., and Weinstein, M. A Szondi study of developmental and cultural factors in personality: the seven year old. Journal of Genetic Psychology, 1956, 88, 81-88.

Fosberg, I. A. Four experiments with the Szondi test. Journal of Consulting Psychology, 1951, 15, 39-44.

Frank, L. K. Projective methods for the study of personality. Journal of Psychology, 1939, 8, 389-413. (Also in Trans. N. Y. Acad. Sci., 1939, 1, 129-132).

Freud, S The basic writings of Sigmund Freud. Brill (ed.) New York: Random House, 1938.

Goldman, G. D. The validation of the paroxysmal vector of the Szondi test. Journal of Abnormal Social Psychology, 1952, 47, 475-477.

Guertin, W. B. A consideration of factor loadings on the Szondi test. Journal of Clinical Psychology, 1950, 3, 262-266.

Guilford, J. P. An experiment in learning to read facial expression. Journal of Abnormal Social Psychology, 1929, 24, 191-202.

Guilford, J. P. Personality. New York: McGraw-Hill, 1959.

Hammer, E. F., and Piotrowski, Z. A. Hostility as a factor in the clinician's personality as it affects his interpretation of projective drawings (H-T-P). Journal of Projective Techniques, 1953, 17, 210-216.

Harrower, M. The first offender: a study of juvenile delinquents by the Szondi test. Szondi Newsletter, 6, 3, 1-16, 1958.

Hill, V. T. The Szondi test and chance. Szondi Newsletter, 1951, 3, 1-16.

Holt, R. R. An approach to the validation of the Szondi test through a systematic study of unreliability. Journal of Projective Techniques, 1950, 14, 435-444.

Kerner, J. Klexographien. Tubingen, Germany, 1857.

Klopfer, W. G. An investigation of the associative stimulus values of the Szondi pictures. Unpublished Thesis. University of California, Los Angelos, 1950.

Langfeld, H. S. The judgment of emotions from facial expression. Journal of Abnormal Social Psychology, 1918, 13, 172-184.

Lazarus, R. S. Adjustment and personality. New York: McGraw-Hill, 1961.

Lewin, Kurt. A dynamic theory of personality. New York: McGraw-Hill, 1935.

Lindzey, G. Projective techniques and cross-cultural research. New York: Appleton-Century-Crofts, 1961.

Logan, J. C. Szondi Profile Changes from Sorrow Arousal. Journal of Projective Techniques,1961, 25, 184-192.

MacCorquodale, K. and Meehl, P. E. On a distinction between hypothetical constructs and intervening variables. Psychological Review, 1948, 55, 95-107.

Mahoney,S., and Krimsky, M. Validity, interpretation, and the Szondi test. Szondi Newsletter, 1957, 6, 1, 7-12.

Meehl, P. E. Structured and projective tests: some common problems in validation. Journal of Projective Techniques, 1959, 23, 268-272.

Munn, Norman L. The effect of knowledge of the situation upon judgment of emotion from facial expressions. Journal of Abnormal Social Psychology, 1940, 35, 324-338.

Murphy, G. Personality. New York: Harper and Row, 1947.

Murstein, B. I. Handbook of Projective Techniques. New York: Basic Books, Inc., 1956.

Odes, Z. A study of experimentally induced changes in response to the Szondi test. Szondi Newsletter, 1950, 2, 1-14.

Osgood, C. E., Suci, G. J., and Tannenbaum, P. H. The measurement of meaning. Urbana, Ill., University of Illinois Press, 1957.

Rabin, A. I. Genetic Factors in the selection and rejection of Szondi's pictures: a study of twins. American Journal of Orthopsychiatry, 1952, 22, 551-556.

Rapaport, D., Gill, M. M., and Schafer, R. Diagnostic Psychological Testing, New York. International Universities Press, Inc., 1968.

Rapaport, D. Emotions and memory. New York: International Universities Press Inc., 1950.

Ray, J. B., and Hill, V. T. Szondi and matching probabilities. Szondi Newsletter, 1953, 4, 16-21.

Ray, T. S., and Oldroyd, C. R. Skin resistance changes and individual personality factors as reflected in the Szondi test: a pilot study. Szondi Newsletter, 1957, 6, 1-5.

Richardson, H. M. The discriminability of the "drive factors" represented by the Szondi pictures. Journal of Clinical Psychology, 1952, 8, 384-390.

Saunders, R. E., and North, A. J. The effect of an experimentally established frame of reference on the consistency of responses on the Szondi test. Szondi Newsletter, 1951, 3, 1-7.

Saunders, W. W. A methodology for the testing of two assumptions basic to Szondi test theory. Unpublished doctoral dissertation. University of Oklahoma, 1953.

Shneidman, Edwin S. Projective techniques. In Benjamin B. Wolman (ed.) Handbook of Clinical Psychology. St. Louis, McGraw-Hill Book Co., 1965, 498-521.

Spitz, C. Szondi test and age, studies of children from five to seven years. Szondi Newsletter, 1950, 2, 1-4.

Szondi, L. Experimental diagnosis of drives. Translated by Gertrude Aull. Bern: Hans Huber, 1947, New York: Grune and Stratton, 1953.

Szondi, L., Moser, U., and Webb, M. The Szondi test in diagnosis, prognosis and treatment. Philadelphia: J. B. Lippincott Co., 1959.

Vernon, P. E. The matching method applied to investiations of personality. Psychological Bulletin, 1936, 149-177.

Whitmyre, J. W. A comparison of Szondi ego-stage and chronological age in children. Szondi Newsletter, 1952, 4.

Wolff, Werner. The expression of personality: experimental depth psychology. New York: Harper and Brothers, 1943.

APPENDIX I

BASIC ASSUMPTIONS

Szondi

1. The eight diagnostic categories of the test represent basic, hereditarily-determined "drive states."

2. Both personality and manifest physiognomy are a function of genetic structure, as expressed through these eight basic "drives."

3. The photographed mental patients have a definitely diagnosed psychopathology; thus a definite genetic structure and personality.

4. The Szondi test subject responds to (chooses) the photographs in terms of the relationships between his own basic drives and those of the pictured patients, in a primarily unconscious manner.

5. The test subject's picture selections therefore constitute a basis for inferences regarding his basic drives and personality characteristics.

Deri

1. Personality characteristics are reflected in the physiognomy.

2. The basis of the test subject's responses are made in a largely nonconscious way and on the basis of a personal, affective reaction, i.e., as a means of reducing tension within his personal "need-system."

3. Each photograph within a diagnostic category is assumed to be essentially equal in "valence character;" or, equivalent in terms of the potential response elicited.

4. The eight diagnostic categories represented in the test can be considered to be extreme manifestations of personality characteristics which exist to some degree in everyone. More specifically, the pictures represent extreme degrees of "need-tensions" which are more or less present in every individual.

5. Frequency of selection within a given category is considered to be an indication of the extent of tension within the need system represented.

5a. A predominant number of "like" choices within a category is indicative of a process of identification of the need, an "acceptance" of it.

5b. A majority of "dislike" choices within a category constitutes a "counter-identification" or rejection of the need.

5c. The presence of both "like" and "dislike" choices in an approximately equal number represents ambivalence regarding the identification with or acceptance of the need.

5d. The relative absence of either "like" or "dislike" choices indicates a lack of tension within the specific need-area.

APPENDIX II

SZONDI TEST PROFILE

Szondi Record Blank

Name:_____ Age: _____

Sex: _____ M _____ Sing. _____ Sep. _____ D._____ W____

Highest Grade Completed _____ Occupation: _____

Examiner _____ Date _____

		S		P		SCH		C	
		H	S	E	HY	K	P	D	M
L	6								
	5								
	4								
	3								
	2								
	1								
D	1								
	2								
	3								
	4								
	5								
	6								

ORIGINAL

		S		P		SCH		C	
		H	S	E	HY	K	P	D	M
L	6								
	5								
	4								
	3								
	2								
	1								
D	1								
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	3								
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	5								
	6								

SHADOW

APPENDIX III

PERSONALITY CHECKLIST

(Please check YES or NO after each descriptive phrase, then the appropriate confidence level.)

NOTE: Judgments should be toward most typical, stable dynamics and behavior.

1. Sexually sensual, preference for receiving personal love. YES___ NO___ High ___ Low ____

2. Altruistic, tends to sublimate love to "love of humanity." YES___ NO___ High ___ Low ____

3. Physically active, aggressive; tendency toward sadism. YES___ NO___ High ___ Low ____

4. Passive, submissive, tends to be masochistic. YES___ NO___ High ___ Low ____

5. Self-controlled, self-limiting in thoughts and behavior; ethical. YES___ NO___ High ___ Low ____

6. Tends to "accumulate gross affects" (anger, jealousy, envy), with periodic discharge of such feelings. YES___ NO___ High ___ Low ____

7. Tends to seek approval, esteem; inclined toward exhibitionistic display of emotions, labile. YES___ NO___ High ___ Low ____

8. Tends to conceal emotions, inclined to be "shamefaced." YES___ NO___ High ___ Low ____

9. Tends to "internalize" or "incorporate" ideas and ideals. YES___ NO___ High ___ Low ____

10. Tends to deny or repress unpleasantness; inclined to depreciate self. YES___ NO___ High ___ Low ____

11. Tends to be consciously aware of feelings; inclined toward ambivalence. YES___ NO___ High ___ Low ____

12. Tends to project unconscious impulses to milieu, with little or no awareness. YES___ NO___ High ___ Low ____

13. Inclined to seek new and varied "objects of value;" tends to be ruthless. YES___ NO___ High ___ Low ___

14. Tends to adhere to old "objects of value" without seeking new constant, steadfast. YES___ NO___ High ___ Low ___

15. Tends to protect and "cling" to old "objects of value;" is usually optimistic. YES___ NO___ High ___ Low ___

16. Tends to be interpersonally "cool," detached expects little from others; pessimistic. YES___ NO___ High ___ Low ___

(Check one of each pair and appropriate confidence rating)

Please consider the below items (1-7) as "traits" rather than "diagnoses."

PERSONALITY DYNAMICS AND STRUCTURES

1. Hysteroid YES ___ NO___ High ___ Low ___
2. Obsessive-Compulsive YES ___ NO___ High ___ Low ___
3. Schizoid YES ___ NO___ High ___ Low ___
4. Narcissistic Character YES ___ NO___ High ___ Low ___
5. Paranoid YES ___ NO___ High ___ Low ___
6. Homosexual YES ___ NO___ High ___ Low ___
7. Psychopathic YES ___ NO___ High ___ Low ___

PRIMARY EGO DEFENSES

Confidence Rating

1. Repression YES ___ NO___ High ___ Low ___
2. Reaction Formation YES ___ NO___ High ___ Low ___

		Confidence Rating
3.	Projection	YES ___ NO ___ High ___ Low ___
4.	Acting Out	YES ___ NO ___ High ___ Low ___
5.	Intellectualization	YES ___ NO ___ High ___ Low ___
6.	Regression	YES ___ NO ___ High ___ Low ___