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Emotional tension in epileptic seizures.

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EMOTIONAL TENSION IN EPILEPTIC SEIZURES

by

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CHAPTER I

INTRODUCTION

In the literature on epilepsy one is apt to find the thesis advanced that some of the etiological factors of this mysterious disease are to be sought in largely psychological, non-organic processes which are supposed to have a direct bearing upon the economy of the body. Such a viewpoint was relatively common in ancient times, but seems to have undergone a revival since the establishment of psychoanalysis. Many psychoanalytic writers and many an advocate of modern psychosomatic medicine have attempted to establish the psychological content and meaning of epileptic convulsions, with a search for their etiology in a specific complex of emotional factors leading to a discharge of tension in the seizure.

Of various publications representative of this way of thinking a few typical ones may be cited. There is first of all Freud's analysis of Dostoevski, whose grand mal seizures, beginning in later life, were thought of as symbolizing his identification with his murdered father to whom he had once harbored strong death wishes connected with severe guilt feelings. Symbolic equations were established between the convulsive movements of the seizures and the expression of aggression, and between the state of unconsciousness in the seizure and the image of the dead father with whom the patient identified. In Freud's footsteps, Bartemeier has made an attempt to establish general functional parallels between normal psychological
phenomena and certain aspects of epileptic seizures. He created
equations between the jerky movements of convulsions and the normal
sleep starts; between "uncoordinated" convulsive movements and
infantile temper tantrums; between convulsive tongue-biting, grinding
of teeth and clenching of fists, and similar symptoms as manifestations
of oral-destructive impulses found in normals; and between the lapses
of consciousness in petit mal and the withdrawal from reality that is
found in hysterical paralysis. The conclusions drawn were that convul-
sions have to be seen as a general way of discharging destructive or
other energy autoplastically, its manifestation depending dynamically
upon the presence of a sufficiently high quantum of psychic energy and
the blockage of more suitable outlets. A similar conclusion was reached
by Hendrick (50) who studied the auras of two cases with convulsions
from a psychodynamic viewpoint. Mittelmann (70) reconstructs the psycho-
dynamics of the epileptic attack as escape from an unbearable situation,
forbidden sexual activity, a threat, an aggressive act, suicide, or
destruction and rebirth. For Jelliffe (55) the personality of epileptics
is dominated by sadistic and aggressive drives, whereas the seizure itself
represents the triumph of the death instinct. Quite generalizing is a
statement by Stekel, quoted by Lennox (62), who sees the epileptic as
distrustful, sly, a strong hater; this hate is carried into action by the
uninhibited, and to a convulsion in the inhibited person. Fenichel (38),
who is more careful in drawing conclusions about the etiology of epilepsy,
states nevertheless: "epileptics show very intense destructive and sadistic
drives which have been repressed for a long time and which find an ex-
plosive discharge in the seizure." All of these psychodynamic constructions
have one thing in common: the core of the epileptic personality setting is determined by strong aggressive impulses which find their discharge in the seizures.

These ideas are in striking agreement with the still prevailing layman's opinion and the popular belief of many centuries. Temkin (97) has amply documented the belief in the spirit of evil, demon possession etc. naively ascribed to the epileptic person and the epileptic seizure in the times before Jackson (53). The sight of an epileptic attack, especially the convulsive state in grand mal, has always suggested that the gross motor phenomena could only be an expression of psychological conflict with an essentially aggressive quality. Many current clinical ideas have retained this contention, with or without psychological sophistication, and relatively independent of the refined neurological observations and theory that followed the pioneerwork of Jackson.

Of note are the clinical studies by Clark (22), whose concept of "essential epilepsy" covers all those epileptic patients who are marked by supersensitiveness, excitability, and rigidity and who are apt to develop temper tantrums. Dawson and Conn (30) see in the seizure a disintegration of control over lower, more instinctive reactions. Eyrich (37) places the emphasis on the patients' explosive excitability and motor restlessness without a goal. Far Strauss, Rahm and Barrera (92) the epileptic personality is characterized by assaultiveness, destructiveness and episodic temper outbursts. Rosanoff's "epileptic type", quoted by Masserman (69), is called "impulsive, stubborn and aggressive."

From the literature reviewed thus far the conclusion can only be that the epileptic patient is traditionally seen as a person with an aggressive
conflict (with varying emphasis on drive-strength or inhibitory restraints) and the seizures as a sudden, abrupt discharge of aggressive energy. The wide spread of these notions is further substantiated by such authoritative textbooks of psychiatry as Kraepelin's (60) and Bleuler's (17). The former, though keenly aware of the differences between hysteria and epilepsy, laid in his clinical descriptions an extraordinary emphasis on the more marginal forms of epilepsy, where contamination with psychopathy and psychosis is apt to be formed. No wonder that in his clinical pictures irritability, moodiness and explosive rage reactions are so often mentioned as intrinsic features of the epileptic syndrome. But quite blunt seems the statement in Bleuler's text, that epileptics are as a rule psychopaths. Bleuler defines at length the so-called "epileptic personality" which is characterized by a morbidly strong emotional reactivity, together with an unusually long duration of any particular affect. Speaking about the causes of the individual seizures, however, Bleuler mentions anger as a common prodromal phenomenon, which does not elicit the seizure but is yet somehow a recurrent theme in the patient's symptomatology. It seems, then, that Kraepelin and Bleuler felt obliged from their observations to deal with the problem of aggression in epilepsy, without going as far as others, who saw aggression as the main psychodynamic determinant of either the epileptic character or the epileptic seizure.

But in sharp contrast to these statements is the evaluation of Alstrom (2). This author discussed the publication by Aring et al. (5) who hold that anger and rage were dissipated during seizures in patients whom they analyzed. Alstrom's comment, based on clinical and psychotherapeutic experience, is that if seizures had any psychotherapeutic effect on the patients this is probably due to the amnesia accompanying the attacks.
His own experience with epileptics has led him to the conviction that the epileptic seizure must, per se, lack any psychological symbolic meaning whatsoever. He admits, however, that emotional conflicts and problems of living with their resulting affective stress on the individual may in certain cases, particularly in psychoneurotics, contribute to a lowering of the seizure threshold and thus induce seizures.
CHAPTER II

PERSONALITY TESTS IN EPILEPSY

Clinical observations and psychoanalytic interpretations of cases are of restricted value insofar as they lack adequate possibilities for systematic verification. The advancement of personality tests, especially of the projective techniques, means in this respect one step forward on the way to a systematic assessment of personality variables that enter into the problems of the epileptic character and into the psychological factors that play a role in the seizures.

Especially with the Rorschach Test research in these areas has been carried out. Rorschach (83) lists extratensive experience type, with emphasis on C and even Cn, as one of the epileptic's test characteristics. In the interpretative framework of the test, these determinants suggest affective lability, emotional instability, impulsiveness and irritability. No specific interpretation of the type of emotion is given; the statement, however, that epileptics show despite their overt friendliness egocentric attitudes suggests that Rorschach saw the epileptic's emotion predominated by negative affect. Guirdham (48) substantiated Rorschach's findings with respect to the dominance of CF and pure C, and also observed the so-called "staccato phenomenon", by which he meant a waxing and waning of the interpretative flow, which parallels Bleuler's ideas about the staccato nature of the mental processes in epileptics. With Stauder's (88) large scale study, the epileptic personality as a constitutional type was investigated. His emphasis was on intellectual peculiarities inherent to epileptic dementia, and his test data suggested that the clinical observations of
irritability, explosiveness, moroseness of mood etc. were exaggerated. Altable's (3) study mentions among other factors aggressiveness of content and deficient intellectual control over the affective, emotional and instinctive spheres, the latter being derived from the predominance of pure C and CF in the psychogram. Moreover, Altable claims that the red color strongly affects the epileptic's emotions; in stating this he mentions explicitly, as an example, the effect of red on an animal as eminently impulsive and aggressive as a fighting bull. Arluck (6, 7) and Lisansky (66) however, each investigating the existence of typical epileptic modes of behavior and attitudes, found many indications of neurotic personality reactions, but their data did not substantiate the color-imbalance of the previous publications and they failed to indicate the predominance of aggressive impulses. Kelley and Margulies (56) published detailed Rorschach records of two cases. Infantile emotional impulses, almost unrestrained impulsiveness at times, were elements of one record that lead to the diagnosis of "not focal, but probably idiopathic convulsive states." The clinical diagnosis of this case mentioned among others that the patient "engages in a fist fight at the slightest provocation" and has "explosive outbursts of irritability and anger." The second case showed Cn and pure C, indicative of "primitive emotional reaction patterns." Direct aggressive reactions were inferred from GF and Cn: "he seems to be a rather helpless victim of his emotions." It is obvious that the clinical notion of an epileptic personality loomed in the background of the interpreter's mind when these Rorschach records were diagnosed, and the belief in the possibility of identifying epileptics from a Rorschach record can only stem from this a priori assumption.
Mention should also be made of Landisberg's (61) application of an unusually large test battery to epileptics, including the Thematic Apperception Test and the House-Tree-Person drawing test. Landisberg states that the patients vacillated between extrapunitive and intrapunitive responses to Rosenzweig's Picture Frustration Test, and concludes "this pattern was borne out by the patients' test-situational and general intra-mural behavior, where aggressive, impulsive outbursts were followed by deep feelings of guilt and need for self-abasement." The T.A.T. stories of these patients presented among others a need for retreat and withdrawal into quietude and sleep, a low frustration tolerance, and paranoid sensitivity. Body feelings of lifelessness, imbalance, and robot-like propulsion; irritability and low tension thresholds were indicated by the H.T.P. "Aggressive, impulsive outbursts, as though the patients were painfully striving for contact" were frequently observed. This study, as several others, concludes with the warning that no specific personality pattern typifies the epileptic.

One glance at the chapter on convulsive states in Klopfer and Kelley's Rorschach manual (57) convinces the reader that Rorschach studies have not borne out the recurrent notion of a typical epileptic personality with a particular set of psychodynamic factors; the particular emphasis of some Rorschach workers on the imbalance in the C columns, however, and its usual interpretation as indicating emotional instability and explosiveness, suggests some preoccupation with negative affect as to some extent typical of epileptics. But one has to realize that Rorschach's own attribution of affective lability and impulsiveness to the determinant C is at least partially influenced by his clinical notion of the epileptic
as coined in the Bleuler tradition and by his use of deteriorated epileptics as experimental subjects. Tables I - VII and XII of his "psychodiagnostic" contain the evidence that a traditional, clinical notion of epileptics has crept into the process of gauging his test empirically to various clinical categories. This is, of course, no valid objection to the practical workability of the test; but it shows that a priori notions with a possible bias and systematic error are not entirely excluded from the interpretative framework of projective tests. The great value of such tests as diagnostic tools is thereby not diminished, and their repeated usage will undoubtedly further refine their discriminatory efficiency. As compared with clinical observations and isolated case studies, projective tests in epilepsy have at least broken the monotony of the notion of the epileptic as an aggression-possessed individual. Meanwhile, the specific relationships between emotions or psychological needs and the epileptic seizures have not been clarified by personality tests. Kelley's (56) and Richards' (81) studies are the only ones which contain some information on this point, but their particular inferences from the data are speculative and such observations are scant.
Surprisingly few in number are experimental studies of personality dynamics and emotional factors in epileptic seizures. The only ones published in English are those by Barker (9, 10) and Barker & Wolff (11). Working within the framework of modern psychosomatic theory, the aim of these studies was to transcend the more permanent and static personality features and to elucidate the dynamic emotional constellations and the status of problems that might explain the occurrence of seizures. These studies, then, attempted to replace the notion of an "epileptic personality" by a more fluid and at the same time more specific set of personality variables which show a paroxysmal character, synchronous with the occurrence of the seizures, which are then seen as the organisms' responses to a specific kind of situational stresses. This seems a promising program, but the three studies hitherto published will not be very convincing to the critical reader. Four case histories are offered to demonstrate that the symptoms of narcolepsy can be viewed as a convenient interruption of consciousness in situations of intolerable stress. Such organismic responses could be evoked by skillful psychiatric interviewing, in which the patient was led to face an issue that was felt to mean an intolerable stress. In a study of petit mal attacks, Barker offers one case history to show that this type of seizure appears to be a specific response within the central nervous system which abolishes consciousness when awareness of the discrepancy in the immediate situation between consciously acceptable responses and the true unconscious reactions threatens to disrupt the patient's pattern of integration. As in the
case of narcolepsy, Barker emphasizes in this case the disrupting nature of hostile impulses, and his concept of "pattern of integration" appears to have a strongly moralistic slant. Each of these studies employs a mainly psychoanalytic method to uncover the paroxysmal emotional processes, but a new feature is added in that use is made of stress situations during the interview process in order to induce seizures and thus to experiment with this "organismic response pattern." Synchronized electroencephalographic recordings were used as a means to establish the "true epileptic nature of seizures thus induced."

Barker & Wolff's study dealt with the psychodynamics of grand mal seizures, and offered one case in which seizures could be elicited in the hypnoidal state following sodium amytal narcosis. Whenever rage began to break through inhibitory restraints the patient would respond with a typical grand mal attack, checked by EEG-recording synchronized with the psychiatric interview.

It was said that these experimental studies do not look wholly convincing. This is particularly due to the selection of cases which, aside from their statistically meaningless small number, contain such obvious neurotic features, especially hysterical characteristics, that generalizations from these experiments to "the epileptic" becomes a hazardous undertaking. A second reason for the intrinsic weakness of these studies is, that the integration of the patient's behavior during the analytic investigation is in terms of a rather fixed set of psychoanalytic notions; there is little to suggest an unbiased obser-
vation, and precise descriptions of what happened during the interviews are lacking. An all too easy equation of convulsions ans anger or hostility, for which "proof" is found in post hoc introspective reports of the subjects, lies at the heart of the reasoning in these studies. Yet, the importance of such experimental work cannot be annihilated by a criticism of the technique used; the less so since many clinical investigations are inevitably of an approximative character. To the present reviewer this importance lies chiefly in the determination of the experimenter to study the paroxysmal aspect of certain personality variables, and to drop for the time being the unresolved problem of the more permanent and static factors that enter into the various notions on the epileptic personality. If one wants to understand the psycho-dynamics of the epileptic reaction, the seizure itself should be the field of investigation.
CHAPTER IV

DEFINITION OF THE PROBLEM:
SZONDI's AND IERI's THEORIES OF EPILEPSY

It was shown in the foregoing chapters that psychiatrists and psychologists have been greatly concerned with the appropriation of psychological factors to a disease that is usually classified as a neurological abnormality with symptoms that seem largely determined by peculiarities in the functioning of the central nervous system. This is in itself no cause for alarm, because it is only to be expected that a disease with as grave an impact on the individual life of the patient as epilepsy will inevitably modify to some extent the habitual behavior patterns of its victims. No bodily disease is absolutely without impact on the psychological equilibrium of an organism. But unfortunately, in the case of epilepsy the physical and the psychic aspects of the patients' behavior have not always been given their proper weights and places, and etiological confusion was, and still is, frequent. This confusion has been mainly one between epilepsy and hysteria, culminating in the nosological monstrosity of "hystero-epilepsy." All too often investigators have felt tempted to "explain" an epileptic seizure fully by uncovering a number of psychological processes that were suddenly terminated or abruptly changed in their course by the somatic manifestations of the seizure. Such reasoning may be justified in the case of hysteria - when applied to epilepsy it betrays the fallacy of "post hoc ergo propter hoc." For the purposes
of our study we will clearly distinguish between epilepsy and hysteria by means of the following quotation from Cobb (23, pp.1010 - 1011):

"Epilepsy is a disorder of the brain that causes repeated fits in which the usual functional abnormalities are: (1) changes in the electrical potentials as seen in the electroencephalogram; (2) partial or complete loss of consciousness; (3) nervous discharge into smooth muscle, striated muscle or glands, causing involuntary visceral or motor behavior. Having thus described as well as I can what these cases are, I wish to explain what they are not, i.e. Hysteria: a syndrome with widespread disturbances occurring usually in women of childish habitus and immature personality. The essential symptoms are psychological conversion and amnesia. I thus make it perfectly clear that hysteria is a diagnosis to be arrived at by positive observation, not by elimination.... The two conditions are distinct and clinically recognizable; they should cause no confusion; of course, like any other two disorders they may occasionally occur together in the same patient."

The application of these criteria (further refined for the category of epilepsy) will allow us to look at epileptic phenomena from a combined psychic and somatic point of view, while for the time being bypassing etiological considerations. We thus accept the obvious dichotomy of nature yielding two classes of phenomena which we call psychic and somatic, without concern at the present for their possible metaphysical relationships which lie beyond the legitimate scope of science. In so doing, psychic and somatic processes can be seen as concomitant in time and the two series of data can be correlated.

We are now in a position to summarize the foregoing chapters more neutrally, by saying that many clinicians, psychiatrists and psychologists have, with greater or less scientific reliability, observed a concomitance of abnormal psychological processes with the grossly abnormal somatic (i.e. neurological) processes that are the earmarks of epileptic
seizures. More specifically, a concomitance of violent emotional discharge and neuronal discharges of some kind was felt to exist, and among these emotional release processes a major role seemed attributed to aggression (rage, anger, hostility, resentment etc.). A general textbook like Alexander's "Psychosomatic Medicine" (1) expresses the same conclusion: "in all three diseases - epilepsy, hypertension and migraine - destructive, hostile impulses play an important role."

Yet, despite this fairly great unanimity of opinion, which coincides moreover with the popular belief of many centuries, it may be said that hardly any systematic study has raised this observation beyond scientific doubt. The observation of clinical experts may be backed by a wealth of experience and marked by shrewd perception, but it remains incidental and is always determined by the "personal equation." Psychotherapeutic data are notoriously influenced by the theoretical orientation of the therapist and are also based on rather incidental observations with little scientific "openness." And finally, the tools for systematic studies that psychology has hitherto offered with regard to the role of psychic factors in epilepsy have produced a shift in the problem itself: the most widely used Rorschach Test could uncover important variables of personality, but failed to assess those psychic processes whose course is paroxysmal and synchronous with the paroxysmal behavior of the epileptic soma. The emphasis thus came to lie on more or less durable aspects of a subject, of which the possible relationships
to paroxysmal behavior could at best be guessed in a vague way, but not systematically explored. But before one can enter into a fruitful discussion of psycho-physical relationships in epilepsy a parallelism in time between psychic processes and somatic processes should be clearly established. The paroxysmal course of the somatic processes is self-evident since it results in the seizure; what remains to be demonstrated then is a paroxysmal alteration of psychic conditions synchronous with the observable seizure. In view of the complexity of this biological problem, all clinical studies, including the most sophisticated ones, are bound to be only approximations. But to the view of the present writer the meager results of studies with psychological tests are also due to the fact that most investigators have failed from the outset to state their problem in concepts of basic psychological theory. The following paragraphs are the writer's attempt to find suitable concepts for stating the present problem.

The development of psychological theory during the last two or three decades has shown an unambiguous trend away from static concepts to a conceptualization of dynamic factors. Terms like drive, need, resistance, tension, instinct etc. are a case in point and are clearly action-oriented. This has been notably so in personality theory where, even when structural concepts are inevitable, the emphasis is clearly on the functional relationships between structural units. It is in keeping with this theoretical development that the term "need" has come to replace several of the older associationistic elements of the Wuerzburg school and its predecessors, and grown into a concept that, one
way or another, denotes a most fundamental personality factor, that can truly explain certain aspects of behavior.

The importance of this key concept in psychology is seen by Gardner Murphy (71) who writes: "... all activity is traceable to tension, tension is need for acting, and tension, need and motive are one and the same." (71, p.89). For H.A. Murray (72) the concept of need is one of the corner stones to his "need-press" theory of behavior. He attributes to this "hypotheical construct" a typical directional and qualitative aspect (determining the course between a beginstate and an endstate of a behavioral episode) which differentiates one need from another, as well as an energetic or quantitative aspect. The latter may be estimated in a variety of ways, among others by such psychological tools as the Thematic Apperception Test. Carl Rogers (82) states in his latest book on personality: "behavior is basically the goal-directed attempt of the organism to satisfy its needs as experienced, in the field as perceived." (82, p.491) Murphy as well as Murray, however, go beyond the phenomenal scope of their concept of need by introducing the psycho-physical relationships that enter into the search for a somatic origin (visceral etc.) and even the probable somatic locus of needs. This attempt to anchor psychological concepts speculatively in physical or physiological data constitutes a danger for an objective study of clinical psychosomatic correlates such as we aim at for the epileptic phenomena. In our etiologically neutral approach we use the concept of need simply as a hypothetical construct, as a necessary inference from
behavioral data, without for the present any further implications as to the ultimate source or origin of needs. This position seems in keeping with the theory developed by Kurt Lewin (63, 65) to whose early reformulation of psychological notions (especially those created by the Wuerzburg school) much of the present popularity of the need-concept is due. It is, indeed, in terms of Lewinian field theory that we wish to structure aspects of the clinical problem that faces us.

With this frame of reference we conceive of an individual's personality as consisting in a number of more or less distinct needs, each employing a part of the psychic energy that a person has somehow at his disposal. Such needs differentiate the inner aspect of a person into a system of inner-personal regions, separated by boundaries of a certain sturdiness that may vary from fluidity to rigidity. But the concept of need is a dynamic construct: whenever a psychological need exists, there is a system in a state of tension within the individual. For Lewin (64) tension has the following properties:

(a) it is a state of a system $S$ which tries to change itself in such a way that it becomes equal to the state of its surrounding systems $S_1, S_2 \ldots \ldots \ldots S_6$ etc.

(b) it involves forces at the boundary of the system $S$ in tension.

These statements also imply that the tension in a system $S$ has to be determined always relative to the tension of its neighboring systems. Such tensions have an influence upon the perception of the individual; they create a selectivity in the perceiving of environmental objects that endows some objects with a valence, i.e. a positive or negative, or ambivalent psychological value of a greater or smaller nature.
The concept of tension, then, is closely related to that of need. Lewin points out that one can correlate to a need in the state of hunger a system in a state of tension. The satisfaction of the need corresponds to a release of the tension within the system.

It is against this general theoretical background that Susan Deri wrote in recent years her "Introduction to the Szondi Test" (33) as an attempt to introduce this European newcomer among the so-called projective tests to the English-reading public. This psychological test and its theory, heretofore only accessible through the manual, in German, by its originator Lipot Szondi (95), and only very recently translated in English (96) are of particular interest to our problem in two respects. In the first place because Szondi and Deri would seem from their writings to be strict adherents to the theory according to which epileptic seizures are, from the psychological viewpoint, the result of a gradual process of pre-paroxysmal build-up of tension in certain psychic needs which find a sudden, abrupt release or discharge in the paroxysmal event of the seizure. Though we shall attempt a detailed discussion of the Szondi Test and its theoretical framework in the next chapter, it is appropriate at this point to take cognizance of the following quotations from the German manual which form a concise statement of Szondi's viewpoint:

"In epilepsy one has to distinguish between two phases: 1) the phase immediately following the seizure, diagnosed by the post-paroxysmal syndrome; 2) the phase between two seizures, typified by the inter-paroxysmal syndrome."

(88, p.93)

In his analysis of the post-paroxysmal test syndrome, Szondi remarks:
"(E - open) .... a state of discharge of the need to accumulate crude affect such as rage, hate, anger and vengeance, to be eventually released paroxysmally, or explosion-like. (HY - minus) .... after the discharge the epileptic becomes very bashful, he wants to hide from the eyes of his environment; he is ashamed."

(95, p.93)

And somewhat later on the same page, in discussing the test-reaction

S plus, loaded, Szondi writes:

".... this is proof of the conception that from the viewpoint of drive psychology the epileptic seizure serves as an emergency-exit from instinct dangers which are caused by the non-gratification of an enormously strong aggressive need. The instinctual roots of the personality of the epileptic are closely related to those of a murderer. Epileptics often yield the typical murder syndrome."

(95, p.93)

Throughout Szondi's text, especially in connection with the so-called E-factor of his test, one finds furthermore frequent allusions to a well-known version of the old theme of the "epileptic personality" which brings the psycho-dynamics of epileptic seizures in clearer relief. In these, the epileptic is seen as an individual whose motivation, thought and behavior oscillates between two extremes: on the one hand a strong desire to be overly good and ethical, devoted to religious ideals and aspirations, almost abnormally pious, and possessed by a missionary spirit; on the other hand the need to accumulate strong affect with a negative feeling tone and an anti-social character, such as rage, hate, anger, wrath and revenge. These extremes of goodness and badness, each pursued to a pathological, irrealistic degree, are felt to be the two poles of the epileptic character, and it is believed that the patients' behavior alternates between them in synchrony with the rhythm.
of their seizures. This notion is fully shared by Deri, who writes:

"The interpretation of the E-factor is centered in this paroxysmal storing up and sudden release of energy. In the Szondi test, epilepsy is interpreted psychologically as the purest manifestation of aggressive outbursts. This conception of epilepsy coincides with that of Freud as it is expressed in his 'Beyond the Pleasure Principle'. The epileptic's mounting aggressiveness, accompanying the approach of seizure, is well known to all clinicians dealing with epileptic patients. There is an increasing irritability and motor restlessness which sometimes reaches a point at which epileptics feel a compulsion to injure people in their environment. This period of aggressiveness is terminated by the actual attack, which is followed by coma. The next stage comprises the so-called inter-paroxysmal period, characterized by the epileptic's strict emotional control of his aggressive tendencies. The E-photographs in the test are portraits of epileptic patients in this controlled inter-paroxysmal period. In this stage, the epileptic patients are overly good, religious and helpful. The term "morbus sacer", denoting epilepsy in the old European textbooks of psychiatry, intends to express just this aspect of the epileptic character. Again, clinicians who have had experience with epileptic patients know very well that the kindness and helpfulness of epileptics has something of a "sticky" and forced quality. One can almost sense the degree of energy spent on retention of this strict emotional control which probably serves the same dynamic purpose as a reaction formation.... All these details need mention because interpretation of the E-factor is based completely on the assumption that the E-factor relates to the control and discharge of aggressive energy and, therefore, reflects those aspects of personality which are closely bound to the development of the superego."

(33, pp.88 - 89)

These quotations leave no doubt about the viewpoints of Szondi and Deri concerning epilepsy and the occurrence of epileptic seizures in patients. But what gives these authors a place in this chapter is a related aspect of their work, namely their claim that certain features of the Szondi Test have given experimental evidence of their contentions about the psychodynamic aspects of seizures.

Perhaps Szondi's clearest statement on this matter is given in his
description of the so-called "loaded reaction" to his test. Though we shall deal with the technique of the Szondi Test in a subsequent chapter, one has to know at this point that the Szondi Test is designed to measure the proportional strength of eight psychic needs by means of counting the number of test responses to a corresponding series of eight test factors represented by 48 photographs. For each factor, the number of responses may range from zero to six, but the total number of responses to the test as a whole is fixed at twenty four, such that the chance expectation of responses to each factor is three. The number of responses within each factor is called "loading", and this is felt to be a measure of the relative strength of the corresponding psychic need. Against this background, any marked deviation from chance expectation of loading in a factor acquires a diagnostic significance in such a way that high loading in a factor is felt to mean high tension in the corresponding need while low loading in that factor means low tension in the need. Thus, loading is a gauge to measure need-strength and it is the distribution of loadings in the eight test factors (at an interpretative level: the proportionate strength of eight needs, or in Lewinian terms the relative tension in eight inner-personal regions) which enables the diagnostician to arrive at a dynamic personality description of a subject. One of the test factors is labeled "epilepsy" and is felt to represent the need to accumulate aggressive energy and to exert the utmost control over its behavioral manifestation. Obviously, this particular interpretation of epilepsy is a direct consequence of Szondi's notion of a typical epileptic personality whose main psychic problem would lie just in this matter of
control of "badness" tendencies, by means of reaction formation etc.

But Szondi claims he found empirically that the two phases of the epileptic character syndrome are reflected in the loading of his E-factor as obtained on epileptic patients: in the inter-paroxysmal phase a patient would yield a loaded reaction in E; in the post-paroxysmal phase a patient's loading would be markedly reduced and fall below the theoretical average of three. Szondi illustrates this phenomenon by means of a series of successive test profiles obtained on one patient, discussed on pages 40-42 of his manual. And Deri, in discussing the interpretative framework of the Szondi Test, writes on the E-factor:

"If the open E constellation occurs as part of a changing pattern, i.e. loaded minus E constellations alternating with open constellations, some kind of paroxysmal outburst was most probably taking place between the two states. This pattern is also characteristic for real epilepsy, although the change in the E-factor alone is not enough for diagnosis. Real epilepsy is associated with plus S and minus M constellations and a weak ego, in addition to its association with the changing E-constellation."

(33, p. 96)

Deri's discussion of the HY-factor of the test adds to this:

"The relationship between epilepsy and hysteria is mentioned more and more in modern psychiatry. In psychopathic hospitals, the diagnosis 'hystero-epilepsy' is made rather frequently to indicate that motor seizures resembling epilepsy are believed to be reactions to disturbing emotional experiences. The part emotional experiences play in inducing epileptic seizures is being recognized more and more by psychiatrists. Thus the differentiation between epilepsy and hysteria often becomes a matter of arbitrary decision. It was just this similarity of hysterics to epileptics, in regard to emotional explosiveness accompanied by motor discharge, which led Szondi to categorize hysteria as well as epilepsy in the paroxysmal vector. Since both diseases have in common a certain unpredictability of emotional manifestations, both may be formally characterized as disturbances in the sphere of emotional control. Of course, the quantitative as well as qualitative differences between emotional
explosiveness corresponding to the HY and explosiveness corresponding to the E-factors must be kept in mind as corresponding to the difference in the quality of the emotions in the H and S factors respectively. The finer emotions, oriented toward a logical object, find expression through the HY factor; and just because the content of the HY is this non-aggressive libido, its explosiveness takes place on a quantitatively much smaller scale than that of the E. The explosiveness of the HY consists of a frequent oscillation in the manner in which affection is displayed; thus, instead of violent paroxysmal outbursts, there is exhibitionistic discharge of smaller amounts of libido."

(33, pp. 97 - 98)

A further stress on the essentially aggressive nature of epileptic paroxysms is given in Deri's case interpretation, which contains the following sentences:

"...Besides schizophrenic symptoms there must be some serious type of paroxysmal disorder, yet real epilepsy can be excluded on the following basis: in case of grand mal seizures, one would expect occasional draining of the S-factor (aggression-factor; writer) The ego picture of epileptics is expected to be primitive, reflecting a poorly structured infantile ego, yet not showing those types of "mirror"-changes which imply that the core of the process takes place within the ego functions and not through the motor system proper (as in the case of grand mals)."

(33, p. 332)

Aggression is thus felt to be a central psychological determinant in the epileptic character and in the production of epileptic seizures. A few further quotations may further substantiate this notion. In her discussion of the factor constellation H-plus and S-minus she writes:

"...a counter-indication for real epilepsy (great motoric seizures) and manic psychosis." (because of the meaning of this constellation as an indicator of repression of overt aggressiveness; writer)

(33, p. 85)
And aggression is given an even more dynamic place in the personality setting of epileptics in Deri's treatment of the H-plus, S-minus factor constellation:

"...is most frequently found in mania, hypomanic excitement, or in epilepsy, all of these disorders being characterized by a strong need for motor discharge."

(33, p. 81)

Both Szondi and Deri, then, believe not only in the existence of a typical epileptic personality as an inherent part of the total epileptic syndrome, but they have also advanced a dynamic theory that links aspects of this personality with the occurrence of individual epileptic seizures in the patients. Their theory may be briefly rendered in the following statements: (1) the epileptic is possessed by tendencies towards "badness" and can escape these only by means of reaction formation which produces an unusual, neurotic "goodness" in seizure-free periods; (2) aggression is thus barred from overt expression and is kept under strict control within the personality, where it may accumulate; (3) at some time or other, but mainly as a consequence of excessive accumulation of need-strength, aggressive needs reach such an intensity that the habitual control mechanisms fail and the need breaks through, manifesting itself in motor behavior; (4) this behavior is the epileptic seizure itself, which is thus on the one hand an expression of "badness" tendencies of the individual, and on the other hand a means whereby a new psychodynamic equilibrium is achieved after abrupt release or discharge of disturbing quantities of aggressive energy in motor behavior. Especially in Deri's descriptions of this process,
utilizing a Lewinian conceptual system, epileptic seizures thus coincide with a sudden, purposeful redistribution of tension in various inner-personal regions or needs. Synchronous with the clinical seizure, there is felt to be a psychic paroxysm, as the abrupt outcome of a gradual build-up of tension in specific psychic needs, such as aggression.

Szondi designed his test in such a way that it supposedly would become a sensitive tool for the registration of just these "epileptic" needs and others that are felt to play a predominant role in psychopathologic personality functioning. This would make the test a fascinating instrument since one would expect it to acquire with further refinement a nearly predictive power with respect to the closeness to a seizure of any epileptic patient. It is essentially this claim which Szondi seems to have formulated in his test manual, but which he — unfortunately — has not adequately substantiated. His "demonstration" of the dynamic processes of seizures, and his "proof" of the aforementioned psychodynamic theory of seizures, consist of a presentation of successive test profiles obtained on one single case, from which, moreover, the most elementary data concerning the medical or neurological aspects of the patient are lacking. The evidence may at best be called promising or suggestive; at present the theory is far from systematically verified.

Szondi's and Deri's notions seem at present the most explicit formulation of what may be called the psychosomastics of the epileptic syndrome. Moreover, the Szondi test is in one respect directly based on these notions and geared at an adequate registration of the changing need patterns.
which constitute the psychosomatic cycle of epileptic patients. It is because of this twofold character of the test, i.e. its registrative powers as purported, and its interpretative framework which is favorable to deep-level interpretations of psycho-dynamic processes, that it may be considered a promising tool to uncover something of the mystery of the epileptic's emotional household and the incidence of his seizures.

The foregoing quotations as well as other explicit statements in Szondi's and Deri's texts permit the formulation of testable hypotheses which can be systematically checked. Another feature of the test, namely the ease with which it can be administered successively with short intervals to the same individual, permits an experimental technique that is more and more felt desirable in the proper study of psychopathological processes. We aim at the follow-up study or longitudinal technique, recently advocated by Diethelm (35) who writes: "There is no doubt that at the present state of our knowledge the most reliable results are obtained by retesting repeatedly the same individuals whom one has studied well." (35, p.100)
CHAPTER V

THE PRESENT STATUS OF THE SZONDI TEST

Among the projective tests developed in recent years for the purposes of psychodiagnosis and psychological research, the Szondi Test is in many respects unique. Since the original manual of this test (95) has only very recently become available in the English language (96) and only one introduction by Szondi's co-worker Deri (33) appeared earlier in this country, a brief description of some of the essential features of this test may be given here. This description is taken mainly from Szondi's text, although some references are also taken from Deri's book.

The test material consists of forty-eight photographs, each representing the face of a patient suffering from a psychiatric disorder. They are divided into six sets each of eight photographs, and in each set the following disorders are represented;

- homosexual (h)
- sadist (s)
- epileptic (e)
- hysterical (hy)
- catatonic schizophrenic (k)
- paranoid schizophrenic (p)
- manic-depressive depressive (d)
- manic-depressive manic (m)

These series of pictures are presented to the subject consecutively and he is asked to select from each set the two people whom he likes most and the two people whom he dislikes most or likes least. The subject thus comes out with $6 \times 2$ choices in the category "like" and an equal number of choices in the category "dislike"; in the test
language called "plus" and "minus" responses respectively. The various choices made are then entered into a test blank, containing a graphical picture of the distribution of choices in the eight factors. The administration of the test is repeated a number of times, with intervals at the choice of the examiner, usually at least twenty-four hours. In so doing one obtains a set of profiles, each representing a subject's choices for each category of pictures for any testing period.

The eight disease entities from which the subject is made to choose are thought of as corresponding to eight different psychological needs in the organism, acting as driving forces and intertwined in such a way that they lead to specific behavior patterns typical of the individual. At this point, Szondi has done his test-construction in close contact with his genetic theory of the "latent-recessive genes" (94) which assumes that an individual's fate in life is, roughly speaking, prede­etermined by the activity of gene-constellations that are the carriers of specific psychic processes. This assumption, however, need not be subscribed to by anyone who used the Szondi test, and in fact there are few Szondi workers aside from Szondi himself who take this gene theory seriously. Suffice it to say, that the eight categories of pictures represent each in extreme form a person who suffers from any of the afore­mentioned psychiatric disorders and who has hence a particular need pattern. The following scheme, taken from Szondi's manual, summarizes the predominant needs thought to be characteristic of patients suffering from these disorders:
(h) homosexuality
- need for tenderness, yielding, passivity, femininity, motherliness

(s) sadism
- need for aggressive manipulation of objects; sadism, masculinity, fatherliness, activity

(e) epilepsy
- need to accumulate negative affect: rage, hate, anger etc.

(hy) hysteria
- need for exhibitionism and display or expression of tender emotions

(k) catatonic schizophrenia
- need for ego-maintenance, to keep up the ego's narcissistic integrity and separateness from the environment; ego-systole; material ego

(p) paranoid schizophrenia
- need for ego-expansion, to fuse into environmental objects; ego-diastole, spiritual ego

(d) depression
- need to obtain objects; possessive, anal type of object relationships; search for new objects

(m) mania
- need to cling to old libidinal objects; orality, securing and conserving existing attachments

A search for the ultimate nature of these needs and for possible somatic processes which form their correlates is at present speculative. But some of the properties of needs, especially their dynamic significance for the behavior of the person, have been clarified by Kurt Lewin's vector psychology: depending upon the state of tension in the various need systems of an organism, certain environmental objects acquire a valence character (Aufforderungscharakter). This can be transposed to the Szondi test: depending upon the degree of tension at any given time in each of the above mentioned needs, the corresponding photographs will acquire a valence character of some proportion. A great number of choices for one
picture category (i.e. factor) will mean that the corresponding need in the choosing individual is in a state of great tension, seeking discharge or release. Due to the test instructions and the conceptual framework of the test, the Szondi test is designed to reflect the quantitative distribution of tension in eight specific need systems and the way in which the subject handles these tensions. Since each choice is either positive or negative ("like" or "dislike") the valence of each Szondi factor is not only quantitatively assessable but has also a place on a qualitative scale which varies from attraction to repulsion. Valences are not only strong or weak, but are also positive or negative, or - at an intermediate level - ambivalent. Szondi's four possible choice reactions ("open", positive, negative and ambivalent) are in reality a combined quantitative and qualitative index of a subject's need tensions plus the attitude (acceptance, rejection or ambivalence) of the subject towards each need.

Although our primary interest within the scope of this study is not in the diagnostic capacities of the test, the fact that we chose the Szondi test and Szondi's theories as our topic invites at least to a brief discussion of the literature hitherto published on this test.

Aside from introductory and descriptive publications such as by Szondi (95, 96), Deri (31, 32, 33), Bejarano (13, 14), Calabresi (21) and various others (15, 100), it has been repeatedly pointed out in bookreviews that Szondi and Deri have failed to validate the main assumptions of the test. From reviewers such as Ancelin (4), Balint (8), Bever (16) Ellenberger (36), Jansic (54), Margolet (68), Rapaport (79), Schafer (85),
Stern (90, 91), Wiegersma (103) and Woltmann (104) one gets the impression of the following main points of criticism:

(1) that Szondi's gene theory is extremely speculative and so abstract that it is at present beyond proof or disproof;

(2) that the mechanics of the test force the subject to make two positive and two negative choices, disregarding his real sympathies and antipathies to the portrayed people, and thus falsifying the true personality picture;

(3) that Szondi's basic assumption, according to which a person's need constellation is reflected in his facial features which can act as a cue for recognition and identification stands at present unverified and seems unlikely;

(4) that the picture material of the test is not free from cultural peculiarities and that as a result the test will encounter difficulties in non-German speaking countries;

(5) that Szondi's claim that the selection of pictures is ultimately determined by the prevailing need-tensions in the choosing subject is unwarranted;

(6) that the stimulus material of the test has not been demonstrated to possess the characteristics justifying their distinction into eight psychological factors.

Several of these points are intimately linked with the problem of the validity of the test, a still unresolved problem which the Szondi test shares with practically all projective tests. Bell (15) has listed eleven points of criticism against projective techniques in general; of these
the most serious ones pertain to lack of standardization, possible bias in scoring and the time-consuming translation of test-data into test-scores, unproven reliability of the tests, neglect of statistical validation studies, and the fact that projective tests are too often related to personality theories which lack justification. It appears that Bell's criticisms hold true for most of the current projective tests, the Rorschach Test and Thematic Apperception Test not excluded, which are probably the most widely used clinical tools at the present time. In certain aspects, the Szondi Test - though in need of much research - had from the very moment of its publication some advantages that other tests were lacking; aside from such rather technical, but nevertheless very important details as an absolutely objective scoring system without translation of raw scores into weighted scores, the original test manual is filled with a wealth of statistical material obtained in the process of standardization of the test. Few test inventors in the field of projective techniques have gone through such labor as Szondi in providing the psychologist with normative material in fine diagnostic subdivisions. This gives the test a pragmatic anchoring which diminishes to a large extent the "intuitive element" that is often felt to be present when one considers the diagnostic efficiency of projective tests, although it does not answer the question of the validity of the test. At the heart of this latter problem lies the quest for a psychological rationale that explains the total process of a subject's reactions to the test stimuli and the way in which such reactions can be interpreted by the psychologist.
As for the first of the six points of criticism just mentioned it has become quite clear now that neither the structure of the test itself, nor the interpretative framework to be used by the psychologist, has any necessary relation to Szondi's gene theory as set forth in his book "Fate Analysis" (94). The fact that Szondi has used his test to find objective proof for this theory does not establish any inevitable link between the two enterprises. The American introduction to the test by Susan Deri utilized a conceptual framework entirely different from Szondi's genetic drive theory. Deri, indeed, has treated the test as some sort of projective test without more than the customary assumption that in responding to the test the subject shows "something of his inner world" to the experienced psychologist. Ancelin's (3) criticism that the test responses are not determined by genes, but by factors of every day psychology, is in line with this approach.

The second point of critique has been brought up by various reviewers but most explicitly by Wiegersma (103) who states that the test profile is not necessarily indicative of the real sympathies and antipathies of the subject, but expresses only the relative sympathies within the series. Wiegersma objects to this, because he feels that in so doing a summation of heterogeneous data occurs which may create a considerable alteration in the real personality picture of the subject. Wiegersma's compatriote Vuyk (99) has stated in reply that Szondi's aim is precisely the comparison of needs which are basically and potentially all present in each individual, and that the purpose of the test lies exactly in furnishing an index of need-strength on a comparative basis. For such an approach it is essential that within each series of six, one picture be e.g. least antipathetic with respect to the remaining five.
If, for instance, three needs are about equally strong, the repeated administration of the test will give an opportunity for variation. And it is in line with common psychological experience that certain needs in an individual are constantly or temporarily so predominant that their activity may push other needs, which are no less present in the individual, into the background. In this respect the Szondi test proceeds on no different technique than for instance the Thematic Apperception Test, in which one also looks for those needs which are most outstanding at the moment, without assuming that other needs, which do not happen to come to expression, are simply non-existent in the subject.

With the third point of critique one is in the middle of the problem of the validity of the Szondi Test. The assumption that a person's drive- or need-constellation is somehow reflected in his facial features and to some extent either consciously recognizable or unconsciously identifiable by an onlooker is at present indeed unverified. Older psychiatric textbooks used to illustrate their chapters on various disorders with pictures of patients, so as to familiarize the student-psychiatrist with the physiognomy of the people he would have to deal with. And these were by no means only pictures of catatonic-schizophrenic mannerisms and postural peculiarities, as W.A. White's textbook (102) well shows, with its purely physiognomic pictures. There is very little systematic knowledge of the facial expression of emotion and other personality variables, and the whole problem of physiognomy and physiognomic recognition is still in its infantile stage. Yet, in daily life we do respond to other people's facial features and everyone who has been working in a
psychiatric institute knows how much a patient may "look" schizophrenic, manic or depressive, etc. from the looks of his face and the slight postural positions of the head and neck alone. To what extent our judgments on this basis alone are correct is another question, but the existence of such judgments is a fact and the role that it plays in our total assessment of personality cannot be denied. There is very interesting experimental evidence from Vinacke's study (98) of the agreement of judges who were asked to judge emotion from photographs of human faces alone as well as from the same faces with their situational context. Although, as one would expect, the perception of a context enhanced the agreement of judgments, in certain cases the opposite was found and the agreement was greater when the face alone served as a stimulus. The inference might be that certain faces are more expressive than others and tend to elicit rather uniform responses in various observers.

This leads to a restatement of the problem that has not been mentioned in the Szondi literature. It is quite erroneous to see this test as hinging on the general problem of physiognomy and physiognomic interpretation or recognition; the real question to be answered is why the Szondi pictures, which were after all carefully selected and are not just a random sample of human faces, have proven to be to some extent identifiable or potent to elicit in different subjects responses that have important aspects in common. Rabin's (77, 78') experiment yields positive evidence for this. He had eighty-five undergraduate students with some minimal coursework in abnormal psychology and thirty-seven trained psychologists, mostly clinical, identify the diagnoses of the patients represen-
tions in the Szondi pictures with the help of a checklist of the diagnoses represented. For both groups the number of pictures correctly diagnosed was significantly better than chance, and the psychologists proved on the whole superior in their judgments. Training and experience then seem to make a difference, but even without training a correct identification can be reached in many cases. A similar experiment by Fosberg (39) also showed that trained psychologists can correctly diagnose the Szondi pictures by means of a checklist of the represented syndromes. Rabin introduces in this context the idea of a "stereotype of facial expression." This is probably the basis for Stephenson's (89) finding that introverts dislike Szondi pictures portraying apathy and shut-in qualities, while extraverts dislike most mania, over-excitement and exaggerated emotionality in the pictures.

It may well be that Rabin's concept of a "stereotype of facial expression" provides a useful approach to the problem of the validity of the Szondi test. A similar position is taken by Wallen (101) who concluded from his study that judgments of people's faces seem based on learned reactions of approach or avoidance, as conditioned by individual experiences. This seems indeed very likely, the more so since Szondi himself has not only proceeded on the original idea that the identification with specific needs constitutes the sole basis for the choices of pictures. He has first of all carefully selected his forty-eight pictures till he found those which seemed to possess the greatest and most specific "Aufforderungscharakter" or valence. And second, he has sought a baseline in a normal profile which was empirically established. As Vuyk (99) well states: "the rest of his (i.e. Szondi's) methodology depends on the fact that certain groups of persons who deviate clinically from this normal picture show
also deviating reactions in the test. This places the great value of Szondi's normative data in focus, a fact which seems to have been overlooked by critics of the test, possibly enhanced by the fact that Szondi's original text seemed long inaccessible to average American readers. This normative character of the test is recognized in Stern's (91) approach to the Szondi Test as an objective test instead of a projective technique. We shall deal with this type of approach at a later point in this chapter.

The fourth point of criticism, dealing with the cultural aspects of the picture material, was subject to experimental test by David (27). The unmistakable conclusion from his study is that cultural peculiarities such as the "old fashioned looks" of the portrayed people, play no significant role in the choice by subjects. David felt that his results do not indicate a need for a separate American Szondi series. The physical aspects of the pictures themselves did not appear as important as the supposed unconscious identification or rejection by the subject in responding to the test instructions. Guertin (45) compared the Szondi pictures with a series of forty-eight photographs of supposedly normal Americans, selected from current magazines. In search of their discriminating power he analyzed the variability in ranks of the two sets as assigned by thirty college students. Though he felt that the Szondi pictures have no unique stimulus value, since his control series showed a comparably high variability in rankings, an equally justifiable conclusion from his data is that the allegedly "un-american looks" of the Szondi pictures impedes in no way responding to the test as required. The pictures now in use seem to have no less discriminating power than a modern assortment of so-called American faces, so far as can be determined by.
serial ranking from best to least liked.

Several experiments have attempted to deal with the crucial problem of what seems most likely to determine a subject's choice. Cole and Roberts (26) using normal subjects of college age, found that the selection of pictures cannot be explained by chance alone, and stated that most of the pictures had clearcut affective value for their subjects. Fosberg (39) came to similar conclusions by proving that the choice reactions are at least not comparable to random selections. Guertin (43) who analyzed the factor loadings of the test, concluded from his results that picture selections are determined, at least in part, by the need-tensions of the subjects. He felt that the need-system approach is valuable to understand the reactions of the subjects to the Szondi test. Goldman (42), attempting to differentiate three neuro-psychiatric groups (epileptics, hysterics with seizures, and seizure-free brain tumor patients) also found that the choice reactions were better than chance. The directional choices in the E-factor, however, seemed more or less randomly distributed. Degree of loading in the S-factor differentiated the epileptics and brain tumor patients from the hysterics, the former two groups showing strong aggressive needs which they accepted, while the latter group repressed aggression. Goldman's expectation to find different directional choices of epileptics and hysterics in the E- and HY-factors, however, did not materialize, and the author questions on these grounds the validity of the paroxysmal vector.

A very interesting, well controlled experiment by Odes (74) sheds some light on the nature of the factors determining choice. She adminis-
tered the test to a group of normal subjects immediately before and after the reading of an emotion-provoking horror story, and to control groups of subjects who were given some non-committal material to read in the interval. In full agreement with the predictions following from a need-tension theory of choice she found that there was a statistically significant difference between the two groups, with a significant increase in the loaded as well as open reactions, and in the amount of change in choice from first to second test administration for the experimental subjects. Such emotional states as can be induced and that become behaviorally manifest in comments as "being upset, horrified and angry", then, seem to produce a change in preference yielding unusual accumulations of choices in one or more test factors, with a corresponding emptiness in other factors, whatever these may be for the individual. Lewinian field theory, hypothesizing the existence of a system of inner-personal regions, each employing part of the total individual energy reservoir, which opens the possibility of an indirect, relative measurement of need-strength, can readily explain such reactions. They would seem to be in the nature of registrable changes in the tension distribution within the system of inner-personal regions. If one or a few needs are very prominent they absorb a more than average amount of the individual's energy funds, to the detriment of other needs, equally real and present, but not energy-laden at that time. From this viewpoint it seems indeed a sensible test technique to keep the total number of choices constant, as Szondi did in designing his test. No psychological technique is at the present time able to assess an individual's total or
global psychic tenseness on a purely quantitative scale, but one can, as Lewin has well demonstrated, measure such variables as tension, need-strength or drive-strength pseudo-quantitatively by comparing the state of one inner-personal region with another. Though one may have a healthy skepticism in regard to the question whether Szondi's eight factors form an accurate representation of each individual's system of inner-personal regions at any time, it would seem on inspection that Szondi's factors are well chosen areas of dynamic importance for most people, in keeping with current psychiatric knowledge.

Szondi's and Deri's rationale of the subject's reaction to the test lies in the concept of choice. Both writers explain choice by the process of identification and counteridentification, not directly with the people portrayed in the pictures, but with real persons from the subject's own life-space whose images are reactivated by a process of association. In keeping with psychoanalytic findings, Szondi feels that these images are essentially of parental figures and their substitutes. Such choices are anaclitic choices, determined by old object relationships. A second form exists when a subject chooses the pictures of people whom he likes to be or whom he feels he really is like. These are narcissistic choices. R. Holt (51) found in his "experiment in factorial associations" that subjects almost invariably selected as similar to themselves those pictures which they liked best.

It would seem to the present writer that this point of view, which makes of the test some kind of directed association test, is in keeping with the best of general psychological theory. A comparison with the word-
association test brings an important common element to the fore: just as not all words are equally "hot" to every subject taking the word-association test, so not all pictures are equally striking to every subject taking the Szondi test. There are certain words with a strong emotional tone, and the emotional involvement of the subject is expressed in prolonged reaction time, blocking, weirdness of association, etc. This seems nearly equivalent to the degree of loading attained in each Szondi factor, and only deep-level concepts like tension, affect, drives etc. can catch the psychological significance of such reactions. The importance of choice as a test technique is well phrased by Rapaport (80) who says that preference represents the affective, instinctual core on a very personal, less intellectual level than pleasantness and unpleasantness. In the same vein, Szymanski, quoted by Rapaport (80) considers the selective forces in memory to be formed by interests, driving forces and basic needs. And he adds that with the change of the driving forces our knowledge of the object, dependent upon these driving forces, also changes. Such rather general theoretical convictions are entirely in line with Szondi's theory, that his pictures have the potentiality to reactivate memory images in his subjects from which one can tell important aspects of the subject's personality structure. And the likelihood that the selectivity in the subject's imagery is largely brought about by fundamental needs is further enhanced by Sears' (86) statement that preference or liking occurs when objects are instrumental to gratification.

The next point concerns an aspect of the valence of Szondi pictures
that has apparently caused considerable worry to investigators. Cole and Roberts (26) found that pictures within the same factor can elicit reactions that are not entirely uniform, and Schafer (85), in his review of Szondi's book, states explicitly that the dynamic variables supposed to be characteristic of one Szondi factor (i.e. the psychodynamics of homosexuality, sadism etc.) should be equally well represented in the pictures belonging to that factor. Wiegersma (103) proceeded with his critical study on the same assumption. But this is an erroneous assumption if it is to imply that the effect of the six pictures within a factor be identical. Szondi has mentioned quite clearly in his manual that his selection of pictures within one factor was done in such a way that a series of pictures with an approximately equal quality of valence, but quantitatively graded, would result. This implies, then, that for instance the pictures of homosexuals were chosen so as to elicit foremost responses in which consciously or unconsciously the dynamics of homosexuality could be identified, and appeal to this particular personality variable; but not every picture would have this appeal in equal strength or identical shading. It strikes therefore as somewhat naive to readers familiar with Szondi's text when Lubin and Malloy (67), after having studied the statistical relationships between every pair of pictures within each Szondi factor, found "no consistently positive pattern of interrelationships for all six pictures of a factor", though "all factors have certain pairs that seem significantly related, but not always positive." Though they relate somewhat reluctantly a suggestion offered by one of their co-workers that each of the six pictures may measure a
different facet of a factor, this suggestion contains exactly the formulation that can be found in Szondi's manual.

To the present writer it would seem very doubtful whether statistical analysis alone, no matter how sophisticated its technique, can ultimately determine the nature of the psychological process lying behind the preference for this kind of stimulus material. An example is Guertin's (46) factor analysis of a restricted number of Szondi pictures, two from each factor. The author's observation that nearly half of the variance of intercorrelations can be attributed to five statistical factors, which he is unable to identify, adds little or none to the understanding of the observed preferences. The conclusion that pictures within one Szondi factor are as different as those from different factors seems, moreover, besides the point because the technique of item-analysis overlooks completely the fact that in the prescribed test administration each picture is presented within the specific context of only one of the six series within which each disease entity is only once represented. There is a restricted set of pictures with which each photograph is confronted, with the result that the strength of the preference value is influenced by the strength of the valence of the other seven pictures of a set.

More realistic seems the attitude taken by Szollosi et al. (93) who also found, through an analysis of the profiles of 283 normal adults, that the stimulus values of the pictures are not of equal strength, and that the quality of the stimulus value varies significantly within each factor. These facts, familiar to any serious Szondi worker, must have an effect on the forced choice technique which the test employs,
in so far as the final interpretation of a profile should not exclusively be based upon the degree of loading and the direction of choice within each factor, but also upon the choice reaction to each individual picture. One may draw at this point a parallel with an equally familiar facet of the Rorschach test: if one interprets the amount of human movement responses of a given test record, one's judgment may differ according to whether or not the popular movement response to card III was present. This fact does not invalidate the general interpretative principle of the human movement responses in the Rorschach test; neither does the similar circumstance subtract from the general interpretative value of a given Szondi factor. But it does mean, that empirical knowledge has to be incorporated into the theoretical frame of reference utilized in the interpretation of such test scores. Here again, it would seem essential to consider the normative aspect of Szondi's published normal and pathological profiles, which are based upon pragmatic data rather than upon deductions from pure theory.

What would seem at the present time the most interesting validation studies in this area are those by Klopfer (58, 59) and Borstelmann (18, 19). These authors used essentially Szondi's own technique for determining the stimulus value of the photographs by having groups of subjects free-associate to the people portrayed. These associations were rated by three independent judges for content, and brief descriptions were extracted for each picture. A large group of other subjects were asked to match these descriptions with the 48 pictures. The results are: (1) that subjects assign generally consistent meanings to the portraits; (2) that plus or minus choices (like or dislike responses) seem dependent
on an individual characteristic of the subjects; (3) that like, dislike or neglect, as the three possible test responses to each picture, have a specific psychological meaning. A correspondence of these empirical valences and the ones stated by Szondi was found with respect to 24 of the 48 pictures. Though these results leave still half of the stimulus material invalidated, it would seem to the present writer that Klopfer and Borstelmann's procedure has definitely contributed to an understanding of the processes behind the test responses. Only when we know how normal subjects evaluate these portrayed people which constitute the test material can we come to grips with some other technical aspects of the test. When a Szondi picture elicits a fairly uniform judgment about character in normally adjusted subjects, much of the magic of the choice reaction is taken away, because choice of a picture then simply means that the presumed characteristics of the portrayed person have a rather strong appeal, just as certain living personalities in one's life-space may have a valence for him. In this light, Szondi's psychoanalytic formulation of choice as an anaclytic or a narcissistic preference seems wholly acceptable to common sense.

Credit has to be given to the same authors for defining one facet of the test that has also been observed by others, but less constructively approached. That is the so-called "picture pull", or the fact that certain test pictures appear to have such a strong valence that they attract the choice of nearly all normal subjects, and even of many distinctly abnormal people. An example is the H picture from series five, which is
so often chosen as liked that the chances of a "like" choice for other pictures in series V are sharply reduced. In other words, the probability of being chosen for these pictures is not approximately .5 but somewhere near .8 or .9. The effect is, that one can to some extent predict a sort of skeletal normal test profile, simply by scoring the choices that are very likely in view of this picture pull. Borstelmann and Klopfer attempted on the basis of the empirically demonstrated valences a re-arrangement of the existing test material in order to minimize the effect of these stereotypes and to increase the variability of the factor valences.

This may prove to be a matter of crucial importance to the future of the Szondi test. To Klopfer and Borstelmann, and various others, the Szondi test is apparently first of all a projective test, designed to provide a stimulus of such variable valence that a wide range of personalities may show their particular facets in their responses. This is, of course, in line with the primary requirement of a good projective test to offer polyvalent stimuli. And if the Szondi test is to be so classified, a re-arrangement of its present test material so as to increase the variability of the factor valences would indeed seem an improvement. The question is, however, whether it is at all desirable to handle the Szondi test exclusively as a projective technique *.

* To the present writer it would seem that much of our current thinking about what happens when a subject responds to a so-called projective test, as a consequence of Frank's (40) popular but very superficial statement that he shows "something of his inner world", is a far cry from the original psychoanalytic definition of projection as the exteriorization and ascription to others of a repressed, objectionable psychic content. In the latter, much stricter sense of the word, not even the Rorschach Test may be called a projective test, though it may at times elicit true projections. The Thematic Apperception Test seems at the present the best tool to pick up projected contents.
does not even mention the word in his manual and Deri's American introduction uses the word in its loosest sense only. An opposing trend is formed by several other authors who have emphasized the normative character of the test, notably Stern (91) who classifies it even as an objective test since the only freedom left to the subject is his choice, but choice from a fixed set of pictures with a standard interpretative value. To Szondi's own array of normative data, various American workers have added their part. Cole and Roberts (26) obtained a total number of 213 test profiles on 23 male, and 255 profiles on 27 female college students with median ages of 20 and 19 years. For males as well as for females certain group trends were present, and their article summarizes the most frequently found vector constellations. Harrower (49) published frequency tables on 1299 subjects: 133 neuropsychiatric patients mainly with multiple sclerosis, 400 extra-mural mild neurotics, and 766 normal control subjects subdivided into college students, engineers, nurses, theological and medical students of both sexes. As the consequence of an entirely different study, Davidson et al. (29) found also certain group trends for 46 male college students and also laid emphesis on the establishment of norms.

Part of the normative studies is devoted to the finding of different age norms. Aside from Szondi's own listings, obtained on Hungarian children, Spitz (87) reported data on 110 Swiss children of ages five to seven, attending kindergarten or primary school. She gathered ten test profiles from each child. Though her results confirm roughly the trends found by Szondi, there were also some differences in the reactions of the Hungarian and of the Swiss children, a finding that seems to make the establishment of se-
parate American norms more urgent. Especially at the younger age levels cultural differences may well influence the test reactions. Credit should also be given to Cohen (24) who laid down some basic statistical considerations and who computed the theoretical frequencies for the possible factorial choices, as an aid in the differentiation between groups by means of a simple Chi-square technique.

A matter of serious concern is the reliability of the Szondi Test. Both Ancelin's (4) critical remark, that choices after an interval of 24 hours fail to agree with previous choices in more than 50% of cases, and Sandler & Lubin's (84) finding of a significant reliability for each factor, should be tempered by Holt's (52) concise statement about the kind of reliability one may reasonably expect from a test like the Szondi. In so far as the test is designed to register more variable personality features, Holt points out, all one can ask for is a "genotypic reliability" – with a "phenotypic effect" that may be very different, depending upon the fluctuations in the variables that the test purports to register. With this differentiation in mind, Holt set out to validate the test through a "systematic study of unreliability". He correlated ten successive Szondi profiles of a single normal individual with this subject's successive self-ratings on the Horn Repeated Questionnaire, The Murray Mind Reading Test, and autobiographical data, in order to test the hypothesis that strength of a need and picture choice on the Szondi Test stand in a causal relationship. He found the most useful measure in the degree of loading within each Szondi factor and obtained many significant correlations between these and the content of the other test-items, which were
largely defined in terms of Murray's need system. His conclusions are optimistic with regard to the interpretative meaning of the Szondi factors, and his correlations imply a degree of reliability which— if correctly phrased as genotypic reliability— seems quite satisfactory.

Szondi's and Deri's observations of a conspicuous stability in the successive test responses of obsessive-compulsive neurotics, and of a great deal of instability in the records of psychotics, especially schizophrenics, would imply the existence of a normal range of "phenotypical unreliability", somewhere in between these two extremes. That many types of change in choice are apt to take place in the successive test profiles of normals is further documented by Cole (25) who published data of 86 college students, comparing their first and second profiles.

From a pragmatic point of view the work of David and Rabinowitz (28) would seem very helpful. These authors developed a Szondi Instability Score (SIS) by quantifying on a simple scale the types of changes in choice one may find from one profile to the next, based upon the initial reaction to each picture, independent of the Szondi factor to which it belongs. Basing their first data on six profiles per subject, with intervals of at least 24 hours between each test administration, they compared the SIS of 20 paranoid schizophrenic women with those of 20 student nurses of normal emotional adjustment. A significant difference was found both in the means and the variances of these two groups, the schizophrenic patients yielding very high scores. All of the nurses obtained scores lower than 90, whereas 70% of the schizophrenics obtained scores above 90, the highest scores being obtained by those residing in the most disturbed
hospital wards. These data confirm Szondi's and Deri's findings of excessive fluctuation of choice in psychotic subjects. Apparently then, stability in successive test responses is an index of healthy functioning, with an optimum that permits some change, distinct from the rigid stability of compulsive subjects. But this does not solve the problem of the reliability of the test, since other factors may conceivably influence fluctuation of choice. Cahill (20) investigated the role played by intelligence, by comparing the changes found in a group of 48 boys and girls of 17-18 years with IQ's ranging from 80 to 100, with those of 29 boys and girls of the same ages with IQ's of over 120. Both groups appeared similar in magnitude of change, a finding that would render the influence of intelligence level non-contributory.

The role of two major other variables influencing the Szondi Test remains to be investigated. These are the numerical position of a test profile in the total series obtained, and the length of the interval between successive test administrations. David and Rabinowitz' instability scores may well be a convenient means of exploring these variables.

At the present time it would seem, then, that the reliability of the Szondi Test, even if one distinguishes with Holt between a genotypical and a phenotypical reliability, is still a complicated matter. And it is not easy to direct any criticism in this respect against the test, since Szondi has made the "unreliability" of the test (as this term would apply to more conventional tests) to a basic element of his methodology. He warned against drawing conclusions from one single test profile, and apparently for good reasons, since in his conception the test is designed to measure the more dynamic, that is, fluctuating aspects of
personality.

Recent surveys of Szondi research by Deri (34) and Guertin (47) converge in the opinion that despite much good work induced by skepticism towards the test the majority of studies have not been crucial tests of the Szondi Test itself. Deri's review also contains some applications of the Szondi technique while the current literature goes on providing new material (73). Many of these fall beyond the scope of this chapter.
CHAPTER VI
PROCEDURE

From Szondi's and Deri's theories of epilepsy, discussed in chapter IV, follow a number of operational hypotheses with the testing of which the present study is concerned. Their dynamic interpretation of epileptic seizures as the expression of an aggressive conflict ties in with some of the exploratory psychoanalytic observations and the opinion of some clinicians as described in the introductory chapters. The demonstration of the correctness of this theory, however, rests exclusively on the one single case that Szondi described. Moreover, some aspects of this theory have found their way into Szondi's psychodiagnostic test when its author selected the pictures of the E-factor in such a way that epileptic subjects in the post-paroxysmal phase would not choose them (resulting in an open E reaction) while epileptics in the inter-paroxysmal phase would regularly choose them (resulting in an E-plus or E-minus reaction). (95, p.31)

There is thus an overlapping between Szondi's speculative theory of epileptic seizure dynamics and his test with respect to the E-factor, although the Szondi test design is in all other respects independent of the theory. Yet, it is both from the general theoretical framework and from their actual observations with the test that Szondi and Deri have come to formulate a number of specific "signs" indicating a patient's closeness to a seizure, his need pattern in the pre-paroxysmal phase, or other characteristics typical of his inter- and post-paroxysmal phase. While these signs seem thus on the one hand deductions from a general clinical theory formulating the existence of a specific epileptic personality type, they are also deductions from a more special theory of epi-
leptic seizure dynamics, phrased in the language of the Szondi Test. Though both of these problems have formed two distinct areas of research throughout the literature, it is obvious that they stand in a close relationship and that any finding or conviction in one field may be used to support or detract from a hypothesis prevailing in the other. Ultimate theoretical formulations should equally enable a full understanding of the epileptic personality type, if it exists, and a full explanation of each patient's individual seizures. The ideal is a unified theory, which can do justice to both the relatively static and durable aspects of personality such as traits, interests, proclivities etc., and the more dynamic personality functions which are now commonly formulated in terms of drives, needs, tensions etc. The latter are, after all, little more than the former brought into action. Yet, the study and treatment of these two classes of phenomena have shown a bifurcation which has been partially brought about by the nature of existing psychological tools, since some tests or experimental designs are more suitable for one class than for the other. For the present study, employing the Szondi Test and focussing on the dynamic aspects of Szondi's and Deri's theories, we chose to confine ourselves to the more dynamic personality features which are linked with the occurrence of epileptic seizures, rather than be deeply concerned with the problem of the existence of a specific epileptic personality type.

To test the validity of these signs, and through these and some independent deductions from the theory the validity of the underlying assumptions, we decided to administer the Szondi test a number of times
in succession to a number of patients on the epilepsy ward of the neuro-
psychiatric section of a Veterans Hospital. The patients on this ward all
came in with an initial diagnosis of epilepsy or with some symptom re-
quiring a consideration of epilepsy. Their stay in the hospital was for
both diagnostic and therapeutic purposes. The work-up for epilepsy con-
sisted of a thorough physical and neurological examination with inten-
sive electroencephalographic studies during the normal waking state and
in most cases also during spontaneous or artificially induced sleep,
while in a number of cases additional studies during metrazol activation
were done. A pneumencephalogram was a routine procedure, and in some
cases an arteriogram was done.

This group of epileptics seems in most respects a representative
sample of the epileptic population. They are all extra-mural patients,
whose symptoms started in or after adolescence, who were brought up
and still live in families, who had access to normal facilities of
schooling, and whose IQ's are in the normal range. All of them are fit
for employment, albeit with the usual restrictions required for all
epileptics to the effect of eliminating their handling of dangerous
machinery etc.

These patients were also subject to routine psychological exami-
nations, comprising the Wechsler-Bellevue Intelligence Scale, the Wechs-
ler Memory Scale, and the Rorschach Test. In distinction to the latter
studies, which are of a cross-sectional nature, the Szondi Test was
administered as essentially a longitudinal type of approach, more suitable
to detect the dynamic processes, if any, that are related to the occur-
rence of epileptic seizures. The aim was to obtain test profiles conse-
cutively on a patient over a period of time with the expectation that
in so doing at least one profile prior to the beginning of an epilep-
tic seizure, and at least one profile following the termination of
that seizure would be obtained. As much as was possible within the
schedule of clinical and laboratory studies the selected patients
were given successive administrations of the Szondi test with at least
a twenty-four hours interval as long as no seizures occurred during
that interval. When seizures did occur, the test was given on Szondi's
advice as closely as possible after the seizure, i.e. as soon as the
patient's sensorium was sufficiently clear.

In order to be sure that all seizures within a given period
could be registered without failure, the cases were selected solely
on the basis of the obviousness of the seizures. Patients with petit-
mal seizures or with other minor seizures as the predominating symp-
toms at that time were excluded from the series, since many of them
could occur unnoticed. For the same reason it was felt that patients
with a predominance of nocturnal symptoms should not be included in
this study. We were left, then, with a number of patients who all had
rather spectacular, obvious seizures mainly during the daytime, such
as grand mal, psychomotor and various focal seizures with gross motor
manifestations.

Attempts to realize this testing program have proven to be a frus-
trating experience, even in the rather ideal setting of a hospital with
specialized care for epileptics, with doctors and psychologists' offices
close to the ward, and with an efficient system for reporting seizures
of all patients. Since our aim was to study spontaneous processes we
were completely at the mercy of nature to produce seizures in the
patients. As a matter of fact, several dozens of patients were followed
up with the Szondi Test from time to time, without the occurrence of
a single seizure. We finally obtained series of test profiles on an
experimental group of sixteen patients, altogether having a total number
of twenty-two seizures during their individual testing periods. On each
patient there are from four to ten profiles, with one obtained just prior
to a seizure and one closely after the seizure, and a varying number of
others obtained at greater distance in time from the seizure. In the
course of this study we will use the following terminology with respect to
these Szondi profiles: (1) the term "pre-paroxysmal" refers to the test
profile obtained immediately preceding a seizure; (2) the term "post-
paroxysmal" refers to the test profile immediately following that seizure;
(3) the term "inter-paroxysmal" denotes the test profiles more remote
from the seizure, either preceding the pre-paroxysmal or following the
post-paroxysmal profiles. In some cases, a profile was obtained immediately
after one seizure, but was directly followed by a second, or even a third
seizure. Such profiles, hemmed in between two or more seizures, were
counted double: with respect to the preceding seizure they were consi-
dered post-paroxysmal profiles, while they were taken to be pre-paroxysmal
profiles with respect to the subsequent seizure.

A second, control group was formed from those test profiles obtained
on patients without the occurrence of a single seizure during the period
of administration of the test, and with a seizure-free period of at least
twenty-four hours before the beginning and after the termination of their
test series. This control group was composed of nineteen epileptics, with an equally variable number of test profiles ranging from four to ten, but without pre- and post-paroxysmal profiles since none of them was obtained in proximity to seizures. They were chosen from the same hospital population of epileptics and subject to identical clinical and laboratory studies as was the experimental group.

The cases resulting in this study were all white male veterans with an unequivocal diagnosis of epilepsy upon their discharge from the hospital. The type of their seizures varied, as did the subscripts "idiopathic" or "symptomatic" in their diagnoses. For the purposes of this study, the distinction between idiopathic and symptomatic epilepsy seems not essential, since this part of the diagnosis depends so heavily on the available facilities to uncover less obtrusive forms of brain damage. It is a recurrent experience in the epilepsy center where our study was carried out, that patients referred by other hospitals with a diagnosis of idiopathic epilepsy are discharged from this center with a diagnosis of symptomatic epilepsy. Moreover, the concept of idiopathic epilepsy is considered by many modern epileptologists an antiquated notion, falsely suggesting a separate disease entity. The term cryptogenic epilepsy would seem more honest, since it only denotes the investigator's inability to demonstrate brain damage by present-day methods. On the whole one can be sure that several of the diagnoses of our patients, cautiously phrased as "of unknown etiology or cause", would have been considered idiopathic in hospitals with less facilities to demonstrate brain lesions.

Szondi and Deri have not made pertinent statements about a differentiation of their test findings for each of these diagnostic groups. Szondi's
use of the term "Genuine Epilepsia", as common in German psychiatric literature, serves only to distinguish between epilepsy and epileptoid conditions, while Deri's term "real epilepsy" is obviously used to distinguish epilepsy from hystero-epilepsy, a word which frequently occurs in her test manual.

Our total data, then, comprising 254 Szondi test profiles, permit the following groupings:

(1) the Experimental Group,
   comprising 130 test profiles obtained on 16 individuals;
(2) the Control Group,
   comprising 124 test profiles obtained on 19 individuals;
(3) the Pre-paroxysmal Group,
   comprising the 22 test profiles of the 16 experimental subjects obtained immediately prior to an epileptic seizure;
(4) the Post-paroxysmal Group,
   comprising the 22 test profiles of the 16 experimental subjects obtained immediately following an epileptic seizure.

In the next chapter we shall use this classification to give an account of our results and specify our operational hypotheses. These will yield two main foci of interest:
(a) a study of differences between the experimental and the control group;
(b) a study of differences between the pre-paroxysmal and the post-paroxysmal group.
But prior to this we provide in Table I the necessary background data concerning the diagnosis, age of onset, and duration of the epileptic condition, estimated frequency of seizures, age and IQ of each patient. As can be seen, the patients comprised in the present study are a so-called "non-deteriorated" group of epileptics with a normal range of intellectual functioning and with ages of onset of their symptoms late enough to enable them to have normal schooling and adequate exposure to normal social contacts in an extra-mural situation.
TABLE I

BACKGROUND DATA FOR SIXTEEN EXPERIMENTAL CASES OF EPILEPSY

<table>
<thead>
<tr>
<th>Pat. No.</th>
<th>Diagnosis</th>
<th>Seizure type</th>
<th>Age of onset</th>
<th>Years of duration</th>
<th>Estim. total no. of seizures</th>
<th>Age</th>
<th>IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>20</td>
<td>6</td>
<td>40</td>
<td>26</td>
<td>117</td>
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<td>2</td>
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<td>Grand Mal</td>
<td>26</td>
<td>1</td>
<td>9</td>
<td>27</td>
<td>116</td>
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<td>3</td>
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<td>Abdominal</td>
<td>22</td>
<td>5</td>
<td>100</td>
<td>27</td>
<td>88</td>
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<td>Grand Mal</td>
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<td>12</td>
<td>100</td>
<td>43</td>
<td>101</td>
</tr>
<tr>
<td>5</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal, Focal &amp; Psychom.</td>
<td>12</td>
<td>12</td>
<td>50</td>
<td>24</td>
<td>82</td>
</tr>
<tr>
<td>6</td>
<td>Post-traum. Epilepsy</td>
<td>Grand Mal (chomotor)</td>
<td>24</td>
<td>6</td>
<td>100</td>
<td>30</td>
<td>well ab. average</td>
</tr>
<tr>
<td>7</td>
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<td>Grand Mal</td>
<td>18</td>
<td>7</td>
<td>50</td>
<td>25</td>
<td>90</td>
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<tr>
<td>8</td>
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<td>Grand Mal &amp; Psychom.</td>
<td>17</td>
<td>6</td>
<td>50</td>
<td>23</td>
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</tr>
<tr>
<td>9</td>
<td>Epileps. cause undeterm.</td>
<td>Undetermined</td>
<td>26</td>
<td>6</td>
<td>50</td>
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<td>Atypical</td>
<td>18</td>
<td>4</td>
<td>50</td>
<td>22</td>
<td>116</td>
</tr>
<tr>
<td>11</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>24*</td>
<td>5</td>
<td>100</td>
<td>29</td>
<td>132</td>
</tr>
<tr>
<td>12</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Jackson</td>
<td>21</td>
<td>2</td>
<td>100</td>
<td>23</td>
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<tr>
<td>13</td>
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<td>Psychomotor</td>
<td>23</td>
<td>2</td>
<td>25</td>
<td>25</td>
<td>101</td>
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<tr>
<td>14</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>21</td>
<td>14</td>
<td>100</td>
<td>35</td>
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<tr>
<td>15</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal</td>
<td>17</td>
<td>8</td>
<td>100</td>
<td>25</td>
<td>107</td>
</tr>
<tr>
<td>16</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>25</td>
<td>8</td>
<td>100</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

* Petit Mal seizures between ages 7 and 12, reoccurring after age 24 but not present during the episode of testing.
<table>
<thead>
<tr>
<th>Pat. No.</th>
<th>Diagnosis</th>
<th>Seizure type</th>
<th>Age of onset</th>
<th>Years of duration</th>
<th>Estim. total no. of seizures</th>
<th>Age</th>
<th>IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idiopathic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>18</td>
<td>7</td>
<td>40</td>
<td>25</td>
<td>109</td>
</tr>
<tr>
<td>2</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal</td>
<td>18</td>
<td>3</td>
<td>10</td>
<td>21</td>
<td>109</td>
</tr>
<tr>
<td>3</td>
<td>Epil. cause undet.</td>
<td>Focal (uncinate fits)</td>
<td>34</td>
<td>1</td>
<td>10</td>
<td>35</td>
<td>118</td>
</tr>
<tr>
<td>4</td>
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<td>Minor seizures</td>
<td>25</td>
<td>2</td>
<td>30</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Epil. cause undet.</td>
<td>Psychomotor</td>
<td>36</td>
<td>7</td>
<td>10</td>
<td>43</td>
<td>102</td>
</tr>
<tr>
<td>6</td>
<td>Epil. cause undet.</td>
<td>Grand Mal</td>
<td>26</td>
<td>6</td>
<td>10</td>
<td>32</td>
<td>116</td>
</tr>
<tr>
<td>7</td>
<td>Symptomatic Epilepsy</td>
<td>Psychomotor</td>
<td>20</td>
<td>5</td>
<td>50</td>
<td>25</td>
<td>82</td>
</tr>
<tr>
<td>8</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal</td>
<td>33</td>
<td>3</td>
<td>15</td>
<td>36</td>
<td>128</td>
</tr>
<tr>
<td>9</td>
<td>Epilepsy cause undet.</td>
<td>Grand Mal</td>
<td>25</td>
<td>33</td>
<td>100</td>
<td>58</td>
<td>108</td>
</tr>
<tr>
<td>10</td>
<td>Epilepsy cause undet.</td>
<td>Focal &amp; Psychomotor</td>
<td>17</td>
<td>4</td>
<td>20</td>
<td>21</td>
<td>109</td>
</tr>
<tr>
<td>11</td>
<td>Post-traum. Epilepsy</td>
<td>Grand Mal</td>
<td>22</td>
<td>1</td>
<td>5</td>
<td>23</td>
<td>114</td>
</tr>
<tr>
<td>12</td>
<td>Symptomatic Epilepsy</td>
<td>Grand Mal &amp; Psychom.</td>
<td>56</td>
<td>3</td>
<td>100</td>
<td>59</td>
<td>113</td>
</tr>
<tr>
<td>13</td>
<td>Epilepsy cause undet.</td>
<td>Undetermined</td>
<td>27</td>
<td>1</td>
<td>8</td>
<td>27</td>
<td>103</td>
</tr>
<tr>
<td>14</td>
<td>Post-traum. Epilepsy</td>
<td>Undetermined</td>
<td>29</td>
<td>5</td>
<td>5</td>
<td>34</td>
<td>110</td>
</tr>
<tr>
<td>15</td>
<td>Epilepsy cause undet.</td>
<td>Grand Mal</td>
<td>23</td>
<td>5</td>
<td>50</td>
<td>28</td>
<td>93</td>
</tr>
<tr>
<td>16</td>
<td>Epilepsy cause undet.</td>
<td>Psychomotor</td>
<td>24</td>
<td>7</td>
<td>100</td>
<td>31</td>
<td>112</td>
</tr>
<tr>
<td>17</td>
<td>Symptomatic Epilepsy</td>
<td>Psychomotor</td>
<td>42</td>
<td>3</td>
<td>20</td>
<td>45</td>
<td>123</td>
</tr>
<tr>
<td>18</td>
<td>Post-traum. Epilepsy</td>
<td>Psychomotor</td>
<td>24</td>
<td>2</td>
<td>15</td>
<td>26</td>
<td>114</td>
</tr>
<tr>
<td>19</td>
<td>Epilepsy cause undet.</td>
<td>Grand Mal</td>
<td>20</td>
<td>7</td>
<td>50</td>
<td>27</td>
<td>127</td>
</tr>
</tbody>
</table>
CHAPTER VII

RESULTS

The first operational hypothesis deducible from Szondi's test theory and from his viewpoints on epilepsy is based upon the notion of loading found in the test profile of any subject. The relative absence of loaded reactions as well as open choices, as discussed in chapter V, is in itself an index of normality since the test is so constructed that normal emotional functioning is reflected in an average amount of choice in each Szondi factor, whatever the direction of the choice may be. Tenseness or disturbance in normal functioning is expected to show up in an increased frequency of very loaded and open reactions of any test profile. The frequency of such choices of either five and six, or zero and one, is used by Szondi himself in his notion of "Quantity Tension" and a similar measure was used by Odes (74) in her assessment on the impact of the reading of a horror story on the Szondi profiles of subjects.

Szondi's theory of the dynamics of epileptic seizures implies that the nearness to a seizure would be accompanied by a greater frequency of loaded and open reactions in the test profiles of epileptics, especially in the so-called "epilepsy factor" or E-factor of the test. And in addition, the profiles just preceding a seizure are expected to show an excess of loading to be reduced with the paroxysm. In effect, Szondi has illustrated in the profiles of one subject how especially the E-factor tends to be highly loaded just preceding the seizure, whereas the post-
paroxysmal state shows a sudden draining of the loading in an open E-reaction. In the case of the E-factor, however, there is an element of circularity that makes it invalid as a means of testing the validity of Szondi's general psychodynamic theory of epileptic seizures. As in Odes' study, the testing of the theory will be done with respect to the Szondi test as a whole, comprising all eight test factors. Moreover, Deri, in a personal communication with the present writer, has warned against paying one's attention too exclusively to the E-factor in any prediction of closeness to epileptic seizures. A verification of Szondi's and Deri's theories was done with the following operational hypothesis:

Operational hypothesis I a:

The frequency of very loaded reactions (defined as choices with a magnitude of five or six) and open reactions (defined as choices with a magnitude of zero or one) will be greater for a group of epileptics close to a seizure than for a group of epileptics in the inter-paroxysmal period or at greater distance in time from seizures.

This hypothesis was tested by comparing the frequency of loaded and open reactions in our experimental and our control group. Since the total number of test profiles for each subject varied, we used as our measure a weighted score, obtained by counting the number of open or loaded reactions in all profiles of a subject and dividing by the total number of his profiles. These weighted scores are shown
### TABLE II

**INCIDENCE OF LOADED AND OPEN REACTIONS**

<table>
<thead>
<tr>
<th>Group:</th>
<th>N</th>
<th>Loaded choices Mean</th>
<th>Open choices Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>16</td>
<td>.985</td>
<td>1.005</td>
</tr>
<tr>
<td>control group</td>
<td>19</td>
<td>.914</td>
<td>.957</td>
</tr>
</tbody>
</table>

**ANALYSIS OF VARIANCE**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental-Control group</td>
<td>1</td>
<td>.1966</td>
</tr>
<tr>
<td>Loaded-Open reactions</td>
<td>1</td>
<td>.0189</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>.0037</td>
</tr>
<tr>
<td>Individuals</td>
<td>33</td>
<td>.316</td>
</tr>
<tr>
<td>Residual</td>
<td>33</td>
<td>.0647</td>
</tr>
<tr>
<td>Total Variance</td>
<td>69</td>
<td>12.7816</td>
</tr>
</tbody>
</table>

F of Experimental-Controls / Individuals:

.622, d.f. 1/33, not significant

F of Loaded-Open Reactions / Residual:

3.423, d.f. 1/33, not significant
in Table II, both for the loaded and the open reactions, and for the experimental and the control group. We approached these data statistically by means of the analysis of variance technique, the results of which are summarized in the same table. It appears that practically all of the variance can be accounted for by the variability of the individuals within each group, yielding a variance ratio of .622 which is not significant at the lenient 5% level. The experimental and the control group, then, do not appreciably differ on this measure.

The same measure was used to verify a somewhat more refined hypothesis derived from Szondi's distinctions between findings on pre-paroxysmal and post-paroxysmal epileptics. His notion of conflict, underlying the psychodynamics of epileptic seizures, has been formulated as an accumulation of need tension reaching its highest intensity just before the seizure, to be abruptly reduced or drained with the seizure, such that the post-paroxysmal state is conspicuous by its relative absence of this conflict material. A logical conclusion from Szondi's and Deri's general theory yields the following additional hypothesis:

Operational hypothesis I b:
The frequency of very loaded reactions (defined as choices with a magnitude of five or six) and open reactions (defined as choices with a magnitude of zero or one) will be greater for pre-paroxysmal than for post-paroxysmal test profiles of the same epileptics.
TABLE III

INCIDENCE OF LOADED AND OPEN REACTIONS

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Loaded choices</th>
<th>Open choices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-paroxysmal</td>
<td>16</td>
<td>.856</td>
<td>1.063</td>
</tr>
<tr>
<td>Post-paroxysmal</td>
<td>16</td>
<td>.988</td>
<td>1.438</td>
</tr>
</tbody>
</table>

ANALYSIS OF VARIANCE

<table>
<thead>
<tr>
<th>Group</th>
<th>d.f.</th>
<th>Var.Estim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paroxysmal - Post-parox.</td>
<td>1</td>
<td>1.723</td>
</tr>
<tr>
<td>Loaded-Open reactions</td>
<td>1</td>
<td>1.025</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td>.237</td>
</tr>
<tr>
<td>Individuals</td>
<td>30</td>
<td>17.392</td>
</tr>
<tr>
<td>Residual</td>
<td>30</td>
<td>8.580</td>
</tr>
<tr>
<td>Total variance</td>
<td>63</td>
<td>28.957</td>
</tr>
</tbody>
</table>

F of Pre- & Post-paroxysmal / Individuals:

2.976 d.f. 1/30, not significant

F of Loaded & Open Reactions / Residual:

3.584 d.f. 1/30, not significant
We verified this hypothesis by comparing the twenty-two pre-paroxysmal profiles with the same number of post-paroxysmal profiles of the patients who constitute the experimental group. We used the same measure as before, but were in no need of a weighting procedure since each subject had an equal number of pre- and post-paroxysmal profiles. Table III summarizes our data and shows the results of the analysis of variance technique which we employed. As in the preceding case, by far the larger part of the total variance is due to the individual variability within each group, yielding a variance ratio of 2.976 which is not significant at the 5% level. It should also be noted that what little difference exists between the pre- and post-paroxysmal group is in a direction opposite to expectation: our data show an increase in both the loaded and open reactions along with the seizures, most markedly in the open choices.

A second verification of Szondi's theory was attempted with the so-called Szondi Instability Score or SIS, recently developed by David and Rabinowitz (28) and based upon Deri's rules to assess the degree of psychological abnormality of a series of records. A similar measure has also been used by Odes (74) in her afore mentioned study, in which it underwent a significant increase after an induced emotion of horror. It is based upon the fact that the test record of a subject usually shows a certain degree of change from one profile to the next, whereas its magnitude seems to increase with sharper emotional upheaval. We pointed out in chapter V that this measure is entirely independent of Szondi's classification of test responses into eight factors, since it is directly
derived from the responses to any of the 48 pictures which constitute the test material.

In order to quantify such changes in the successive test profiles we assessed a patient's choices in his first profile and graded each subsequent test response, whenever it changed, according to the following scale:

0 - no change;

1 - change from a positive or negative choice to neglect of a picture;

2 - reversal of choice: from positive to negative or vice versa.

From each test profile to the next, the quantities obtained were summed to an SIS such that each patient obtained as many SIS's as there were intervals between his test administrations. These considerations led to the following hypothesis:

Operational hypothesis II a:

The Szondi Instability Scores will be greater for a group of epileptics close to a seizure than for a group of epileptics in the inter-paroxysmal period or at greater distance in time from seizures.

For the testing of this hypothesis we compared the SIS of our experimental and our control group. Since we were faced with the fact that the total number of test profiles differed for each subject, we computed for each individual a Median SIS, based upon as many single Szondi Instability Scores as the total number of intervals be-
### TABLE IV

**MEDIAN SZONDI INSTABILITY SCORES IN RANKORDER**

<table>
<thead>
<tr>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>N</em> - 16</td>
<td><em>N</em> - 19</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td><strong>Median</strong></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td><strong>Range</strong></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1 - 7</td>
<td>1 - 4</td>
</tr>
<tr>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>1 - 9</td>
<td>1 - 7</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2 - 7</td>
<td>1 - 4</td>
</tr>
<tr>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td>3 - 5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3 - 7</td>
<td>1 - 8</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2 - 8</td>
<td>2 - 7</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>3 - 12</td>
<td>3 - 10</td>
</tr>
<tr>
<td>6</td>
<td>4 - 8</td>
</tr>
<tr>
<td>4 - 8</td>
<td>4 - 8</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>2 - 11</td>
<td>5 - 7</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>4 - 9</td>
<td>5 - 10</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>5 - 10</td>
<td>4 - 11</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>4 - 11</td>
<td>5 - 8</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>4 - 19</td>
<td>6 - 8</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>4 - 11</td>
<td>4 - 10</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>14 - 20</td>
<td>5 - 10</td>
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<tr>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td>11 - 29</td>
<td>5 - 12</td>
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<tr>
<td></td>
<td>9</td>
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<tr>
<td></td>
<td>6 - 11</td>
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<td></td>
<td>9.5</td>
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<td>3 - 13</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>11 - 16</td>
</tr>
</tbody>
</table>

**Group**

| Median | 6.5 |

**Median of combined groups**

| 6 |

**Median Test:** Chi-square: .433  
  d.f. 1  
  P: .50 - .70
tween the profiles. These median scores are enumerated in Table IV. It appears that the total median SIS is 6.5 for the experimental group and 6 for the control group. The differences were analyzed by means of the median test which yields a Chi-square of .433 and a P of between 50 and 70%. It is clear from inspection that much individual variability exists between the subjects in each group.

Szondi's sharp distinctions between findings on pre- and post-paroxysmal epileptics and the general tenor of his psychodynamic theory of epileptic seizures consisting in a gradual build-up of psychic tension before seizures to be discharged with the seizures, permits the formulation of a more refined hypothesis:

Operational hypothesis II b:
The Szondi Instability Scores measuring change from the pre- to the post-paroxysmal profiles of epileptics will be greater than the median, or more strictly the range of, inter-paroxysmal instability scores of the same subjects.

This was investigated by comparing the paroxysmal SIS, that is the instability in choice occurring synchronous with the seizures, and the inter-paroxysmal instability from one profile to the next as found in the experimental group. In Table V the results are shown in such a way that for each case the difference as well as the direction of the difference between the paroxysmal and median-inter-paroxysmal SIS are given. We added by means of an asterisk whether or not the paroxysmal...
TABLE V

COMPARISON OF SZONDI INSTABILITY SCORES WITHIN THE EXPERIMENTAL GROUP

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxysmal SIS</td>
<td>Inter-paroxysmal</td>
<td>Interparoxysmal</td>
<td>Difference</td>
</tr>
<tr>
<td></td>
<td>SIS; Median</td>
<td>SIS; Range</td>
<td>between I and II</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>4 - 8</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>3.5</td>
<td>1 - 6</td>
<td>+ 5.5 *</td>
</tr>
<tr>
<td>15</td>
<td>17</td>
<td>14 - 20</td>
<td>- 2</td>
</tr>
<tr>
<td>7</td>
<td>9.5</td>
<td>8 - 11</td>
<td>- 2.5</td>
</tr>
<tr>
<td>4</td>
<td>9.5</td>
<td>8 - 11</td>
<td>- 5.5</td>
</tr>
<tr>
<td>11</td>
<td>27.5</td>
<td>26 - 29</td>
<td>-16.5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>4 - 5</td>
<td>- 2</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>3 - 8</td>
<td>+ 3 *</td>
</tr>
<tr>
<td>12</td>
<td>6</td>
<td>3 - 8</td>
<td>+ 6 *</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>4 - 16</td>
<td>+11 *</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>5 - 7</td>
<td>+ 4 *</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>5 - 7</td>
<td>+ 1</td>
</tr>
<tr>
<td>9</td>
<td>6.5</td>
<td>4 - 9</td>
<td>+ 2.5</td>
</tr>
<tr>
<td>9</td>
<td>8.5</td>
<td>4 - 11</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>2 - 11</td>
<td>- 2</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3 - 7</td>
<td>+ 1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>3 - 7</td>
<td>- 3</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>3 - 7</td>
<td>- 3</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>1 - 7</td>
<td>+ 3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>1 - 7</td>
<td>- 1</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>1 - 7</td>
<td>+ 2</td>
</tr>
<tr>
<td>6</td>
<td>4.5</td>
<td>2 - 8</td>
<td>+1.5</td>
</tr>
</tbody>
</table>

* In these cases the magnitude of the paroxysmal SIS exceeds the whole range of inter-paroxysmal SIS.
SIS was great enough to exceed the entire series of SIS of each subject. Of the twenty-two epileptic seizures so assessed there are thirteen which produced an instability greater than the patient's own median instability in inter-paroxysmal profiles. However, only five seizures entailed an instability which exceeded the individual's own range of instability during seizure-free intervals. If epileptic seizures are, as Szondi and Deri claim, the abrupt termination of a gradually growing abnormality, with the seizure itself as under the present circumstances "the only way out", one may expect a dramatically great SIS along with the paroxysms, exceeding such disequilibria which did not lead to seizures. Only five of twenty-two seizures observed may be said to have entailed such disequilibrium.

While our measures hitherto employed were based upon certain aspects of the test profiles as a whole, it is also pertinent to have a more detailed look at the test scores, mainly in connection with Szondi's claim that epileptic seizure dynamics produce disturbances foremost in his E-factor. Though one need not take Szondi's theory to mean that seizure dynamics are reflected exclusively in the E-factorial reactions, Szondi sees this factor nevertheless as the one that registers such processes par excellence, so that one may expect the most spectacular reflection of seizure dynamics in it.

It was pointed out earlier that Szondi, in his test construction, established the E-factor empirically, standardizing the valence of the E-pictures on the reactions of known epileptics. This fact poses an
element of circularity if one attempts to test the theory of seizure
dynamics through an investigation of the responses to the E-factor
alone. It would seem in order, however, to explore more closely this
supposed relationship between Szondi's dynamic theory of epilepsy and
his test, especially since Rapaport, in a preliminary publication (79)
reported that epileptics in the Menninger Clinic were observed to yield
an open E-reaction after seizures, in line with Szondi's predictions.

It would follow, then, that our experimental and control groups,
whose main difference lies in the circumstance that the latter group
lacks the pre- and post-paroxysmal characteristics that are present
in the former, should also be most clearly differentiated in their
respective choices in the E-factor. This is expressed in the following,
somewhat vague, hypothesis:

Operational hypothesis III a:
Loaded and open E-reactions, as signs of pre- and post-paroxysmal
disequilibria, will be more frequent in the experimental than in
the control group.

Table VI enables an evaluation of this point on inspection. We
summarized in this table not only the frequency with which loaded or
open reactions were found in any factor, but also the number of cases
to which this observation pertained. This is necessary for two reasons:
(1) because the total number of test profiles differed for each individ­
dual; (2) because it appeared that the choice categories are unequally
distributed in the individuals. For these same reasons it is impossible
<table>
<thead>
<tr>
<th>Factor</th>
<th>Experimental group</th>
<th></th>
<th>Control group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 130</td>
<td></td>
<td>N = 124</td>
<td></td>
</tr>
<tr>
<td>loaded</td>
<td>open</td>
<td>loaded</td>
<td>open</td>
<td></td>
</tr>
<tr>
<td>frequency/ no. of cases</td>
<td>frequency/ no. of cases</td>
<td>frequency/ no. of cases</td>
<td>frequency/ no. of cases</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>12/8</td>
<td>15/5</td>
<td>19/7</td>
<td>29/8</td>
</tr>
<tr>
<td>S</td>
<td>32/11</td>
<td>6/3</td>
<td>9/5</td>
<td>14/5</td>
</tr>
<tr>
<td>E</td>
<td>14/5</td>
<td>8/5</td>
<td>9/6</td>
<td>25/12</td>
</tr>
<tr>
<td>H Y</td>
<td>12/5</td>
<td>5/4</td>
<td>6/6</td>
<td>3/2</td>
</tr>
<tr>
<td>K</td>
<td>16/7</td>
<td>34/9</td>
<td>6/5</td>
<td>13/9</td>
</tr>
<tr>
<td>P</td>
<td>10/7</td>
<td>15/7</td>
<td>21/9</td>
<td>11/5</td>
</tr>
<tr>
<td>D</td>
<td>5/3</td>
<td>30/9</td>
<td>12/5</td>
<td>23/10</td>
</tr>
<tr>
<td>M</td>
<td>24/7</td>
<td>16/9</td>
<td>34/9</td>
<td>2/2</td>
</tr>
</tbody>
</table>
to deal with the figures statistically by means of the Chi-square tech-
nique. It is clear on inspection that the figures for the E-factor do
not bear out the expectations. Though the experimental group yields a
greater frequency of loaded reactions, this observation is actually
obtained on a smaller number of cases. And the control group exceeds
the experimental group in the frequency as well as in the number of
cases with open E-reactions. Whether or not the magnitude of these
differences is statistically significant, the findings are contrary
to the predicted direction.

Inspection of the other factors shows moreover that there are more
striking differentiations between the two groups. Notably factor K,
which shows a much greater frequency of loaded and open choices for
the experimental subjects, although the number of cases to which this
finding pertains is not widely different. Factor S yields both a greater
frequency of, and a greater number of cases in which loaded reactions
occurred for the experimental group. And factor M shows a larger frequency
of, and many more cases with, open reactions for the experimental subjects.
These findings are felt to be opposed to the idea that the E-factor
possesses a special discriminating power for epileptics in the three
phases of their supposed cycle.

A more exact assessment of Szondi's theory of the E-factor and its
applicability to epileptics would be possible by comparing the pre- and
the post-paroxysmal test profiles of our experimental subjects. Since each
subject had before each seizure one pre-paroxysmal profile, and one post-
paroxysmal profile after each seizure, the scores of these two groups
are directly comparable. In accordance with Szondi's dynamic theory of
seizures we can thus formulate the following hypothesis:

Operational hypothesis III b:

Loaded E-reactions will be greater in the pre- than the post-paroxysmal test profiles of the same epileptic subjects;
Open E-reactions will be fewer in the pre- than in the post-paroxysmal test profiles of the same epileptic subjects.

Table VII shows that no loaded reactions were found in the pre-paroxysmal profiles, whereas loading occurred twice in the post-paroxysmal records. This rebukes the first part of the hypothesis. Open reactions, however, were more frequent in the post- than in the pre-paroxysmal records, as predicted. The magnitude of this difference, however, is comparable to that found in other factors, such as loaded H and S, and the loadings in M. There is thus no support from these data for Szondi's conviction that the dynamics of epileptic seizures can be brought together under the heading of one of his test factors. A multi-factorial reaction stands out in these figures.
# TABLE VII

LOADED AND OPEN REACTIONS IN EACH FACTOR SEPARATELY

<table>
<thead>
<tr>
<th>Factor</th>
<th>Experimental group</th>
<th>Difference and direction of difference with the seizure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-paroxysmal</td>
<td>Post-paroxysmal</td>
</tr>
<tr>
<td>H</td>
<td>1 1 4 3</td>
<td>+3 +2</td>
</tr>
<tr>
<td>S</td>
<td>5 1 8 3</td>
<td>+3 +2</td>
</tr>
<tr>
<td>E</td>
<td>0 1 2 4</td>
<td>+2 +3</td>
</tr>
<tr>
<td>H Y</td>
<td>3 0 2 1</td>
<td>-1 +1</td>
</tr>
<tr>
<td>K</td>
<td>2 6 3 7</td>
<td>+1 +1</td>
</tr>
<tr>
<td>P</td>
<td>2 3 3 3</td>
<td>+1 0</td>
</tr>
<tr>
<td>D</td>
<td>1 6 0 4</td>
<td>-1 -2</td>
</tr>
<tr>
<td>M</td>
<td>4 5 1 6</td>
<td>-3 +1</td>
</tr>
</tbody>
</table>
In chapter IV of this study we outlined Szondi's and Deri's theories of epilepsy and documented these with quotations from their works. In so far as several aspects of their theories are directly cast in Szondi Test language, they can be handled as diagnostic signs which differentiate between the various groups of epileptics such as we are dealing with. The series of hypotheses which will now follow is designed to test Szondi's theory of the cyclic nature of the epileptic's psychodynamics. Szondi's claim that some specific constellations of test scores (or "signs") can differentiate between the pre-, post- and inter-paroxysmal phases of the cycle is of considerable importance because of the predictive quality which is inherent in these signs.

The first hypothesis in this series follows from Deri's statement (on page 81 of her manual) that H-plus, S-plus is found:

"... most frequently in mania, hypomanic excitement or in epilepsy, all of these diseases being characterized by a strong need for motor discharge." Since the accent of this sign lies on the need for motor discharge, we reasoned that this sign would be more frequent in our experimental than in our control group, because the former was studied at a moment in close proximity to seizures, at a time that this "need for motor discharge" was supposedly at its greatest intensity.

Operational hypothesis IV a:

H-plus, S-plus will be more frequent in a group of epileptics close to a seizure than in a group of epileptics in the inter-paroxysmal period or at greater distance in time from seizures.
**TABLE VIII**

**INCIDENCE OF SIGN: H plus, S plus**

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases with</th>
<th>No. of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>11</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Control Group</td>
<td>11</td>
<td>8</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi-square $0.399$  d.f. 1  $p$ $0.50 - 0.70$

**Post-paroxysmal**

<table>
<thead>
<tr>
<th>No. of cases with</th>
<th>No. of cases without</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cases with</td>
<td>6</td>
</tr>
<tr>
<td>No. of cases without</td>
<td>0</td>
</tr>
</tbody>
</table>

Chi-square* $0.5$  d.f. 1  $p$ $0.30 - 0.50$

*Since the pre- and the post-paroxysmal profiles are based upon the same individuals, Chi-square for correlated proportions, with Yates' correction, was used in this and other comparisons of the pre- and the post-paroxysmal group. Reference: McNemar, Q. Psychological Statistics, p.204-207; New York: J.Wiley & Sons, 1949*
Table VIII gives the incidence of this sign in the two groups. It appears that the frequency is somewhat greater in the experimental group, but the difference is not significant between the two groups. This prediction, then, is not borne out by the data.

A further verification of the validity of this sign was attempted by means of the following hypothesis:

Operational hypothesis IV b:

H-plus, S-plus will be more frequent in pre-paroxysmal than in post-paroxysmal test profiles of the same epileptic subjects.

The results are summarized in the second half of Table VIII. It appears that there are only two cases in which the sign occurred pre-paroxysmally, without also occurring in the post-paroxysmal test profiles. This contrasts sharply to the remaining fourteen cases in which the sign occurred in the non-predicted places.

The interpretative meaning of Szondi's S-factor as need for aggression and motor activity has led Deri to the statement that an occasional draining of loading in the S-factor (i.e. occasional open choices in S) may be expected in grand mal seizures (33, p.332) Within Szondi's and Deri's frame of reference such open reactions are felt to mean that seizure manifestations have released aggressive
urges for the time being, leaving the individual for some time during
the post-paroxysmal period with little or no urge for aggression. This
sign leads to the following hypothesis:

Operational hypothesis V a:
The frequency of open-S reactions will be greater for a group
of epileptics closely after a seizure than for a group of
epileptics in the inter-paroxysmal period or at greater dis-
tance in time from seizures.

We compared our experimental and control groups on this score
and give the results in Table IX. The sign occurred in six of the
sixteen experimental cases and in six of the nineteen contro\$ cases.
The difference, though in the predicted direction, is very slight
and may be entirely attributed to chance.

A more refined investigation of the validity of this sign could
be done with our other two groups, on which we tested the following
hypothesis:

Operational hypothesis V b:
The frequency of open-S reactions will be greater for post-
paroxysmal than for pre-paroxysmal test profiles of the same
epileptic subjects.

Referring to the second half of Table IX we found open-S choices
post-paroxysmally in only two cases in which they did not also
occur pre-paroxysmally. The sign would thus not appear to be of
diagnostic value.
TABLE IX

INCIDENCE OF SIGN: S open

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases with</th>
<th>No. of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Control Group</td>
<td>6</td>
<td>13</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi-square .126 d.f. 1 P .70 - .80

Post-paroxysmal

<table>
<thead>
<tr>
<th>No. of cases with</th>
<th>No. of cases without</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paroxysmal</td>
<td></td>
</tr>
<tr>
<td>No. of cases with</td>
<td>2</td>
</tr>
<tr>
<td>No. of cases without</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square .5 d.f. 1 P .30 - .50
A concise formulation of Szondi's theory of epilepsy is found in the following quotation from Deri (33, p.111) on the E-minus, HY-plus reaction: "... anti-social and impulsive motor excitability is the common dynamic characteristic of all these groups .... (i.e. murderers and other types of overtly aggressive criminals, in manic psychotics, in epileptics near seizure, and in agitated cases of general paralysis)." This statement leads directly to the following hypothesis:

Operational hypothesis VI a:
The frequency of E-minus, HY-plus reactions will be greater for a group of epileptics close to a seizure than for a group of epileptics in the inter-paroxysmal period or at greater distance in time from seizures.

This sign appeared to be infrequent in both the experimental and the control group. Table X shows the incidence: none of the control subjects showed the sign, whereas only two of the experimental patients produced it. Fisher's exact test leads to a probability value of .71 which is non-significant. It is obvious that this sign has no differentiating value for the two groups; the findings to verify the next, more refined hypothesis, will further document our conclusion. Deri's remark that the sign appears
TABLE X

INCIDENCE OF SIGN: E minus, HY plus

<table>
<thead>
<tr>
<th>Group</th>
<th>No.of cases with</th>
<th>No.of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>2</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Control group</td>
<td>0</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

Fisher's exact test: P .71
".... in epileptics near seizure ...." as an indication of strong aggressive urges and inadequate control permits the formulation of the following additional hypothesis:

Operational hypothesis VI b:

E-minus, HY-plus reactions will be more frequent in pre-paroxysmal than in post-paroxysmal test profiles of the same epileptic subjects.

No table is necessary to summarize our findings: the sign occurred neither in the pre- nor in the post-paroxysmal records. The two times that it occurred at all was in the inter-paroxysmal records of one patient, who produced it twice.

Another constellation in Szondi's paroxysmal vector is the E-minus, HY-minus reaction. Szondi (95, p.94) mentions that this reaction is typical of the inter-paroxysmal period of epileptics, and Deri (33, p.113) remarks that it means "subjectively experienced discomfort" and that the tension implied usually finds some outlet during the course of administration of a series of profiles. Szondi also feels that this reaction is likely in epileptics receiving anti-convulsant medication by means of which the "outlet" of psychic tension is sharply reduced. If all this be true one would expect that our control group, which did not experience seizures during the testing period, would show this sign with greater frequency than our experimental subjects, who did find an "outlet" for the implied tension. This is expressed in the following hypothesis:
### TABLE XI

**INCIDENCE OF SIGN: E minus, HY minus**

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases with</th>
<th>No. of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Control Group</td>
<td>9</td>
<td>10</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi-square .011  d.f. 1  P .90

---

**Post-paroxysmal**

<table>
<thead>
<tr>
<th></th>
<th>No. of cases with</th>
<th>No. of cases without</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paroxysmal</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No. of cases without</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Chi-square .25  d.f. 1  P .50 - .70
Operational hypothesis VII a:
E-minus, HY-minus will be more frequent in a group of epileptics in the inter-paroxysmal period, at some distance in time from a seizure, than in a group of epileptics close to seizures.

Table XI shows that this sign was found in nearly the same proportion in both groups. The Chi-square test yields a probability of .90
Because of the fact that our experimental group covers both a pre- and a post-paroxysmal phase of the patients, whereas one may also logically expect E-minus, HY-minus to increase in frequency with a gradual approach of a patient to a seizure, the following additional hypothesis was also tested:

Operational hypothesis VII b:
E-minus, HY-minus reactions will be more frequent in the pre-paroxysmal than in the post-paroxysmal records of the same epileptic patients.

There were only two cases in which the sign was found in the pre-paroxysmal profiles without also occurring in their post-paroxysmal profiles. It seems thus not related to the pre-paroxysmal phase of epileptics.

Our experimental design enabled a direct testing of the validity of the following statement by Deri (33, p.209) concerning the test reaction K-open: "... can appear in epileptics immediately after
### TABLE XII

**INCIDENCE OF SIGN: K open**

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases with</th>
<th>No. of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>12</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Control Group</td>
<td>13</td>
<td>6</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi-square .203  

<table>
<thead>
<tr>
<th></th>
<th>d.f. 1</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>.50 - .70</td>
</tr>
</tbody>
</table>

**Post-paroxysmal**

<table>
<thead>
<tr>
<th></th>
<th>No. of cases with</th>
<th>No. of cases without</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-paroxysmal</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>No. of cases with</th>
<th>No. of cases without</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

Chi-square .2  

<table>
<thead>
<tr>
<th></th>
<th>d.f. 1</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>.50 - .70</td>
</tr>
</tbody>
</table>
seizure, .... or generally after any sort of paroxysmal outbreak."
Verification of this sign seems the more urgent since the psychia-
trist Prick, in a recent article (76), seemed to feel that Szondi's
observations on the K-factor tied well in with clinical material
concerning a supposed loss of ego-awareness in leukotomy patients.
For our groups we set up the following hypothesis:

Operational hypothesis VIII a:
Open K-reactions will be more frequent in a group of epi-
leptics close to a seizure than in a group of epileptics
in the inter-paroxysmal period or at greater distance in
time from seizures.

We present in Table XII the figures on the incidence of this
sign in our experimental and control groups. It appears that the
incidence is about equal in both groups; Chi-square of differences
yields a probability value of between .50 and .70 The sign would
thus not appear to possess discriminating power.

A better test of the validity of this sign could be carried
out with the following hypothesis:

Operational hypothesis VIII b:
Open K-reactions will be more frequent in the post-paroxysmal
than in the pre-paroxysmal test profiles of the same epileptic
subjects.

Our summary of the results in the second half of Table XII:
shows that the sign was found post-paroxysmally in only two cases which did not also show it pre-paroxysmally. Three cases yielded the sign only in the pre-paroxysmal profiles, a finding which is in opposite direction from the one expected.

Our last set of hypotheses in this series was induced by Deri's claim that the test reaction M-minus is "... frequent in epileptics approaching outbreak of seizure." (33, p.141) This sign has serious implications for a dynamic theory of epileptic seizures if one reads the next quotation from Deri on the same page: "The similarity between the reactions of active criminals, manic psychotics, and epileptics before seizure is apparent in practically all the eight factors." Our next hypotheses serve to test the validity of this sign.

**Operational hypothesis IX a:**
M-minus reactions will be more frequent in a group of epileptics close to a seizure than in a group of epileptics in the inter-paroxysmal period or at greater distance in time from seizures.

The results of our comparison of the experimental and control groups are laid down in Table XIII. There is little difference in the incidence of this sign in the two groups; it is present in both. The Chi-square value yields a probability of .30 - .50

A more precise treatment was attempted with the following additional hypothesis:
### TABLE XIII

**INCIDENCE OF SIGN: M minus**

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of cases with</th>
<th>No. of cases without</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td>13</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi-square: .493 df. 1 $P = .30 - .50$

<table>
<thead>
<tr>
<th></th>
<th>Post-paroxysmal</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of cases with</td>
<td>No. of cases without</td>
<td></td>
</tr>
<tr>
<td>Pre-paroxysmal</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square: .33 df. 1 $P = .50 - .70$

**Chi-square** .493 df. 1 $P = .30 - .50$
Operational hypothesis IX b:

M-minus reactions will be more frequent in the pre-paroxysmal than in the post-paroxysmal test profiles of the same epileptic subjects.

The second half of Table XIII shows that M-minus choices were found pre-paroxysmally in only one case without also occurring in the post-paroxysmal profile. No positive relation seems to exist between this sign and the pre-paroxysmal phase of epileptic patients.
CHAPTER VIII

DISCUSSION OF RESULTS

The preceding pages, outlining the factual findings of our study, need some commentary beyond the simple statement that all our hypotheses have failed to be proven correct. Nine major aspects or implications of Szondi's and Deri's dynamic theories of epileptic seizures could not be supported by an experimental technique which was singularly based upon Szondi's directions and which utilized Szondi's own, supposedly sensitive tool, under natural circumstances such as the occurrence of spontaneous epileptic seizures.

We repeat at this point that the present study is concerned with the dynamic aspect of Szondi's viewpoints in epilepsy, and that the problem of the existence of a typical epileptic personality in its more durable aspects is only remotely connected with our focus of interest. It was with this restriction that we proceeded to test in several ways the fundamental assumptions of Szondi's theory, that epileptics show from one seizure to the next a characteristic sequence of psycho-dynamic processes, a rhythmic series of psychic events which find their culmination in the paroxysmal symptoms but which are also thought to be present, in subdued form, in the symptom-free stages of the epileptic's behavior. It is this assumption of a continuous psychic abnormality that underlies most of the current theories of psychological seizure dynamics, and it is just at this point that the link which ultimately relates seizure
dynamics and an hypothesized "epileptic personality" is to be found. Only in this latter connection may our findings have any bearing upon the second problem.

At any point of our study we made efforts to stay in the closest contact with Szondi's and Deri's frame of reference. We administered his test in standard fashion with approximately 24-hours intervals between successive testing; we did not manipulate patients so as to deliberately provoke symptoms, but used only spontaneous seizures of a well established epileptic nature; and we used a diversity of groups so designed that each would be more typical or representative of any one class of Szondi's tri-phasic dynamic classification of epileptics than the one with which it was to be experimentally confronted. These groups were not sampled by artificial methods, but constituted a chance bifurcation of one larger group which adequately represents a male population of veterans seeking diagnostic and therapeutic treatment for an epileptic condition of average severity, not so marked as to require institutionalization.

Our pairs of hypotheses were designed to fit Szondi's tri-phasic classification of epilepsy. Each member of a pair was meant to be supplementary to the other, so that each underlying notion could be tested at two levels. They have to be seen in relation to each other; not one, but both members of a pair would have to be substantiated by the experimental data in order to be proven correct.

The results are thus completely negative and the implications of this have to be seen in their just proportions. Their immediate
impact is that they leave Szondi's psychodynamic theory of epileptic seizures without the experimental support from the Szondi test that its author has claimed to exist. The only link between the theory and the capacity of the test to demonstrate it still exists in Szondi's report on a single case, which is illustrative at best, but in no way convincing.

Several alternative interpretations of our results should be considered. The fact that Szondi's psychodynamic theory of epileptic seizures and his test system are at some points interwoven entails various possible points of criticism. These will be discussed in the following order, adapted to the three different types of hypotheses employed in this study:

(1) Hypotheses I and II, designed to test Szondi's psychodynamic theory of seizures in epileptics;

(2) Hypothesis III, designed to check the specificity of Szondi's test factor E in epilepsy;

(3) Hypotheses IV - IX, designed to test the validity of five test signs which are claimed to possess discriminating power for the three hypothesized psychodynamic phases of the epileptic syndrome.

I. The first two pairs of hypotheses dealt directly with the testing of the psychodynamic theory of epilepsy. They were analogous to the ones used in Odes' study on the impact of the reading of a horror story and the capacity of the Szondi test to measure changes in the psychic
tension household due to an induced emotion. Odes' study resulted in significant differences between an experimental and a control group, which speaks in favor of the capacity of the Szondi test to register real changes in the psychic tension economy of people. Our pairs of hypotheses, though adapted to the requirements of the epileptic groups, were practically identical to those used by Odes and it is because of this precedent that we feel that our negative results may well be brought to bear against the validity of Szondi's theory of epileptic seizure dynamics.

But before one is justified to reject the theory on the basis of these data one must for a moment assume its correctness, and ask why the Szondi test did not demonstrate it by means of the two elementary deductions which led to positive results in Odes' study. As a first interpretation it may then be proposed that the capacity of the Szondi test to assess non-epileptic psychodynamic processes outweighs its capacity to assess the more specific dynamics of epileptic seizures, to the extent that the latter cannot become sufficiently explicit in the test profiles. This would mean a definite restriction of the diagnostic scope of the test which makes it unsuitable for longitudinal studies of epileptic seizures.

A second question may be raised with respect to the possible differences among groups of epileptics. One is here on uncertain ground because of Szondi's failure to describe in more detail the kind of epileptics on which his clinical observations were based and which led him to formulate his dynamic theory. In the absence
of detailed data one cannot know whether his groups of epileptics were a representative sample of the epileptic population, as our group presumably is. Moreover, recent advances in neuro-psychiatric diagnostics, such as electroencephalography and the wider application of pneumoencephalography, which have greatly facilitated the differential diagnosis between epilepsy, hysteria and paroxysmal behavior disorders, justify a margin of doubt about the adequacy of the diagnoses in Szondi's patient groups. Szondi's nomenclature as well as his use of photographs taken from now outmoded psychiatric textbooks are further reasons for being skeptical towards the correctness of some of his diagnostic labels.

A third point concerns the reliability aspect of the Szondi Test and its relation to the second pair of hypotheses which we tested. Even if one agrees with Holt's (52) statement that phenotypic and genotypic reliability should be distinguished in deep-level tests like the Szondi, it is difficult to consider the validity and the reliability of the test separately because Szondi has made some degree of "unreliability" an integral part of his test technique. The test profile is expected to change somewhat on each subsequent administration. How much it may normally change is, however, an unsolved problem. All we know at the present is that neurotics with a great deal of rigidity, such as obsessive-compulsives, show very little change from one profile to the next, whereas David & Rabinowitz' study (28) has shown that schizophrenic patients yield an unusually great measure of change which exceeds considerably the changes found in a
normal control group composed of hospital personnel. Our second set of hypotheses constituted logical deductions from what little knowledge exists on this point, but received much reinforcement from Odes' application of a similar measure of change to assess the effects of the reading of a horror story. The fact that our paroxysmal instability scores did not significantly exceed those of the successive inter-paroxysmal changes poses the following questions. First, it may mean that epileptics cannot be properly placed on a continuum between the two extremes of obsessive-compulsive neurotics and paranoid schizophrenics as regards the psychodynamics of their paroxysmal symptoms. Second, the quantity of psychodynamic changes along with epileptic seizures may not be comparable to that after an induced emotion of horror, but in that case one can no longer consider seizures as an "emergency exit from instinctual dangers." Third, a number of unknown factors in the reliability of the Szondi test affects the test responses of various neuro-psychiatric groups selectively, possibly by obscuring the changes in epileptics and enhancing the quantity of change in normals, such as in Odes' groups, and in psychotics, such as David & Rabinowitz' group. A fourth, and more economic interpretation of our results lies finally in the assumption that epileptics are apparently subject to psychodynamic changes unrelated to their paroxysmal symptoms, but which may often be of greater magnitude than those taking place along with the seizures. This alternative seems also to receive support from the many observations on irritability and unpredictable, abrupt changes in mood as an integral
part of the so-called epileptic personality, quite aside from the occurrence of seizures.

II. Our third pair of hypotheses was designed to test the specificity of Szondi's test factor E. There is at this point on obvious overlapping between Szondi's psychodynamic theory of epileptic seizures and the design of his test. Szondi (95, p.31) has pointed out that the selection of suitable photographs for the E-series of his test took place in close contact with the observed reactions of known epileptics. He found empirically those pictures which were avoided by manifest epileptics or persons with an epileptic predisposition (Szondi's psychiatric orientation is primarily a genetic one) immediately after a seizure, but which were either positively or negatively chosen by epileptics in the inter-paroxysmal phase. And it is because of these findings that he gave to the E-pictures their diagnostic significance, directly borrowed from clinical or intuitive judgment. This procedure, though it may seem legitimate for the purpose of test construction so long as one of its aims is to classify patients according to the predominant features of their test profiles, implies a peculiar difficulty in the case of negative or contradictory findings. As long as the proposed dynamic theory of epileptic seizures is not validated by other means than Szondi's E-factor, the interpretation of all test scores in E found on epileptics rests exclusively on the unverified clinical impressions from which the theory was abstracted. If various groups of epileptics in different phases of their syndrome would yield uniform
responses in E, in agreement with the empirical findings employed in the test construction, one would at least have a means of discriminating between the three assumed phases of the syndrome in so far as then a consistent time relationship between seizures and the psychic processes behind the test responses would have been demonstrated. But even this would leave the question of the correctness of the interpretation of the three phases unanswered. Negative results, however, when considered at the level of the employed deductions from theory, strike at both the theory and the deductions when the latter are, as in this case, insufficiently independent of the former. All we can say in defense of this part of our experimental design is that we used Szondi's own deductions in order to create a situation most favorable for obtaining positive results.

Because of the element of circularity in the testing of this pair of hypotheses one may argue that our experimental design thus provided means of testing whether Szondi's and our own epileptic groups are samples of the same epileptic population. Since our testing procedures were identical to those of Szondi it would appear, then, that some difference between the two groups must exist with respect to their reactions in the E-factor. Rapaport (79) reported in a preliminary paper that some epileptics, tested at the Menninger Clinic, showed indeed E-factorial reactions such as predicted by Szondi, especially an open E-reaction after seizures. Actual figures were not given in this report, but the findings seem supportive of Szondi's contentions. The inference from our study must be, then, that epilep-
tics may differ in the psychological processes leading to choice reactions in Szondi's E-factor. This implies that generalizations from Szondi's group to all epileptics are unwarranted. We must make this point more stringently since there are reasons to believe that our epileptic groups were in all known respects a reasonably representative sample of the epileptic population and probably more typical than Szondi's. Studies of intelligence levels in epileptics, for instance, have shown that marked differences exist between groups of institutionalized and extra-mural patients. Differences between these groups also exist with respect to some Rorschach determinants (57). Our data seem thus to have pointed up a difference between groups of epileptics which may be brought to bear against the general applicability of Szondi's theory of epileptic seizures, but which, at any rate, detracts from Szondi's claim that the observed E-factorial reactions of epileptics have proven the correctness of his theory.

With respect to the Szondi Test this may mean that, for instance, the factors E and HY are insufficiently distinct, or that the E-factor contains other than epileptic elements. It may very well be that this factor measures what it, according to the diagnostic meaning is supposed to measure: namely the way in which a person handles negative affect, or the accumulation and release of violent emotions. One meets people with this as their predominant problem in clinical practice. But in the light of our data and on the further assumption that Szondi's theory of epileptic seizures is correct, it seems unwarranted to take
epileptics as the exponents of such forms of maladjustment. As long as the psychodynamic theory of epileptic seizures is not proven correct one may reasonably assume that Szondi's test factor E indicates temper tantrum behavior, and one may then try to study to what extent representative groups of epileptics do show the dynamics of temper tantrums in their test responses.

III. Hypotheses IV - IX were designed to test the validity of five test signs developed by Szondi and Deri and claimed to possess discriminating power for the assumed three phases of the epileptic syndrome. They are not only important for their predictive quality, but they also provide means of testing Szondi's tri-phasic theory of epileptics, which he shares with some clinicians.

It is opportune here to point out that Szondi's tri-phasic theory is not necessarily identical with the formulations of those psychoanalysts who found a build-up of aggressive tension just before, and a discharge or release of this tension with seizures in epileptics. For the latter, these may be rapid processes with sudden increases of tension a few minutes before the attacks. Szondi's theory, however, is more akin to the notions of some clinicians who feel that these increases of tension and the resulting mounting aggressiveness are relatively slow processes, stretched out over days. This distinction between a rapid, sudden increment and discharge of tension, and a slower cycle such as Szondi assumes is important in the consideration of our results, because one might argue that we failed to test the patients
at the correct highs and lows of their assumed tri-phasic tension curve. In view of the fact that all of our pre- and post-paroxysmal test profiles were obtained within 24 hours (in some cases even 15 minutes) before and after a seizure, this possible objection is not likely to hold ground if one is aware of Szondi's assumption of a moderately slow curve. Szondi's theory is not formulated in terms of suddenly arising psychic conflicts with abrupt upheavals of tension, but in terms of chronic, moderately slow increments of aggressive energy which characterize the epileptic personality throughout his life and for which he seems to have an hereditary predisposition. One may safely assume, therefore, that time elements have not influenced our results.

In the case of these six hypotheses the kind of deductions from theory are probably not at fault. They are of Szondi's and Deri's own making, and were established by them in full cognizance of their theory of seizures as well as their knowledge of the test instrument at large. Moreover, these deductions are not contaminated by the aspect of circularity which exists in relation to the E-factor and our third pair of hypotheses, since the proposed signs are based on the remaining seven test factors or combinations thereof which were designed independently of the theory of epilepsy.

The failure of these six signs to differentiate between a pre-, post- and inter-paroxysmal phase of our epileptic groups may therefore well be used as evidence against the validity of Szondi's tri-phasic theory of seizure dynamics in epilepsy. But the alternative interpre-
tation, that some difference between Szondi's and our own epileptic groups is responsible for the lack of discriminatory power of these signs in our study, may still be maintained. This would imply, however, that the six signs have no general validity for all epileptics and that their predictive value in an individual case of epilepsy is minimal at best.

Out of these three chains of reasoning emerges finally one conclusion. Little factual knowledge exists with respect to the validity of the Szondi test, and in the absence of a clear demonstration of its truth, Szondi's theory of the psychodynamics of epileptic seizures is no more than a speculative, preliminary formulation of some scattered observations. In their manuals to the Szondi Test, however, both Szondi and Deri propose this theory with a certainty as if it were well established and describe on page after page how certain aspects of the test have proven its general validity. This claim, which is persistent throughout their works, that the Szondi Test has demonstrated the correctness of the theory of seizures now appears as a dangerous dissemination of unproven opinions, since it is against this claim that our negative results can be validly directed.

At the heart of Szondi's theory, as well as his and our own deductions from it in terms of the variables of the Szondi test, lies the conviction that there is a psychosomatic specificity in the make-up and reaction patterns of epileptics. This conviction
has prevailed in the study of practically all disease entities considered psychosomatic, as a working hypothesis. The failure of the Szondi Test to show in our epileptic groups any tendency towards a well-circumscribed, universal reaction pattern around the time of seizures does not definitely disprove, but does form one argument against the validity of the specificity hypothesis in epilepsy. This argument receives considerable strength from the growing conviction among all sorts of specialists in epilepsy that epilepsy can no longer be considered a disease entity per se, but constitutes only a symptom common to a variety of underlying neurological disorders.

Finally, the validity of the Szondi Test, in so far as this test is based upon the specificity hypothesis in epilepsy, appears to stand in need of much further research. Its reported capacity to be of aid in the diagnosis of epilepsy is contradicted by the findings of this study, and its use for this purpose must be discouraged.
CHAPTER IX

AN EXPLORATORY STUDY WITH SZONDI'S TEST

Though the two preceding chapters have shown that our data give no support to Szondi's psychodynamic theory of epileptic seizures, there still exists the possibility that Szondi's test-instrument may well be one of the tools to aid in the advancement of knowledge about the psychic correlates of the epileptic syndrome, and that it may be of some help in replacing theoretical speculations by systematic assessment of facts. The deductions from theory which we have employed so far have by no means covered all aspects of the Szondi test, which is not designed to test epileptic characteristics alone, but which is a general psycho-diagnostic instrument. Most of the measures which we used presuppose in some way or other the existence of a typically epileptic personality and a typical complex of psychodynamic factors in epileptic seizures. These are offshoots of the specificity hypothesis which underlies most psychosomatic studies. But since our formal measures failed to show a specific constellation of variables for epileptics, and, moreover, failed to demonstrate a tri-phasic course of psychodynamic events, it may be wise to give up the assumption of specificity in order to increase the possible range of new positive findings. There is also a distinct advantage in bringing scattered individual observations under one denominator, and to use the standard vocabulary of objective test scores to replace the various languages of individual observers. Data obtained on many patients can then become comparable. Some unique features of the Szondi test, moreover, would seem to make this instrument rather suitable
for such a purpose.

In the first place this test is, of existing personality tests, the one best suited for longitudinal studies since its administration is not time-consuming and because its learning effect would seem less than for instance that of the Rorschach Test or Thematic Apperception Test which require so much active cognitive structuring. And longitudinal studies, consisting in the repeated testing with the same instrument, seem the primary requirement for an objective study of the psycho-physical correlates which constitute the psychiatric problem of paroxysmal disorders such as epilepsy. For an adequate study of dynamic processes one cannot use "static" tests; one needs instruments which are so designed that they can follow at least the more important articulations of these processes in the course of time.

A second reason is, that the Szondi Test yields objective test scores. One of the major criticisms of psychiatric case reports has been that they do not adequately distinguish between observations and interpretations and that the factor of the investigator's "personal equation" is insufficiently controlled. This difficulty can be circumvented by casting observations in a uniform system of test-scores which are unambiguous, and which provide a basis for, but do not contain, interpretations.

A third point of considerable methodological importance lies finally in the fact that serial testing with such an instrument as the Szondi Test can equally well assess the facts at any point in time of the epileptic's phasic syndrome. For the proper study of
paroxysmal symptoms this is an essential requirement: the facts should be gathered with close attention to every single point on the time line along which the psycho-dynamic processes are expanded. Though this may seem a commonsense consideration, it is still opportune to make specific mention of it at this point, because there is a conspicuous lack of post-paroxysmal observations in the psycho-dynamic literature on epilepsy.

It is with these considerations in mind that we plan, in this chapter, to give a fuller analysis of the test findings on some of our sixteen patients who experienced one or more seizures during the tested episode. In the present state of speculative theory-formation and astounding lack of unequivocal observations it may be of distinct value to report in more detail on some cases, not for the sake of proving or disproving a theory, but in order to illustrate various kinds of cases one may encounter in practice. On the basis of such exploratory studies one may then be able to outline requirements for a better methodology in the testing of current theories and for future research, a goal that we shall reserve for our last chapter.

We mentioned earlier that certain differences between our groups were observed in a direction opposite to the one hypothesized, but not reaching the 5% level of confidence. Though this means that from a statistical point of view such differences are simply in the order of chance occurrences, one should not overlook the importance of these findings for theory. They do mean that one should go beyond the state-
ment that they fail to support Szondi's theory of seizure dynamics, and that one should attempt to specify in what way the theory may be modified in order to encompass also those cases which reveal contrary tendencies. Chapter VII indicates which these tendencies are. Those relating to hypotheses I and II seem most pertinent: loaded and open test reactions are more frequent in the post-paroxysmal than in the pre-paroxysmal group, whereas the Szondi Instability Scores proved greater for the control group than for the experimental group. Moreover, the degree of instability parallel with the occurrence of seizures was for most patients within the range of their seizure-free instability. These facts suggest that for a number of epileptics the seizures, spectacular as they may seem to the onlooker, may be of less emotional significance than some upheavals of non-ictal origin or consequences. On the other hand, the slight predominance of open and loaded reactions in the post-paroxysmal group suggests that the seizures themselves may in a good many cases be a source of emotional upheaval rather than a consequence of previous emotional disequilibrium as registered by Szondi test scores.

The present study does not permit an assessment of the proportion of such cases on the total epileptic population. But even when after proper investigation this proportion would turn out to be small, the mere existence of this class of patients within our groups brings a methodological principle into focus which may well account for the one-sidedness of current psychodynamic theories of epilepsy. When we spoke of a conspicuous lack of thorough post-seizure investigations
in the psychiatric literature on epilepsy, we intended to bring out what we can now say more clearly, namely that epileptic seizures are conventionally seen as response-processes to some type of emotional disequilibrium that existed before and to which they bring some sort of temporary relief. The salient feature of this train of thought is that it starts with only one behavioral datum, namely the seizure. The next step is an inference based upon an exclusively retrograde movement from additional interview data which are highly selective in nature and which often escape behavioral criteria. Unless these inferences are supplemented and checked by corresponding data from the post-paroxysmal period, the perspective in which they place seizures (and in turn the selection of observations thus created) would seem to be determined by the theoretical outlook of the investigator rather than by the nature of the observation itself. In contrast, such serial data as are gathered with the Szondi test would permit a more objective view of seizures as interruptions in the normal time-sequence of consciousness and behavior, since one can obtain with equal validity comparable data on the pre-seizure and the post-seizure processes. The baseline for inferences concerning the possible psychological significance of the seizures themselves lies just in the comparison of pre-seizure and post-seizure data; if they are drawn from pre-seizure data only they cannot be convincingly defended against any accusation that they are based on a process of post-hoc reasoning. Moreover, some of our test results now suggest that theory formation has not only been speculative, but also that the speculative element in the inference has been further enhanced by the "selective inattention", that is, the exclusively retrograde out-
look of investigators. And this is clearly a matter of methodology, on the soundness of which depends the perspective in which one will see epileptic seizures. And this perspective, in turn, will determine the type of observations that one can make.

We selected from our material four cases which illustrate our point concretely. They were chosen on the one hand to demonstrate in greater detail of what aid the Szondi Test can be to the assessment of psychodynamic data in epilepsy; on the other hand to add contrasting material to the one epileptic case used by Szondi to document his theory. Their value, if any, is thus purely heuristic, but this is exactly what seems most needed in the present state of affairs.

Case No. 1 concerns an unmarried art student in his twenties. Five years ago he developed focal motor seizures without march, diagnosed as symptomatic epilepsy. He is of average intelligence, but his insight into his illness does not seem up to par. The neurologist attending his case felt that he displayed much overt anxiety, and noticed that he seemed always preoccupied with other thoughts. He is the youngest in a rather large family; his father died several years ago. He left high school in the second grade, had some odd jobs and joined the Navy from which he returned home on a medical discharge shortly after his father's death. He then finished high school on the G.I.Bill, as a work student, and went to art school where he stayed for over two years. Just before completion of his studies he suddenly left school on account of his own dissatisfaction with his artistic
work. During the last few years, since his return from the Navy, he was prone to alcoholic bouts and was considered unreliable by his family, who used to think of him as a dependable, though somewhat seclusive child.

The Szondi test data yield the drive class: Sch P-plus, which is described by Szondi as denoting "mostly talented people who are unable to use their talents productively because they cannot divorce themselves from their incestuous love relations. They tend to fear their fathers whom they may see as persecutors." Further test data are:

Ego Vector: L Al, 5 Ep1, 1 Ep2, 1 F2.

Highest loading: m-plus, d-minus, hy-minus and plus-minus;
Lowest loading: k-open, s-open and plus, e-open, minus, plus;

The determining needs in this patient's personality are those for oral relationships (d-minus, m-plus) with a marked fear of losing the gratifying object. Tightly clinging to this, which seems to be an idealized dream-object (h-minus), he is conservative in his attitudes, fearing important changes in his life. He seems very reluctant to display his tender emotions (hy-minus) and is apt to have a certain shyness in all relationships, although underneath his attitude is demanding, almost forcing the world to meet his wishes. Autistic reasoning, the earmark of psychic inflation (k-open) may be expected. Having little need to keep his ego distinct from his inner urges, while yet his aversion of direct tender need display is great (hy-minus), one may characterize
him as having nearly retreated from the pressure of his incestuous longings, being in touch with reality mainly through regular ventilations of aggression (s-open or plus, weakly loaded) and a labile moral code which judges situations on the basis of anxiety. That the latter is always strong is borne out by the constellations in the P-vector (fluctuating e, hy-minus). It seems probable that this man's world is split into two camps: one of idealized, faithful, but primitively satisfying objects, and the other of remaining figures representing a threat to his oral strivings. Since reality is for the greater part filled with the latter figures, his clinging to the primitive will be stronger as he is more exposed to the threatening aspect of his world; conversely, the more he yields to his incestuous longings, the more he will feel constantly frustrated and threatened, with reactive aggression as the inevitable outcome. That such a situation must lead to constant anxiety, at times bordering on actual panic, is obvious.

Just prior to his seizure during the tested episode we observed a sharpening of his need to cling to his primary love object, concomitant with an upsurge of libidinal urges (h plus-minus) which could no longer be effectively rejected. Aggressive tension was at a low (s-open) suggesting that the patient was heading to a retreat from his real surroundings which would probably have elicited his hostility. But he seemed to have still sufficient reality awareness so as to keep from outer display of his tender longings.

Post-paroxysmally his libidinal tension was somewhat lessened and under effective, but extremely tight control (hy-minus, loaded).
Aggressive needs were at their lowest point of tension (s-open) and the need to control whatever hostile urges he might have felt was more strongly rejected. The need to cling to the object, though still strong, had somewhat lessened. The total P-vectorial constellation indicated a panic state (P minus-minus).

One may tentatively infer from these data, that along with the seizure, some libidinal tension was released, probably at the fantasy level. The seizure was at least preceded by an ambivalence in the patient's conscious attitude towards tender needs and a more desperate clinging to his primary source of gratification. But it is only in this specific set of need tensions that the seizure might have meant some relief. For the rest, the test findings suggest that his equilibrium had become only more severely disturbed after the attack: a state of actual panic, concomitant with the most rigid and forceful control attempts, and increased feelings of shame or apprehension (hy-minus) are in evidence. Together with this, there was a greater inclination to rid himself of any amount of hostility present in him (e-minus). Increased readiness for projection (p-plus) was also indicated. Now, even more than before the seizure, his world seems populated with threatening figures.

Short-term psychiatric help was offered during this hospitalization, but the patient seemed quite resistant to therapy and terminated his interviews abruptly after several weeks. The psychiatrist's notes describe the patient's mother (in the patient's perception) as a brilliant but always nagging, rigid club woman, very opinionated and hard set against any drop of alcohol in the house. Though resen-
ting her attitudes, the patient idealized her quite much in other respects and was quite demanding on her. His demanding attitude is further demonstrated by the fact that he let himself be supported by a brother for a considerable time, without showing any concern about this situation and without attempts to become financially independent. Throughout the interviews material came up indicating destructive impulses against the mother and the brother; compulsive ideas which the patient felt were alien to the feelings that he otherwise fostered towards these figures. He feared that his hostile impulses might become recognized by other people, and he took at times recourse to alcohol. Discussing sexual relations, the patient stated that they were necessary for good health, but that he could not seem to socialize with women. On the whole, the psychiatrist suspected the presence of a character disorder with strong impulsive-destructive trends, and associated with considerable overt anxiety. Though a vague connection between some of his feelings of anger towards his mother and the occurrence of his seizures was tentatively established, the patient's resistance terminated any deeper analysis.

The preliminary inference about the seizure, made in this case, should further be tempered by the facts that the paroxysmal SIS (6) did by no means exceed the patient's own seizure-free range (4-8) and that none of Szondi's pre-paroxysmal signs of discharge-readiness were confined to that phase, or present at all. On the contrary, Szondi's post-paroxysmal release indicators S-open and K-open were also present before the seizure, and the pre-paroxysmal tension sign E-minus, Hy-minus existed only post-paroxysmally and once inter-paroxys-
mally. There is thus little indication of an acute pre-paroxysmal conflict; from the point of view of felt emotions (the P-vector) the post-paroxysmal state would seem much more disturbed in terms of Szondi's standard interpretations of test constellations. Moreover, the last test profile in this series was in all essentials most like the pre-paroxysmal profile, with some of the problem factors even more strongly loaded, but was not followed by a seizure for at least several days. This is felt to illustrate our warning against one-sided inferences about events anterior to seizures; checking with the post-paroxysmal data takes away the element of necessity required to establish, even tentatively, a causal relationship between the seizure and its psychological antecedents.

Case No. 4 This is a man in his forties, divorced, with a history of grand mal seizures of about ten years' duration. He lost his job repeatedly on account of these seizures and spent most of his time during the past few years wandering around the country, supporting himself by odd jobs on farms. Shortly after the onset of his seizures he discovered that his wife was unfaithful; they divorced, the wife getting the custody of their children. A year before his recent hospitalization he underwent a left occipital craniotomy for the removal of an accumulation of hygromatous fluid, a tantalum plate being placed over the defect. Intracranial bleeding was diagnosed the next day, after the patient had fallen out of bed, and an emergency left temporal craniotomy was performed. After a good recovery he continued to have seizures, now partially of the psychomotor type. He had been
a heavy drinker prior to his operation, but has not done any drinking since. He now lives with his mother on a farm, both doing the work for the owner. He has an occasional contact by letter with his oldest child, much to his enjoyment.

The Szondi test data place this patient in drive class P-hy-minus, described by Szondi as "latent homosexuals and paranoiacs; masochists" as well as in drive class Sch-k-minus, described as "daydreamers and depersonalized people; autistic characters." Other formal data are:

Ego vector: 2 B1, 3 B2, 2 C.

Highest loading: k-minus, loaded; h-plus, loaded; s-plus, loaded;
Lowest loading: e-open; p-plus, open, minus; m-plus, open, plus-minus;
Intermediate: d-minus, open; hy-minus, open.

The three alternating ego-structures mentioned above have a common component in the role of the k-minus choices. It is, indeed, this very strong need to ward off or repress objectionable tendencies and psychic contents that seems of decisive importance in the shaping of this patient's personality. Readiness to accept prevailing moral standards, a certain detachment from his own emotionality, are thereby enhanced. The fluctuations in the p-factor, which seems under far less tension, show that the further regulation of inner-personal tensions takes place in contact with his environment, be it through conscious cathexis of realistic objects (p-plus, h-plus, s-plus) and the establishment of bonds with people (p-plus) or through unconscious projection (p-minus). Occasionally, however, there is absence of tension in the need to cathect objects (p-open), which suggests in combination with the continually strong tension in the k-factor, that repression may at times sufficiently eliminate his needs from direct outward
expression. This may mean that libido is used in compulsive symptoms, in other forms of symbol expression, or that narcissistic incorporation of libido takes place. The continual tension in the tender as well as aggressive-sexual needs (h-plus, loaded; s-plus, loaded) which are often disproportionate to each other and unequally regulated (e in flux; hy-minus) gives a hint that sado-masochistic behavior may be one of the channels through which energy is discharged. This implies, of course, a considerable susceptibility to guilt feelings and an intropunitive attitude, for which the test data give evidence enough in the almost constant combination of hy-minus and k-minus, loaded.

Analysis of the object-relationships suggests a need to cling for love and support to one object as the primary source of gratification (d-minus, m-plus). This is a counter-indication of overt aggression; it presupposes rather a somewhat passive attitude towards objects, though by no means a passive character (s-plus, loaded). The preservation of d-minus (once d-open) with its connotation of loyalty and conservatism, even in the face of realistic obstacles, seems indicative of a true fixation on his love object. This is further corroborated by the various positions in the m-factor: most often m-plus, which is indicative of a need for dependence (also h-plus, loaded), and m-open, suggestive of oral character traits which may become behaviorally manifest in an unstable and restless craving for oral objects. It seems likely that this oral fixation, conflicting as it is with the real demands of life, forms the key to this patient's excessive tension in the area of control. With an effective superego, such dependency needs cannot easily be consciously incorporated or synthesized, unless
one be willing to cope with a considerable amount of guilt, as a compromise. In that case one's aggression towards the love object (m-plus, open; s-plus, loaded) may become turned upon the self, balancing guilt feelings and promoting a more idyllic, seemingly more pure and acceptable bond with the object of fixation. There is considerable evidence from this man's life history and present behavior that this is the case.

Pre-paroxysmally, on the day of the patient's first seizure during the series, there was test-evidence of diffuse anxiety (e-minus, hy-minus) with a tendency to let negative affect accumulate (e-minus). But there was no greater than usual need for aggressive action, and the ego-vector indicated a self-control and self-critical attitude resulting in rather successful countercathexis (k-minus, loaded; p-open). A slight increase in tender needs was apparent (h-plus, loaded). It seems, then, in this context, that the diffuse anxiety was not primarily determined by an increase in need-strength, the less so since the tension in the tender-sexual and aggressive needs was even stronger after the seizure. The anxiety feelings may well have been in the nature of a more or less objective fear about his shakiness and restlessness on that day, which have often forwarned the patient of an impending seizure.

Post-paroxysmally, there was some increase of sexual tension (h-plus, loaded; s-plus, loaded) and an exceptionally great tension in the need to ward off non-accepted strivings by repressive control (k-minus, loading of six). Successful countercathexis, however, was not achieved (p-plus) and the total characteristics of the test pro-
file suggest that the patient must have felt an acute psychic discom- 
comfort and tenseness after this seizure - greater than is suggested 
for the pre-seizure state. The draining of the m-plus reaction to 
open-m indicates that dependency needs were also much closer to ex-
pression, probably even part of the manifest behavior. An active search 
for support seems obvious in such circumstances.

A second seizure two days later failed to produce changes in the 
test profile from the post-paroxysmal manifestations just described.

A psychiatric consultation shortly afterwards resulted in an 
additional diagnosis of: Mild anxiety reaction, with emotional insta-
Bility, secondary to organic brain damage.

The psychological report, based upon other than Szondi test data, 
described the man as a sensitive, easily moved person who makes little 
attempt to master anxiety-arousing situations actively. Under the im-
pact of strong emotional stimulation he tends to lose his grasp of 
things, and especially when fundamental love relations are implied his 
reactions have the characteristics of the burnt child who withdraws 
from the source of pain and whose attention has to be diverted. This 
is reflected in his recovery capacity as shown of the Rorschach test: 
steered by a well-developed reality sense he recuperates from initial 
shock by paying attention to other aspects of his world, in relation 
to which he often makes good for his failures elsewhere. One may infer 
from this a rather well-developed ego which, though at times flooded 
by anxiety, is on the whole able to maintain its boundaries, albeit by 
means of selective inattention and repressive control. From interview 
material it appeared that religious experiences played a large role in
the patient's personality functioning.

The Szondi Instability Scores for the paroxysmal changes in choice were 7 and 4, all well within the patient's own range, which was from 4 to 11 for the entire series of profiles. This serves as a general warning against assuming too much emotional upheaval along with the seizures. In this case, however, several of Szondi's pre-paroxysmal tension signs were present, such as the plus-reactions in the sexual vector, the e-minus, hy-minus choices, and a minus-e reaction which changed to open along with the seizure. But the point is that these signs were also present in the post-paroxysmal profiles, even with increased loading, except for the changed choices in e; and that the loading in the k-factor, indicating attempts at self control, underwent a sharp increase after the seizure. The further fact that the second seizure effected hardly any change in the post-paroxysmal profile of the first seizure makes one wonder whether there is any justification at all to interpret the pre-seizure findings as indicative of a state of "seizure proneness" as the result of psychic conflict. On the contrary, our analysis of the patient's anxiety feelings in the light of Szondi's standard interpretations led even to the much more cautious inference that his feelings may well have been in the nature of an objective fear, warranted by realistic aspects of his situation.

For reasons of contrast, we shall now present a case in which the psycho-dynamic processes as gleaned from the Szondi Test data seem to
fall better in line with the assumptions of current psychiatric theories on epilepsy.

Case No.13 This single man in his middle twenties suffers from epileptic seizures, consisting of an acute attack of combative and destructive behavior described as "rage reactions". Their onset was two years ago. Since that time he has at times been hospitalized on closed wards. There is no aura, but the patient feels that the seizures usually occur when he is inside a home or an enclosed place and that they are often precipitated by somebody from the outside coming into the room; he will then feel crowded in and experience a marked nervousness, generalized sweating and a sensation that he cannot breathe. After these premonitory symptoms he walks in and out, and on many occasions has started to swing at people.

He is the oldest of three siblings. His mother has been hospitalized for two decades as a psychotic; his father died several years ago, probably as an alcoholic. After the mother's commitment the children were taken care of by the grandparents, who were abusive and sadistic. Because of this, the children were sent to different foster homes, where adjustment was also difficult. The patient's schoolwork suffered under those conditions; he left school at an early age and began to work for his own support. Since adolescence he has been with a married couple who took a more active interest in him, and who were a source of considerable comfort to him. Throughout his life he was rather seclusive and always resented newcomers into the household. It is said that he identifies with his sick mother, who he feels has been mistreated.
The Szondi test data yield the drive class C-m-minus, described as the "class of the eternally deserted people, or hypomaniacs."

Other formal findings are:

Ego vector: 4 B1, 1 B2, 3 F2, 2 C.

Highest loading: h-plus, loaded; s-plus, loaded; e-plus, loaded;
Lowest loading: d-open; p-open;
Intermediate: hy-minus; k-minus, open; m-minus.

This case is in all essentials such a classical example of Szondi's category of the "hypomanic reaction" that we can do no better than translate, more or less freely and abbreviated, Szondi's own description of this type:

"The personality and the mental disease syndrome of members of drive class C-m-minus are determined by the unsatisfied need to cling. The phylogenetically oldest need of clinging acts as the most dynamic latent factor in the instinctual life of these people. The latent, unsatisfied need to cling impels them to compensate somehow for their losses, since they cannot bear the horror of isolation and the sufferings of being cut off from the world. Among these people are children with acute aggression in school; anxiety neurotics, stutterers; and deconcentrated, always hurried adolescents who present an educational problem; hypochondriacs, hypomanic and manic adults, and criminals of various types, including murderers. All these syndromes have to be seen as means of escape from the threatening danger of being cut off. But aback of all these phenomenologically different clinical pictures lies the same danger, caused by the inability to cling to someone...."

Its clinical signs are the so-called hypomanic reaction (C open, minus) which is not necessarily identical with the usual psychiatric picture of hypomania or mania, though it has basically the same dynamic constellation. From a depth-psychological point of view the hypomanic reaction is characterized by the following:

(1) the person is cut off from his primary love object (m-minus);
(2) he grabs indiscriminately for value objects in his world (d-open) without the ability to sustain relationships with them or to possess them actually;
(3) as a consequence he becomes deconcentrated, unstable, impatient and restless;
(4) since he knows that he has definitely lost the object of his need to cling he becomes aggressive, and turns his sadism to the environment in which his need to cling was frustrated.

The pathological syndrome in the Szondi Test consists of the following traits:

m-minus: the person feels deserted, cut off from his love object;
d-open: a grabbing, hurried, restless behavior; disinhibition;
k-minus: loss of the capacity to form ideals; the person has no object-ideal and does not know what he would like to have;
s-plus: aggression against the world.

(95, pp.237-238)

Not only are all these essential features encountered as constant determinants in the ten successive test profiles of this patient, but other features amplify their significance in this case. The tension in the two sexual need components, the need for tender love and the need for activity and aggression, is excessive (h-plus, loading of four; s-plus, loading of five), as a sign of the patient's inability to release the tension of these needs in his daily living. His essentially concrete and extraverted orientation is unquestionable throughout (h-plus, s-plus), suggesting that he will tend to deal with his conflicts in obvious behavioral forms, in close contact with environmental objects (p-open). It is mainly in the degree of inner and outer control that this patient's syndrome can be distinguished from a full-fledged manic psychosis. Although driven to aggressive outbursts by excessive need-tension, he seems at heart an ethical character whose superego seems over-functioning rather than lenient (e-plus, hy-minus, k-minus) and who
likes to live up to social expectations (Sch-vector minus-open and minus-plus). Though he seems able to maintain an emotional equilibrium for some time, the cost of this in terms of subjectively experienced tension seems high and at times nearly unbearable (Sch-vector open-open at times). The facts of this man's life, his history of emotional neglect in childhood and throughout adolescence, and the harsh treatment he received from relatives after having been deserted by his mother (and his father), are ample demonstrations of the correctness of Szondi's fundamental interpretation of this reaction.

One day prior to this patient's seizure during the tested episode there appeared for the first and only time a minus-tendency in the hitherto positive e-choices (e-plus-minus, loaded), associated with an open reaction in the m-factor. This must be interpreted as indicative of an acute experience of conflict over aggression, as an indecision about controlling or not controlling aggressive urges. Deri remarks that in such cases the strongly functioning superego may be felt as a foreign agent, not fully incorporated within the personality and which one hence need not necessarily obey. This seems a likely interpretation in view of the concomitant θ-open-open reaction, which points to a clearcut hedonistic orientation: an indiscriminate object-relationship based upon the quite demanding expectation that "someone will take care of him as his mother once did" (33, p. 162). It is a state of infantile demandingness and expectancies in which one would logically expect a lessening of control over strong drive urges.
Within one day after this seizure, the tension set up by the undecisive attitude towards gross negative affect (e plus-minus, loaded) was released (e-open) and the hedonistic object-orientation (C open-open) was replaced by the usual feelings of isolation and desertion by the love-object, now all the more acutely experienced (d-open, m-minus). (The loading in the m-factor increased to five). The aggressive need-urges, however, were not perceptibly lessened (s-plus, loading of five), a fact which makes one wonder about the otherwise very likely interpretation that along with the epileptic attack a discharge of aggressive need-tension had taken place (e-open). Yet, it may be that this was actually the case, and that the excess of aggressive need-tension registered after the seizure is a new upsurge of hostility as a response to the newly felt desertion by the love object. But whatever the deepest psychological meaning of this seizure was, it seems clear that even if it were an aggressive tension release, its results seemed to nullify this response as a way out of chaos. In addition to the deepened sense of loneliness and desertion, there are indications that the impending danger of a breaking-through of strong needs into consciousness is greater than before (p-plus) and that the total post-seizure condition is still hard to cope with.

The psychological report from other than Szondi Test data mentions that the patient's reactions to various projective tests showed extreme rigidity such as blocking and mutism, or angrily leaving the examining room. He could only give one response to the Rorschach Test, while he showed in the testing-the-limits procedure adequate perceptual and
conceptual abilities. He was felt to suffer from a severe anxiety reaction, with strong aggressive tendencies which he was unable to express in an acceptable fashion. Later psychiatric consultations established the additional diagnosis of Acute Anxiety Reaction, for which he now receives psychotherapy.

The paroxysmal Szondi Instability Score in this case was six, the inter-paroxysmal scores ranging from three to seven. The likelihood of discharge of aggressive need-tension along with the seizure (whether or not the seizure itself was psycho-dynamically precipitated remains an open question) would seem particularly great in view of the fact that the loading in both the h- and the s-factor continually approached the limits of what the Szondi test can measure. Though this imposes a limitation on the exactness of measurement, it also facilitates the inference that real differences in need-tension may be imperceptible at this high level of tension. At any rate, the whole test constellation suggests a continual proneness of this patient to act out and to solve his conflicts in direct contact with realistic objects. The vicissitudes of the e-factor in this case, showing inter-paroxysmal plus-reactions, a pre-paroxysmal plus-minus choice, and an open reaction just after the seizure, are entirely in line with Szondi's predictions. It should be noted, however, that all the evidence points in this particular individual to an existing problem in aggression, such as Szondi hypothesizes for all cases of epilepsy!
Our last case is presented because of the fact that the patient experiences during the testing period three seizures, sufficiently spaced so that several inter-paroxysmal profiles between them could be obtained. A striking similarity between the pre-paroxysmal test reactions of the three seizures, as well as between the three post-paroxysmal profiles was observed. This suggests that pre- and post-seizure testing for more than one seizure on the same patient may provide a further check on the validity of inferences concerning the meaning of the attacks.

Case No.15 This is the case of a patient in his twenties, whose first epileptic seizure occurred at the age of seventeen. It was a grand mal attack, several months later followed by another one and from then on with increasing frequency. A short stay in the military service was terminated by a medical discharge. None of his seizures have been preceded by any warning; he has sustained many minor injuries during his attacks.

He is the oldest child of parents who divorced after six years of a quite stormy marriage. His mother re-married a few years later. The patient had rather frequent temper tantrums in his early years and has been of rather unstable emotionality throughout his life. His scholastic record began to deteriorate in high school, shortly before the onset of his seizures. He has been in many hospitals for the control of his seizures, but without much result. In the intervals he had several jobs, usually terminated by a seizure.
When he was 23 years old, he was seizure-free for almost one year and made an attempt to attend college, but he withdrew after a few months on account of re-occurring seizures. A psychological report around that time calls him insecure, self-conscious, markedly maladjusted and with numerous psychoneurotic traits. During his present hospitalization, he was felt to be argumentative and surly. He often had crying spells, and needed much encouragement from the hospital staff.

The compiled Szondi test results yield the drive classification P-hy-minus, described as "latent homosexuals; persons who cannot fully satisfy their need to assume the role of the opposite sex. Masochists." An alternative classification is in C-m-plus: "people who are prone to anxiety about losing their love-object. 'Clingers' who are never sure of possessing their love-object." Other data are:

Ego vector: 5 Al, 1 B, 4 C.

Highest loading: m-plus, h-plus, e-plus-minus; p-minus;

Lowest loading: k-open, d-open;


The drive-classes of Szondi's system in which this patient is put are those of latent homosexuality and of the "eternal clingers" who feel never secure in possessing their love-object. The predisposition for serious forms of psychopathology is great in both classes, according to Szondi's statements. - Though grave pronouncements like this should come at the end rather than at the beginning of a psychological report, a single glance at this patient's reactions in the ego-vector (five times open-minus; four times minus-minus) will suffice to
notice an ego-functioning in a state of considerable breakdown. The Sch-open-minus choices are genetically the earliest ones, and are hardly found among normally adjusted people. They indicate the least possible structurization, or a relative lack of functional boundaries between consciousness and the unconscious, to the effect that needs are too close to the motor system and the resulting behavior tends to be quite impulsive. Persons like this are guided by their emotions; they lack normal capacities to deflect the original course of their needs towards commonly acceptable goals and in socialized forms. Much projection of need-tendencies is to be expected since insight is, of course, at a minimum and the tendency towards immediate action maximal. Deri has remarked that such subjects are often very sensitive, even to slight cues, but that they lack the ability to verbalize their processes of perception and reaction.

The occurrence of Sch-minus-minus reactions in about equal proportion to the one just described is an indication that this very fluid, nearly unstructured ego-organization is actually the result of a breakdown of firmer structures of which vestiges are still existent. It shows that the patient can - under proper circumstances - operate at a near-normal level, warding off raw impulses and modifying their course in line with prevailing social norms, only moderately repressive and moderately projective. This by itself is one counter-indication of psychosis; the low frustration tolerance indicated by C-open-plus, loaded, and P-plus-minus or minus, however, is a factor which may bring a severely neurotic form of functioning at times close
to more serious forms of pathology.

The clue to the patient's ego-functioning lies in the association of his states of disintegration (k-open, p-minus) with high tension in tender-sexual needs (h-plus, loading of five). His acceptance of this strong, feminine-sexual urge with an accompanying rejection of aggressive tendencies (s-minus or plus-minus) brings his passive-homosexual orientation to the fore, which seems truly in the nature of an inversion of the drive goal. Whenever this sexual conflict is close to its extreme, the corresponding ego-constellations are in lack of structure and adequate defense.

The rejecting attitude towards aggression or more active forms of mastery is also reflected in the constant e-plus-minus choices, which indicate ambivalent attitudes towards handling aggression, and in this case also towards masculine role taking. In conjunction with some effort to delay the expression of strong tender emotions (h-minus) it would seem that this homosexual conflict entails at times an almost panicky type of anxiety in this otherwise rather defenseless person. There are the accumulated, violent emotions which might break through inadequate defenses, together with the possibility of exposing the deeper homosexual longings. It goes without saying that this must give a nearly constant feeling of oppression which further diminishes the low frustration tolerance, through psychic exhaustion. A vicious circle of passive homosexual longings — fear of exposure — exhaustion — increased dependency needs — further a-masculinity may this exist.
The C-vectorial reactions (open; plus, loaded) give evidence of an intense need of dependence (h-plus, loaded; m-plus, loaded). There is no eager search for objects, no propensity for active mastery; in fact no strong attachments to persons at all (d-open) except to the "one and only" motherly object to which he clings by all his might, with considerable fear of losing this source of gratification. This by all means oral basis of the patient's object relationships may in turn explain - or at least elucidate - the inversion of the sexual drive goal. But both indicators of inactivity (e-minus; d-open) also suggest that much of the feminine orientation of the patient may be lived out in assuming the role of the submissive partner in all types of relations (not primarily sexual) initiated by others. Furthermore, the chronic severe anxiety under which he labors is an indication in favor of latent homosexual tendencies rather than overt homosexual behavior.

The most striking finding in this case is an inter-paroxysmal build-up of tension in the m-factor, consisting of a very loaded plys-reaction just before the seizures and an abrupt draining of it along with the seizures, so that only little loading is left post-paroxysmally. Since these m-choices are always positive, the obvious interpretation of this phenomenon is a steady increase of tension in the need for oral gratifications and of dependency upon the love-object, until this need to cling reaches a level of intensity where it acquires a quality of anxiousness about possibly losing the object and the emotional support provided by the relationship. Oral
frustration, then, seems to be felt acutely before the attacks. Deri has pointed out that a loaded plus-m choice is frequently found in homosexuals and our records on this patient supplement her statistics. Along with each seizure namely, changes in the usual plus-h, minus-s reactions occurred in the direction of an increase of tension in the need for tender love (h-plus, loading of five or six). Before each seizure, then, we find signs of acute oral tension, of anxious clinging and intense dependency needs, subsiding after the seizure in favor of increased homosexual tendencies. A further sign consists of a systematic post-paroxysmal lessening of repressive activity (k-open). The inference may be that along with each seizure the patient experiences something like a homosexual panic.

In a psychiatric consultation around this time it was felt that the patient was in great need of psychotherapy, although it was realized that it would probably be a long and difficult process. The psychological report confirmed this impression. The Rorschach record showed anxiety as a paramount factor, with a very weak outer control. Faced with a situation of high emotional importance his reaction often bordered on panic. The stories to the Thematic Apperception Test showed extreme emotional bility and an avoidance of discussion of heterosexual relationships.

The fundamental differences between these four cases may serve as a general warning, that psychodynamic theories of epileptic sei-
Zures need first of all a broad basis, wide enough to encompass a variety of idiosyncrasies. Our exploratory study suggests that future systematic studies, preferably with psychological tests, can yield information on the following points:

1) to what extent is the occurrence of epileptic seizures linked with an individual's personality dynamics, and to what extent are the attacks relevant to basic psycho-dynamic processes?

2) In case of a serious emotional involvement in the seizures, to what extent do the attacks seem the termination of an immediately preceding acute conflict, and to what extent do they seem the origin of a subsequent acute conflict?

3) What are the types of acute conflicts that are found in either the preceding states or in the states following an epileptic seizure?

It is the contention of the present writer that unequivocal data on these three main points are necessary before one can arrive, through induction, at sound theoretical formulations concerning personality dynamics in epileptic seizures.
Our experimental findings reported and discussed in the last three chapters are at variance with Szondi's and Deri's statements about the supposed dynamics of epileptic seizures and their reflection in the Szondi Test, and leave through this the discussed clinical and psychodynamic notions prevailing in epilepsy without experimental support. Quite aside from the many observations concerning the still uncertain existence of a so-called epileptic personality, these dynamic theories can be attributed to two main categories:

(a) those which view an epileptic seizure as a symbolic act, bringing in a primitive way a temporary solution to an acute psychic problem, such that the pattern of motor activity represents symbolically the psychic conflict, its sources and the individual's defenses against it;

(b) those which view an epileptic seizure as a primitive response to unbearable psychic tension without necessarily being a symbolic act.

Common to both classes of theories is that the seizure is seen as a response of the organism, serving the function of ridding the individual of tensions which he cannot manipulate in a more conscious, integrated and socially adapted fashion. It appears that the attention of most investigators has been absorbed by the psychic states or processes leading into seizures, with some students halting their investigation at the moment where the seizure begins, while others have continued
their search more deeply within the attacks. Since the field of investigation was thus limited, it is only logical that the great majority of relevant theories are in fact "precipitation theories", based upon the old psychological scheme of stimulus and response. Conceived with greater or, less elaboration, and with greater or less consideration of the neurological facts, the general tenor of such precipitation theories lies in the notion of a gradual build-up or sudden increase of emotional tension before the seizure, and a release of this tension along with, due to, or in the seizure. It is this notion from which we derived our hypotheses and it is exactly this train of thought with which our data are at variance.

We did not find in the majority of cases the signs of a gradual build-up of psychic tension before the seizures; neither did we find a sudden, abrupt release of whatever tension was previously present along with the seizures. Instead, our data suggest for some patients a more pronounced disequilibrium after the seizures than existed before, and instability scores suggesting inter-paroxysmal emotional upheavals greater than those along with the seizures.

These findings were made accessible by the Szondi technique which allows the study of a whole episode of the epileptic syndrome by means of a serial arrangement of cross-sections in time, with a standard tool. We chose this approach because we considered the individual's emotional household after the attacks just as much worth investigating as his psychic states before the seizures. In so doing,
we did not investigate an epileptic seizure as a phenomenon which terminates something, but rather as a caesura, or break in the rhythm of normal life.

The inferences from our study, tentative as their formulation may be, may make a shift in emphasis for further psychological research in epilepsy profitable. They favor a re-orientation by means of which the field of investigation would be expanded to also include an assessment of the results of epileptic seizures on the psychic tension economy or emotional need systems of the patient. By this we mean the immediate effects of the paroxysms, just as intimately connected with the seizure itself as the immediately preceding states which have been so often conceived of as terminating in the seizure. The more distant effects, which may more or less deeply modify the patient's total personality, form a different problem.

The study of epileptic seizures is obviously a matter of several disciplines. Throughout history this has been the case, although the emphasis on a particular point of view has shown great shifts. More recently, there has been a growing trend in the direction of integrating the various possible viewpoints into a more unified approach to the problem of seizures, etiologically as well as therapeutically. Though one can only welcome such a development, one should also be aware of certain dangers in a so-called total approach. Psychological and psychiatric investigators have too often been tempted to "explain" epileptic seizures in terms of emotional processes, an endeavor that culminated in the various theories
claiming a pre-paroxysmal tension build-up terminated by an abrupt paroxysmal tension discharge. We have pointed out that the validity of such theories depends too much on the limitations of the investigated field to be generally applicable. But even if one widens the scope of psychological investigation of epileptic seizures by including the post-seizure states, the psychologist should develop his theories with moderation and prudence, aware of the proper limitations of his study as part of a total approach. It is nowadays quite customary to consider the differentiation between psychological phenomena and physiological processes outmoded, not proper in a modern setting of psychosomatic research. On this issue we share attitudes such as Rapaport's (73) who states that this differentiation does not necessarily imply a theoretical dichotomy, but that it is rather a matter of methodology.

To foster an attitude of methodological clarity we shall develop a scheme in which we try to give a proper place to the various modes of attack on the problem. It is based on two key concepts which represent the minima of neurological knowledge that any student of epilepsy should have, namely the concept of a seizure threshold and the basic notion that the pattern of sensori-motor disturbances and alterations of consciousness of which the seizures themselves exist, is most directly determined by an abnormal electrical firing of nerve cells. The concept of a threshold is too well known to psychologists and physiologists to need any further elaboration; for a clarification of the second notion we know no better source of reference than the publications of Penfield and his co-workers. The recent study by
Penfield and Kristiansen (68) called "Epileptic Seizure Patterns" is a beautiful illustration of this whole body of knowledge.

The paroxysmal nature of the epileptic syndrome, which necessitates the concept of a seizure threshold, also implies the postulate of seizure precipitation. Whatever factors the various disciplines have pointed up as possibly precipitating an epileptic seizure may be summarized under the generic term "stress." At this level of abstraction, one may thus conceive of a triad: stress -- changes in the seizure threshold -- epileptic seizures. At this general level of conceptualization there are two logical possibilities:

(1) an excessive magnitude of stress increases the likelihood of a seizure by lowering the seizure threshold. That this may happen even in non-epileptic brains is exemplified by metrazol shock.

(2) A normal amount of stress, not conducive to seizure phenomena in non-epileptic brains, may easily produce a seizure in a hypersensitive brain or brain area with an implicitly low seizure threshold. Simple examples of this process are seizures elicited by sensory stimulation of otherwise normal intensity and frequency.

From this it would follow that slight increases of stress are more apt to elicit seizures in a hypersensitive brain or brain area than in brains with a sufficiently high seizure threshold.
This conception of stress would have implications for the psychological investigation of epileptic seizures. We have pointed out that the majority of hitherto published psychological studies of seizures are in fact precipitation studies, restricted in meaning because of the one-sided viewpoint of seizures as an end-product only. But on studying seizures as a ceasura in the normal life rhythm of the patient one has to face the fact that stress-factors may be found at any point on the time line, and that the post-seizure state may at times contain more psychological stress than the pre-seizure state. Without denying the possibility that emotional factors may precipitate seizures, there seems no ground for the claim that this is a general rule, and even less ground for claiming that epileptic seizures may be sufficiently explained by the preceding emotional states. Post-hoc reasoning has been greatly fostered by viewing seizures as an end-product only.

There is still another fallacy, partially of semantic origin, inherent in viewing seizures as an end-product. By adopting this viewpoint one is apt to conceive of the seizure as a response to the preceding situation. But if psychological stress, such as an unusual emotional tension after a process of build-up, precedes an epileptic seizure, the seizure itself is not necessarily the direct response to it. Whatever knowledge we possess concerning emotions and bodily states points in a different direction. The somatic correlates of, or the immediate responses to, emotional tensions are in the nature of endocrine changes, metabolic changes, vascular
SOME PSYCHO-PHYSICAL RELATIONSHIPS IN EPILEPSY

STRESS:

emotional conflict or tension

RESPONSE:

somatic correlates:

emotional conflict or tension

vascular, autonomic

cortical representation

lowering the seizure threshold

directly, or indirectly firing into a low-threshold area

POSSIBLE EFFECT:

Seizure

aura, convulsions, altered consciousness etc.

POSSIBLE AFTER-EFFECT:

unresolved or new emotional conflict with new tension
altering the blood supply to the brain, visceral changes and other phenomena mediated by the autonomic nervous system. The true response to emotional tension, in epileptics as in normals, is therefore to all likelihood some alteration in the physiologic equilibrium that may lower the seizure threshold, with for an epileptic a seizure as a possible consequence, but not so much as a response. The problem of psychosomatic relationships in seizure precipitation would thus seem to lie before the point of transgression of the seizure threshold. The pattern of the seizure itself is rigidly determined by the properties of the central nervous system, or more precisely by the abnormal electrical firing of the epileptogenic neurons, and its spread.

These are some of the fundamental relationships that we have tried to schematize. As a logical concept, the necessity of which has further been elucidated by the results of this study, we have added one more stress situation containing the emotional state immediately following the seizure, as soon as consciousness has regained its usual clarity. Theoretically and practically, as soon as one views epileptic seizures as an interruption of the normal life rhythm, psychological stress can be found at any point on the individual's life line. Going through a seizure may in some patients increase their psychic tension and aggravate their problems.

One hardly needs psychological tests or special psychiatric analysis to observe this. Bewilderment about the behavior just displayed without being responsible for it, or even conscious of it,
apprehension about eye-witnesses and the effect of the scene upon them, and upon oneself as a consequence of rumor, the very "experience" of a sudden interruption of consciousness, are not conducive to solving whatever acute emotional problems one may have had just prior to the seizure. Such stressful effects of seizures may also increase the likelihood that further emotional experiences, in themselves not particularly tense or threatening to the individual, may be more readily perceived and evaluated as stress.

The fact that we conceived of the seizure itself, the ictus epilepticus, as a relatively independent unit in our scheme, determined by the pattern of abnormal neural firing, does not mean a claim that the seizure is necessarily without psychological content. But our ignorance on this point is greater than at any other place in the scheme, and the problem seems less amenable to exploration. What little direct information there is has come from neurosurgical sources, such as Penfield's stimulation experiments. It is in view of this ignorance, yet at the same time the knowledge that one is here at the heart of the mind-body problem, that we preferred the general term "psychophysical relationships" to head the scheme. Within this very broad concept some more detailed, known connections between emotional experiences and somatic processes have a place. These would seem the ones conventionally labeled "psychosomatic" - the ones which we gave a place prior to the point of transgression of the seizure threshold. Burdened as the term nowadays is, it may be better to reserve it for what it has hitherto denoted, namely the problem of emotional seizure
precipitation. But this is by no means the only aspect of epileptic seizures of interest to the psychologist.

The incidental finding, that epileptic seizures may have the immediate consequence of further or increased psychological stress to the individual, may also be used to advantage by psychotherapists dealing with epileptics. The primary interests of psychotherapists in epilepsy have been in the area of seizure precipitation, and the goal of therapy has most often been the removal of repression of intense anxieties (according to Fenichel usually the fear that destructive impulses may be turned upon the subject himself (38) which were supposed to be the emotional precipitants of seizures. In this connection it appears that the aura, or a patient's associations to the aura, has been a favorite subject for psychoanalytic investigation and therapy. But there is also a post-seizure situation, the perception of which as stress by the patient seems in certain cases fully justified. No matter how well-adjusted or problem-free one may be, the realization that one had an interruption in the stream of consciousness and normal behavior is upsetting. It must be all the more upsetting to individuals perturbed by neurotic anxiety, guilt feelings and the like. With such neurotic tendencies in readiness, the chances are great for a rational core of justified fears to become contaminated by all kinds of irrational elements leading to guilt, shame, secondary gain and other features by means of which the seizure becomes incorporated in the neurotic system. One way of preventing this undue incorporation is to educate the patient on the facts of
epilepsy and to demarcate as clearly as possible the seizure mecha-
nisms for which he, as a person, cannot be held responsible, from
his own, sometimes blurred perception of them. This point has been
clearly stated by Alstrom (2) who denies any symbolic meaning to
epileptic seizures per se, but who admits that - particularly in
patients with psychoneurotic traits - emotional problems with their
resulting affective stress may lower the seizure threshold and thus
induce attacks. He feels that in psychotherapy aimed at such problems
it is of the greatest importance to provide the patients with a clear
explanation of the nature of the disease.

Finally, since most epileptic seizures are accompanied by a state
of unconsciousness, with amnesia for the ictal episode, any knowledge
of the psychological meaning of the seizures is bound to be in the
nature of an inference from the surrounding psychic states, the
pre-paroxysmal as well as the post-paroxysmal one. Whoever feels
on the basis of a close study of these states, that epileptic seizures
serve the general purpose of ridding the individual from psychic
tensions which he cannot manipulate in a more conscious, integrated
and socially adapted way, will have to demonstrate that the post-
paroxysmal state is one of relative well-being as compared to the
pre-paroxysmal acute conflict situation.
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ABSTRACT

The psychiatric and psychological literature on epilepsy contains two main problem areas: 1. the problem of the existence of a specific epileptic personality in its durable aspects; distinct from normal as well as other abnormal personality types; 2. the problem of the possible role of psychic needs in the production or precipitation of seizures in epileptic patients. The present study falls within the second problem area.

Exploratory psychoanalytic case studies have suggested that epileptics suffer from an aggressive conflict which reaches a high degree of intensity just prior to a seizure and which is released in the seizure. Seizures may thus be an emergency outlet through which emotional tension is released without ego-participation. Somewhat akin to these analytic observations are the impressions of some clinicians who feel that epileptics show, in synchrony with their seizures, a cycle of psychic tension such that a slow and gradual build-up of tension can be observed during several days prior to a seizure, in contrast to which the post-seizure state is marked by low psychic tension. The inference has been made that the seizure is produced by the high psychic tension level and that it is one way of discharging the excess.

L. Szondi, psychiatrist and deviser of a psychodiagnostic test, appears from his "Experimental Diagnostics of Drives" to be an exponent of the cyclic psychodynamic theory of epileptic seizures. His pupil Deri, who wrote the first English introduction to the Szondi Test, shares this notion. Relevant passages from their works, partially explicit and
partially implicit in their descriptions of technical aspects of the test, set forth the following theory: 1. the epileptic is possessed by "badness" tendencies which he can escape only by reaction-formation which produces an unusual "goodness" in seizure-free periods; 2. aggression is thus barred from expression and is kept under strict control within the personality, where it accumulates; 3. at some time or other, because of excessive accumulation of need-strength, aggression reaches such intensity that control mechanisms fail and the need breaks through in motor behavior; 4. this motor behavior is the seizure, which is thus on the one hand an expression of aggression, and on the other hand a means of achieving new psychodynamic equilibrium after release or discharge. Epileptic seizures are thus seen as the endproduct of a gradual process of build-up of aggressive need-tension and are felt to constitute the abrupt release of this tension. This theory is partially built into the design of the Szondi Test, in the description of which it is set forth as definitely proven by test results. However, only one case study is offered to substantiate the theory. In the absence of any systematic study, this part of the literature is still impressionistic and the various versions of the theory are lacking in evidence.

To investigate the validity of Szondi's and Deri's claims, and partially as a reduplication of Szondi's experiment, the Szondi Test was administered a number of times in succession, with intervals of approximately 24 hours, to a group of non-institutionalized, intellectually non-deteriorated, male epileptic veterans, who are by all known criteria an adequate representation of the epileptic population. They were selected
for this study solely on the basis of the obviousness of their symptoms, which consisted of grand mal, psychomotor or various focal seizures with gross motor phenomena. During these longitudinal studies 16 patients (constituting the Experimental Group with a total of 130 test profiles) had one or more spontaneous seizures, whereas 19 patients (forming the Control Group with a total of 124 test profiles) remained seizure-free. The breakdown of the data of the Experimental Group yielded 22 test profiles obtained within 24 hours of an impending seizure (pre-paroxysmal profiles) and an equal number of test profiles within 24 hours following that seizure (post-paroxysmal profiles). The data were analyzed at two levels: 1. by comparing the Experimental and the Control Group; 2. by comparing the pre- and post-paroxysmal profiles of the Experimental Group. In the latter analysis each patient functioned as his own control subject.

Various aspects of the relations between the psychodynamic theory of epilepsy and the Szondi Test were studied.

I. To check the theory, the hypotheses were advanced that:

   a) the frequency of very loaded reactions (of five or six) and open reactions (of zero or one) would be greater for the Experimental than for the Control Group; and greater for the Pre-paroxysmal than for the Post-paroxysmal Group.

   b) the Szondi Instability Scores (measuring change in choice from one test profile to the next) would be greater for the Experimental than for the Control Group; and within the Experimental Group greater for the paroxysmal (measuring change from pre- to post-seizure state) than for the inter-paroxysmal changes in choice.
II. To check the specificity of Szondi's E-factor, which is reported to be based upon the responses of epileptics in different phases of their assumed cycle, the hypothesis was tested that:

c) loaded and open reactions in E would be more frequent in the Experimental than in the Control Group; whereas loaded E-reactions would be more frequent and open E-reactions would be fewer in the Pre- than in the Post-paroxysmal Group.

III. A check was made on the diagnostic validity of six Szondi Test signs differentiating the phases of epileptics, as formulated by Szondi and Deri:

d) H-plus, S-plus reactions were expected to be more frequent in the Experimental than in the Control Group; and more frequent in the Pre- than in the Post-paroxysmal Group.

e) Open-S reactions would be more frequent in the Experimental than in the Control Group; and more frequent in the Post- than in the Pre-paroxysmal Group.

f) E-minus, HY-plus reactions would be more frequent in the Experimental than in the Control Group; and more frequent in the Pre- than in the Post-paroxysmal Group.

g) E-minus, HY-minus reactions would be more frequent in the Control than in the Experimental Group; and more frequent in the Pre- than in the Post-paroxysmal Group.

h) Open-K reactions would be more frequent in the Experimental than in the Control Group; and more frequent in the Post- than in the Pre-paroxysmal Group.
i) M-minus reactions would be more frequent in the Experimental than in the Control Group; and more frequent in the Pre- than in the Post-paroxysmal Group.

The major finding was that not one of the nine pairs of hypotheses was proven correct. No analysis of scores, at either level of comparison, yielded differences approaching the 5% level of significance, whereas some differences were in the direction opposite to the one predicted. These were: 1. Incidence of loaded and open reactions was greater in the Post- than in the Pre-paroxysmal group; 2. About half of the patients had paroxysmal Instability Scores smaller than their own median inter-paroxysmal Instability Scores; 3. Open-K reactions were more frequent in the Pre- than in the Post-paroxysmal Group. In all respects there was much inter- and intra-individual variability. Additional analysis by the case-study method, utilizing Szondi's and Deri's principles of interpretation, showed also much inter-individual variability and gave suggestive evidence of greater emotional disturbance and more tension after than before the seizures in some cases, whereas other cases yielded no test evidence of any change in emotional status along with the seizures. One case, in which three attacks occurred during the testing period, showed a systematic rise and fall of loading in the M-factor, concomitant with the three seizures.

From these results the following general conclusions may be drawn:

1. No experimental support for the correctness of the cyclic psychodynamic theory of epileptic seizures is advanced.

2. Szondi's and Deri's claim that the Szondi Test differentiates the
assumed tri-phasic cycle of epileptics into a specific inter-, pre- and post-paroxysmal phase is contradicted.

3. Since the first two pairs of hypotheses have demonstrated significant test changes after an induced emotion of horror (Z. Odes: A Study of Experimentally induced Changes in Responses to the Szondi Test, Szondi Newsletter, II, 2) the negative results of epileptics do not support, and appear in this context to run counter to, the theory of epileptic seizure dynamics.

4. Instability on the Szondi Test appears not greatly affected by the occurrence of epileptics seizures; fluctuations of non-ictal origin being more strikingly reflected in the Szondi Instability Scores.

5. Szondi's E-factor elicits no typical reactions in epileptics. Even if one assumes the validity of the psychodynamic theory of epilepsy, epileptics cannot without further proof be taken as the exponents of what this test factor is reported to register, viz. temper tantrum behavior.

6. The underlying assumption of psycho-somatic specificity in epilepsy (more especially of seizure production by accumulation of aggressive need-strength) is without experimental support from the Szondi Test, which is specifically based upon this assumption. This is parallel to newer developments in other psycho-somatic fields, where the specificity hypothesis is gradually being relinquished. It is also consistent with the newer thinking among epileptologists, which has replaced the older notion of epilepsy as a disease entity per se by the idea of epilepsy as a symptom common to a variety of neurological disorders.
7. The validity of the Szondi Test, in so far as the test is based upon the assumption of specificity in epilepsy, is in need of further investigation. Its use for the purpose of diagnosing epilepsy must be discouraged.

Finally, various theoretical requirements for further study in this field were considered. The longitudinal studies of epileptics, made possible by the Szondi technique, point up a methodological principle which has often been neglected in psychiatric studies of epileptic seizures. These are not lacking in post-hoc reasoning, induced by over-analysis of the pre-seizure state and relative inattention to the post-seizure emotional household. Seizures should not be seen only as the end-product of, or response to, a preceding state of stress, but also as an interruption in the normal stream of consciousness which may or may not resolve a preceding stress situation, and which may even produce its own new stress. The findings of other disciplines, such as neurology and neuro-physiology, can be fully acknowledged in psychological studies of seizures by adopting the concept of a seizure threshold, upon which various types of stress (autonomic, vascular, endocrine, metabolic, psychologic, socio-psychologic etc.) may impinge.
Paul Willem Pruysen was born in Amsterdam, the Netherlands, on May 28, 1916 as the second son to Herman Johan Pruysen (deceased December 26, 1919) and Elisabeth van Dingstee.

He grew up in Amsterdam, where he attended elementary school and high school, after which he went to work in various clerical and administrative positions for the necessary financial support of his family. He was active in Y.M.C.A. work and other youth groups, and attended for many years extension courses in foreign languages, philosophy, literature and art. Out of these interests grew gradually a need for a more thorough classical education. From September 1939
to June 1940 he served in the Dutch Army and was discharged after the German invasion of the Netherlands. During the years of the German occupation he attended the Amsterdams Avond Gymnasium, an institute especially designed for working students. All during this time he was an active member of the Dutch Resistance Movement and worked, with several interruptions, as personnel manager in a textile plant in Amsterdam. After the liberation of his country, he obtained the "Staatsdiploma" in December 1945 and was admitted to the University of Amsterdam in the Department of Psychology in September 1946.

Meanwhile, on April 17, 1946, he married Jansje Martha Fontijn, then a law student at the University of Amsterdam. During the first two years of their marriage, he was a private tutor in Latin and Greek and worked as a correspondent in foreign languages for a mortgage bank. He prepared for the degree of Candidate in Psychology which he obtained on May 5, 1948, under the guidance of professor Geza Révész, after having passed preliminary examinations in philosophy, sociology and genetics.

On January 1, 1948 a daughter, Henriette Adriana was born. Five months later the family obtained their emigration papers and moved to the United States, settling in Newton Center, Massachusetts.

He enrolled in Boston University Graduate School, Department of Psychology, in September 1948 and was subsequently admitted to the clinical psychology program. A son, Herman Johan, was born on January 27, 1949. In the course of his studies he was trainee in psychology
at the Boston State Hospital, under the supervision of Dr. John Arsenian, from February to November 1949. Towards the end of 1949 he worked a few months as consultant-clinical psychologist to Dr. William G. Lennox, at the Children's Medical Center, Boston. From this contact he obtained a permanent position as staff clinical psychologist at the National Veterans Epilepsy Center, then in Framingham, now in Boston, from January 1950 till the present. A third child, Pauline Willemine, was born on June 18, 1950.

From 1949 to 1950 he was an assistant instructor of child psychology at Boston University College of Liberal Arts.