

AN EXPLORATORY STUDY OF SOME ASPECTS
OF LISTENING OF SCHIZOPHRENICS

by

Lee Robert Ryan

B.A., Boston University, 1952

M.A., New Mexico Highlands University, 1954

Victor R. Ramey
Donald B. Ramey
Date 5-31-60

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Victor C. Bailey

Donald H. Mason

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Ryan, Leo Robert (Ph. D., Psychology: Clinical) psychotherapist

An Exploratory Study of Some Aspects of Listening of
Schizophrenics

Thesis directed by Professor Victor C. Raimy

This study is concerned with some aspects of the listening of schizophrenics that seem amenable to interpretation in terms of learning theory and current psychotherapeutic approaches to this disorder. It is exploratory in nature and is designed to investigate the effects of "censure," "emotionality," "empathy," and "type of disorder" on the listening of schizophrenics. The choice of these variables was guided by both the experimental and clinical literature which attempts to account for schizophrenic behavior as a defensive reaction to threat. The selection of learning theory does not imply a lack of other theories to explain the same behavior. Rather, the advantage of such an approach is found in the readiness with which the hypotheses may be tested, and the support which the clinical and experimental literature has already furnished.

The importance of the study lies in the fact that listening is a relatively untouched area of the disturbed communication process which exists with the schizophrenic patient. This study is an attempt to gain insight into the factors that interfere with the listening of

schizophrenics. Such insight may allow the psychotherapist to improve his ability to communicate with these patients by avoiding those factors that produce a deficit in their listening.

Specific hypotheses were derived from the review of the literature and an extension of Hullian learning theory. The variables of "censure," and "emotionality" were expected to have a deficit effect on the listening of schizophrenics. The variable of "empathy" was expected to vary directly with their listening accuracy. Listening was also expected to vary according to the classification of the patient. Since the standard diagnostic categories have been demonstrated to be unreliable, the subjects were classified into Good and Poor categories according to the nature of the social experiences found in their premorbid histories.

A sample of 114 schizophrenic patients was selected from the New Mexico State Hospital, and classified into the Good and Poor premorbid categories using the Phillips Scale. Random samples were then drawn from each category and these samples, in turn, were randomly assigned to each experimental condition to be tested. The study was restricted to relatively acute cooperative male patients, for whom there was no evidence of extra-schizophrenic pathology, and who ranged in age from 18 to 50 years.

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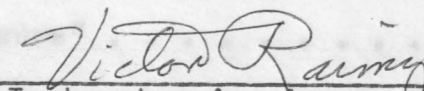
Three measuring instruments were employed in this study. A multiple choice test, designed by the writer, was used to measure the listening of the schizophrenics. The selection of the "emotional" stimuli was accomplished with a word-association test, and a modified form of Dymond's "Empathy Test" was used to measure the variable of "empathy." The stimulus words for the listening test were presented by means of a tape recorder, and minimal "censure" was introduced into the experiment by lighting a box reading "right" or "wrong."

The results offered confirmation of the major hypotheses of the study which asserted that Good premorbid schizophrenics were better listeners than Poor premorbid schizophrenics, and that the Poor premorbid would reveal a greater deficit in their listening when exposed to conditions of "censure," and "emotionality." In addition, both categories of schizophrenics maintained a high degree of "empathy" which correlated positively with their listening, although not as highly as predicted.

Suggestions were offered for improving communication with the schizophrenic patient in the psychotherapeutic relationship, and future research needs were pointed out.

This abstract of about 600 words is approved as to form and content. I recommend its publication.

Signed



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Kraepelin (1917) was the first to differentiate the pathological entity which he called dementia praecox. His observations led him to conceptualize this disorder as a deteriorating process occurring in young persons who progressed to a demented state. As to its etiology, Kraepelin considered the disorder to be due to physiological causes, which were hereditary in nature.

Kraepelin's views were not accepted without objection. Among the earliest to express a different conception was Eugene Bleuler (1950), who stated that the disorder did not progress toward dementia and renamed the syndrome schizophrenia. Next he noted that identical clinical disturbances developed in persons who were in their thirties and forties. Lastly, in regard to etiology, Bleuler considered the disorder to be due to psychological causes. Bleuler described the condition as characterized by a looseness of association. He emphasized that emotionality was not absent in schizophrenia, but did play an important role in the development of the disorder.

Further hypotheses have been developed over the past fifty years by such individuals as Arieti (1955), Camero (1938, 1939, 1951), Freud (1923, 1946), Goldstein (1939)

CHAPTER I

INTRODUCTION

Emil Kraepelin (1917) was the first to differentiate the pathological entity which he called dementia praecox. His observations led him to conceptualize this disorder as a deteriorating process occurring in young persons who progressed to a demented state. As to its etiology, Kraepelin considered the disorder to be due to physiological causes, which were metabolic in nature.

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Further hypotheses have been developed over the past fifty years by such individuals as Arieti (1955), Cameron (1938, 1939, 1951), Freud (1925, 1946), Goldstein (1939),

Jung (1917), Meyer (1906, 1910), Sullivan (1940, 1947), and others. Most of these persons take a definite stand on one or another of the significant questions about the nature of schizophrenia, such as, is schizophrenia a homogeneous or heterogeneous disorder? Is it a physiological or psychological disorder? Is it reversible or irreversible? Throughout this period these difficult questions have remained unanswered.

The current formulations of schizophrenic behavior mainly have been derived from clinical information based on the practice of psychotherapy with schizophrenics. Since psychotherapy to a large degree is a verbal technique, many individuals (Arieti, 1955; Cameron, 1938; Cameron, 1939; Cameron, 1951; Fromm-Reichmann, 1950; Fromm-Reichmann, 1958; Ruesch, 1956; Sullivan, 1940; Sullivan, 1947) have turned their attention to the communication process which takes place between the patient and the psychotherapist. Most of their efforts have been directed toward understanding and translating the bizarre communications of the schizophrenic. More information is needed, however, in regard to other facets of the interpersonal communication with schizophrenics. One aspect of the communication process which has received little attention is the listening of the schizophrenic. This study is an attempt to discover some of the factors that disrupt the listening

of schizophrenics.

The theories proposed by Adler (1927), Arieti (1955), Cameron (1951), Freud (1946), Fromm (1941), Fromm-Reichmann (1950), Horney (1945), Sullivan (1947), and other psychotherapists depend heavily upon the concept of learning to account for the ways in which the psychotic behavior develops; yet there is an evident neglect of formal attention to the learning process in these theories. For the most part these theories are not explicit in regard to the role of learning in the development of schizophrenia, despite the fact that learning has been a major topic of psychology for many years. A greater rapprochement of learning theory and clinical theory may be helpful in determining the plausibility of much of the current thinking about the psychogenic basis of schizophrenia. Consequently, the present study is concerned with the listening behavior of schizophrenics which may be interpreted from a learning theory viewpoint. There is no pretense of completeness or uniqueness of explanation or lack of other theories to explain the same behavior.

The Problem

The present study is an attempt to explore some aspects of the problem of communication with schizophrenics. Specifically, this study is concerned with some aspects of

the listening of schizophrenics that seem amenable to interpretation in terms of learning theory and its application to psychotherapeutic approaches to schizophrenics.

For purposes of this study listening will be defined as accuracy of response to a set of orally presented words. This definition is preferred over other definitions since it does not divest listening of its affective and cognitive properties which may be properties of, or correlates of, the responses that comprise the listening. Since very little is known about the affective and cognitive properties of listening, it would be rash to suppose that anything other than a working definition could be offered at this time. The orally presented words form the reference class of the listening, and the working definition will always be in terms of this referent class of stimuli.

Importance of the Problem

Communication is generally considered to be composed of four skills. Writing and speaking are classified as expressive skills, and reading and listening as receptive or assimilative skills. When the assimilative skills, the basic media of learning, are not adequately developed the entire learning process suffers. It has been pointed out by Nichols and Stevens (1957), Rankin (1939), and others that listening is the most frequently used language

activity; the average adult spending approximately three times as much time listening as reading. The importance of listening for the average adult is apparent, however, the role that listening plays in the behavior of highly disturbed individuals, such as the schizophrenic, is virtually unknown. Certainly in that special case of communication called psychotherapy, the role of listening would appear to be an important aspect. Speech used by the psychotherapist is necessary to communicate and direct the patient's attention to certain psychological processes. If the patient does not listen, then the efforts of the psychotherapist are ineffectual in producing the desired results. Better understanding of the factors that influence the listening of the schizophrenic should increase the effectiveness of the psychotherapist, since the psychotherapeutic skills of any therapist are related to his ability to communicate, regardless of his frame of reference or of the theoretical school to which he may adhere.

Investigation which leads to an understanding of the factors that disrupt communication with the schizophrenic may lead to a better conception of the schizophrenic process, and, eventually, may result in a better formulation of specific psychotherapeutic techniques. The importance of investigating the problem of communication with the

schizophrenic has been stated by Ruesch as follows:

CHAPTER II

Successful communication is gratifying; it brings about a feeling of inclusion and security and leads to constructive action. Disturbed communication is frustrating; it brings about a feeling of loneliness and despair, and it leads to destructive actions. The therapist is thus faced with the task of converting disturbed communication into successful communication. This proposition is obviously not related to content. Once a person knows how to communicate, and once a system of communication operates successfully, almost any topic can be handled (1956, p. 183).

effects of "censure," "emotionality," "empathy," and "type of disorder" on the listening of schizophrenics. The choice of variables was guided by both the experimental and clinical literature.

Clinical Literature for "Censure"

The choice of "censure" was influenced by the extensive clinical literature that accounts for schizophrenic behavior as a defensive reaction to threat. Arieti, for example, defined schizophrenia as a "... specific reaction to an extreme state of anxiety" (1955, p. 494). Cameron (1951) has described the behavior of the schizophrenic in much the same way.

When . . . he encounters severe conflict, thwarting or delay, and develops marked anxiety, he is almost sure to show disorganization (Cameron, 1951, p. 494).

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CHAPTER II

REVIEW OF THE LITERATURE

AND THE HYPOTHESES

Review of the Literature

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Fromm-Reichman (1950) has described the withdrawal of the schizophrenic as due to extreme sensitivity to

criticism or threat. She stated that the schizophrenic is attempting to avoid "another rebuke in a long row of thwarting rebuffs" (Fromm-Reichman, 1950, p. xii). Cholden described schizophrenic behavior in the following manner:

What does the schizophrenic patient see as he sits before the therapist? Primarily, he sees threat, every human relationship means threat to the schizophrenic person . . . each human contact is frightening in the schizophrenic isolation. . . . Those who work with schizophrenic patients often note the sensitivity so many of them possess! Undoubtedly this sensitive awareness of another person is a defensive necessity for living in a world seen as threatening (1956, p. 240).

Similar statements may be quoted from such authors as Babcock (1933), Bellak (1948), Bychowski (1952), Hoskins (1946), Jenkins (1952), Sullivan (1947), and other clinical workers. Garmsey found that the schizophrenic showed

Experimental Studies for "Censure"

In 1944, Hunt and Cofer reviewed the literature related to psychological deficit in schizophrenic behavior and concluded that, threatening social situations found

results comparable to those of Garmsey's experiments. The

The deficit in the 'functional' psychoses, and particularly in schizophrenia, we conceive as an extinction of standards for performance and of thought skills that have been socially rewarded (1944, p. 1022).

The variable of "censure" was implied in their review but was not explicitly related to the deficit

of the schizophrenic. Webb (1955) was one of the first to experimentally demonstrate this relationship.

Previous investigators of conceptual ability of schizophrenics have consistently found a deficit. Additional observations have suggested that the deficit may vary as a function of certain identifiable variables, e.g., threat of failure. For this study, the hypothesis was made that the deficit in conceptual ability of schizophrenics would be greater under conditions of threat of failure than under conditions of minimal threat (Webb, 1955, p. 224).

Garmezy (1952a) studies the sensitivity of schizophrenics to criticism in an auditory discrimination experiment in which schizophrenics and normals were required to differentiate tones. If the subjects made incorrect responses to a tone a box reading "WRONG" was lighted in front of them. Garmezy found that the schizophrenic showed greater deficit in discrimination to the experimentally induced threat. A further study by Garmezy (1952b) revealed strong avoidance tendencies manifested by schizophrenics under conditions of minimal threat. Dunn (1954), using pictures depicting threatening social situations found results comparable to those of Garmezy's experiments. The studies which have investigated the relation between censure and deficit in schizophrenic behavior consistently support those clinical observations that have stressed the sensitivity of the schizophrenic to criticism or rebuff. (Shagass, 1951; Richter, 1928; Sze, 1926; Sulzeck, 1941).

Clinical Literature for "Emotionality"

As noted in the introduction, Krapelin considered the schizophrenic to have "flat affect," whereas Bleuler emphasized that emotionality was not absent but that it played an important role. This aspect of schizophrenic reaction has received considerable attention in both the clinical and experimental literature. Arieti (1955), Bellak (1947), Bleuler (1950), Cameron (1951), Fromm-Reichmann (1950), and others emphasized the extreme emotionality of the acute schizophrenic which is followed by some reduction in reactivity as the disorder progresses. Arieti, for example, described the early stages of schizophrenia as "a period of intense anxiety and panic" (1955, p. 331). Bychowski stated that "anxiety, at times reaching a very high degree bordering on veritable terror, is a frequent part of schizophrenic symptomatology" (1952, p. 141).

Experimental Studies for "Emotionality"

Experimental studies based on a learning theory

approach to the study of schizophrenia suggest, first of all, that schizophrenics are extremely reactive and display much anxiety (Cohen & Patterson, 1937; Darrow & Heath, 1932; J. Hunt, 1936; Landis, Hunt, & Page, 1937; Malmo, Shagass, 1951; Richter, 1928; Syz, 1926; Wulfeck, 1941).

In other words they have a low threshold of emotional arousal. Even the reduction in reactivity of the chronic schizophrenic has been questioned. Malmo, Shagass, and Smith (1951), for example, required chronic schizophrenic subjects to perform in a variety of test situations and, at the same time, took certain physiological measurements. They found that the patients were more reactive than controls with respect to heart rate, blood pressure, and muscular tension, but their overt actions did not reflect their highly reactive inner experience. Such results are certainly in agreement with the reports of recovered patients, who recall their psychotic experiences as being anything but emotionally flat (Anonymous, 1955; Lang, 1939). The available studies (Cohen & Patterson, 1937); Darrow & Heath, 1932; Wulfeck, 1941) not only show that emotionality is present in the schizophrenic, it further suggests that schizophrenics take longer to recover from an affective imbalance than do normals.

Clinical Literature for "Empathy"

It has commonly been observed in the literature of psychiatry that the schizophrenic possesses marked empathetic ability (Arieti, 1955; Bellak, 1948; Bychowski, 1952; N. Cameron, 1938; N. Cameron, 1951; Fromm-Reichmann, 1950; Jackson & Carr, 1955; Meyer, 1910; Sullivan, 1947).

Most writers believe that this phenomenon is a result of the schizophrenic's extreme sensitivity to people and his environment. Fromm-Reichmann has given the following description:

Hypersensitivity to justified or unjustified appreciation or depreciation of the psychiatrist's abilities, due to lack of self-respect, will particularly interfere with a therapist's constructive contacts with some groups of psychotics. Because of their marked anxiety, these people have developed a consistent watchfulness of their environment and great alertness regarding interpersonal experiences. . . . From the gestures, attitudes, inadvertent words, and actions of the therapist, the psychotic may, at times, gain an empathic awareness of certain personality aspects of which the therapist himself may not be aware (1950, p. 24).

Moreno (1956) pointed out that sympathy or love is not a necessary condition for empathy to take place. The psychotic need not feel any affection for the person with whom he is empathetic.

An individual with empathic sensitivity is able to penetrate and understand another individual, but this experience is possible without mutual love. If one partner empathizes with the other, he may be able to take advantage of her, be injurious or make her dependent upon himself because of his sheer ability to use his 'empathic cunning.' . . . It is reported by his biographers that Adolf Hitler was endowed with a high degree of empathy, but he used this talent to hurt rather than to help his associates. Empathy, like intelligence, therefore, can be used for social as well as for antisocial ends (Moreno, 1956, p. 46).

He stated that,

Experimental Studies for "Empathy"

The variable of empathy was chosen for this study since it was suspected that "empathy" may be an important aspect of listening. Those schizophrenic individuals who reveal "empathic ability" are expected also to be better listeners. "Empathy" has received considerable attention in recent psychological literature (Bell, 1952; Bell & Hall, 1954; Bender & Hastorf, 1950; Bender & Hastorf, 1953; Hall & Bell, 1953; Halpern, 1954; Halpern, 1955; Hastorf & Bender, 1952; Jackson & Carr, 1955; Kerr & Speroff, 1947; Kerr & Speroff, 1951; Lindgren & Robinson, 1953; Moreno, 1956; Normal & Ainsworth, 1954; Taft, 1955; Van Zwilst, 1952; Wolf & Murray, 1937). Only two articles (Gilbert, 1953; Jackson & Carr, 1955), however, deal with the empathy of schizophrenics, and none is concerned with its relationship to listening.

Clinical Literature for "Type of Disorder"

Much dissatisfaction exists with present day diagnostic procedures. Cameron (1953) pointed out one of the fallacies involved in the use of Kraepelinian classification system that prevails in contemporary diagnostic procedures. He stated that,

. . . it is apparent that much of the thinking about diagnosis has been influenced by the general premise that like effects might have like causes. Hence, together with this zealous search for the specific factor upon which to set up an etiological diagnosis, there has also been a drive to set up a descriptive type of diagnostic classification. The anticipation, here, was that as we refined our descriptions and could bundle more and more skin-looking things together, we should progressively enhance our abilities to deal with them. A good example . . . is the diagnosis of dementia. All of us are well aware that though the symptomatology of different patients suffering from this condition may look alike, the prognosis, in both treated and untreated cases, may be quite dissimilar (D. Cameron, 1953, p. 39).

Not only are the diagnostic categories poorly correlated with etiology and prognosis of the disorder, but there is also marked unreliability in assigning patients to the diagnostic categories. Diagnosis is dependent upon relatively unrefined clinical observation which may result in considerable disagreement among clinicians. Ash (1949, Boisen (1938), Mehlman (1952), and many other research workers have demonstrated the unreliability of the procedures which diagnosticians experience in every day practice. These diagnostic problems have led to several critical articles such as those by Jellinek (1939), Marzoff (1947), and Maslow (1945). Such articles, along with the difficulties encountered in clinical experience, have brought about a general recognition of the limitations of the Kraepelinian system.

A further complication results from deliberate distortion of the diagnosis. Hunt et. al. (1953, p. 55) pointed out that the psychiatrist "may deliberately give an invalid diagnosis for administrative purposes."

Because of the dissatisfaction with present day diagnostic procedures, attempts have been made to reduce the variability in the diagnosis of schizophrenia by devising new classification systems. It is frequently suggested in the literature of psychiatry that there may exist two types of schizophrenia rather than the variety of subtypes in the Kraepelinian classification system. This differentiation has led to a variety of dichotomies such as, "dementia praecox-schizophrenia," "chronic-episodic," "process-reactive," "typical-stypical," and "true-schizophreniform." Each of these dichotomies refer to the type of premorbid history of the schizophrenic. For example, Bellak described the two categories in the following manner:

We believe further that it may be helpful to make a diagnostic division by differentiating definitely between schizophrenia and dementia praecox. . . . We believe that such a differentiation is justified in view of the results of prognostic studies. From these, there rather clearly emerged a syndrome . . . including sudden onset of symptoms in a rather adequate prepsychotic personality, the presence of precipitating factors, and with confusion, catatonic symptoms, and some affective features prominent in the clinical picture. Schizophrenia, thus circumscribed, is evidently a predominantly psychogenic reaction and has

a better prognosis with or without treatment, than dementia praecox proper . . . with poor prepsychotic history and apparently constitutional characteristics of insidious onset in the presence of a clear sensorium and a conspicuous absence of any adequate effect. . . . We believe, in general, that differentiation of the group may lead to more clear-cut results in all fields of research and its problems (1948, pp. 445-447).

Kantor, Wallner, and Winder have described the two categories in much the same way.

The process-reactive hypothesis regarding schizophrenia may be stated as follows: Within the category schizophrenia two subgroups can be differentiated, these being the process or true or chronic, and the reactive or benign or acute (1953, p. 157).

Experimental Studies for "Type of Disorder"

Until recently a critical methodological problem prevented any systematic use of the dichotomy observed in the disorder of schizophrenia. That is, the dichotomy was still dependent upon relatively unrefined clinical observation. Fortunately, however, a rating scale developed by Phillips (1953) on the premorbid adjustment of schizophrenics has helped overcome this difficulty by permitting research workers to rank order patients in terms of their premorbid history.

The Phillips scale was originally designed as a measuring instrument to predict improvement of schizophrenic patients following electric shock treatment. The scale was also chosen since it is more useful for interpreting the results of this study in terms of learning theory than

Four general types of data were used by Phillips in making the ratings: (1) The interpersonal relationships of the patient during the premorbid period of the patient's history; (2) the precipitating factors at the onset of the disorder; (3) the degree of personality organization after the onset of the disorder; and (4) the symptoms of the disorder. Only the first type of data, the premorbid history, has proven to have predictive validity. The premorbid history includes five areas which deal with the recent and past social and sexual adjustments accomplished by the patient prior to the onset of the disorder. Rodnick and Garnezy, after a thorough review of fourteen studies that employed the Phillips premorbid scale, concluded that,

It is clear from the foregoing that the Phillips scale does possess predictive validity. Other evidence from our laboratory also suggests that it is a reliable instrument. We have found high interrater reliability of judgments when senior clinicians have been compared with each other as well as with intermediate level graduate students (1957, p. 146).

Since the Phillips scale tends to reduce the variability of research data, and has been demonstrated to be more reliable than psychiatric classifications, it was selected for use in the present study. The scale was also chosen since it is more useful for interpreting the results of this study in terms of learning theory than

would be true of classifying the patients in terms of their present symptom syndromes. Symptoms, besides being unreliable, do not indicate the kind of social-learning situations that the schizophrenic patient has experienced throughout his life. The Phillips scale, in a crude way, takes the social-learning history into account.

Learning Theory Interpretation

of the Clinical and Experimental Literature

... language and thinking are characterized by an exaggerated and the Role of Listening Contradictory, competing and more or less irrelevant responses can no longer be excluded. . . . Schizophrenic patients The clinical and experimental literature reviewed in the previous sections has dictated the choice of variables used in this study. In this section an attempt will be made to interpret the thinking disorder of the schizophrenic in terms of an extension of Hullian learning theory and to make clear the role of listening. This will be attempted first by a general discussion of the clinical descriptions of the thinking disorder with particular reference to the variety of interpretations possible, and, second, by a discussion of how the listening distortions of schizophrenic thinking has been characterized by Freud (1925) as a regression to infantile logic; by Goldstein (1939) as the substitution of concrete for abstract thought; by Grunle (1932) as loss of thought; by Pavlov (Kasanin, 1942) as an overdevelopment of inner inhibition; by Meyer (1940) as the result of acute

As early as 1917 Krapelin observed what he called "disconnection of thought" in the schizophrenic. Bleuler (1950) has described the behavior of the schizophrenic

in much the same way. Stransky (1903) as intrapsychic

ataxia. While all of these individuals would not agree

It appears as if those pathways of association and inhibition, established by experience had lost their meaning and significance. Associations seem to take new pathways more easily, and thus no longer follow the old preferred ways, that is, the logical pathways indicated by past experience (Bleuler, 1950, p. 349).

Krapelin and Bleuler observed and described, that is,

Cameron and Magaret also observed the intrusion of the intrusion of remote and irrelevant thoughts. irrelevant thoughts in the schizophrenic responses.

Experimental studies that have taken a learning

these . . . language and thinking are characterized by an exaggerated instability of organization. Contradictory, competing and more or less irrelevant responses can no longer be excluded. . . . Schizophrenic patients themselves often complain about the confusion in their talk and thinking, saying that everything seems mixed up, the words do not come as they once did, thoughts rush in and are jumbled, or seem to be blocked or suddenly to disappear (1951, p. 511). & Page, 1937:

Malmo, Snegass, & Smith, 1951; Richter, 1928; Sze, 1926;

Arieti (1955, pp. 189-273) has observed that the Wulfeck). Furthermore, the research suggests that such irrelevant responses of the schizophrenic occur in direct patients take longer to recover from an effective imbalance relationship to the intensity of the emotion involved.

than do normals (Cohen & Patterson, 1937; Darrow & Heath,

1932; Wulfeck, 1941). Recent work in the areas of conditioning, stimulus generalization, and learning of

in the verbal responses of the schizophrenic. For example, schizophrenics indicates that such states of emotional

schizophrenic thinking has been characterized by Freud

(1925) as a regression to infantile logic; by Goldstien

proposed by Hull (1943) as being the motivational basis (1939) as the substitution of concrete behavior for abstract

of the behavior of the subject (12, 1, 28, 30, 36, 39, 40, 46, 49, 65, 66, 68, 88, 89, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000)

by Pavlov (Kasanin, 1932) as an overdevelopment of inner inhibition; by Meyer (1910) as the result of habit

deterioration; and by Stransky (1903) as intrapsychic ataxia. While all of these individuals would not agree with a learning theory approach to the thought disorganization that they describe, they would probably admit that they are attempting to explain the same behavior that Kraepelin and Bleuler observed and described, that is, the intrusion of remote and irrelevant thoughts.

Experimental studies that have taken a learning theory approach to the study of schizophrenics suggest, first of all, that they are extremely reactive and display much anxiety; or in other words they have a low threshold of emotional arousal (Cohen & Patterson, 1937; Darrow & Heath, 1932; J. Hunt, 1936; Landis, Hunt, & Page, 1937; Malmo, Snagass, & Smith, 1951; Richter, 1928; Syz, 1926; Wulfeck). Furthermore, the research suggests that such patients take longer to recover from an effective imbalance than do normals (Cohen & Patterson, 1937; Darrow & Heath, 1932; Wulfeck, 1941). Recent work in the areas of conditioning, stimulus generalization, and learning of schizophrenics indicates that such states of emotional arousal contribute to "drive strength," the construct proposed by Hull (1943) as being the motivational basis of the behavior of the subject (12, 15, 26, 27, 28, 36, 39, 40, 48, 49, 65, 66, 86, 88, 89, 108, 120, 133). Hull's theory (Hull, 1943, Hull, 1951, Hull, 1952) provides

specific predictions of the influence of increased drive state on behavior, that is, heightened drive state will increase the response strength of any habit tendencies. Hence, individuals with high drive, as in the case of schizophrenics, should show faster conditioning, and also greater stimulus generalization. The research accomplished in this area lends support to these Hullian predictions (Bender & Schilder, 1930; N. Cameron, 1938; N. Cameron, 1939; N. Cameron, 1951; Dunn, 1950; Garmezy, 1952a; Garmezy, 1952b; Mays, 1934; M. Mednick, 1957; S. Mednick, 1955a; S. Mednick, 1955b; S. Mednick, 1957; Pfaffman & Schlosberg, 1935; Razran, 1934; Rodnick, & Garmezy, 1957; Shipley, 1934). For example, a study by Pfaffman and Schlosberg (1935) indicated that schizophrenics show faster conditioning of the knee-jerk response than do normals, and greater stimulus generalization of schizophrenics was demonstrated by Garmezy (1952a), in a study that required subjects to differentiate between tones.

The work of Farber, Spence, Taylor, and others indicated that high drive acts impartially upon correct and incorrect response tendencies, hence pushing many irrelevant responses above the threshold of awareness, thus interfering with the correct responses. Predictions from an extension of Hullian theory would suggest that the listening of individuals with high drive would be disrupted

by the intrusion of remote and irrelevant thoughts which are pushed above the threshold of awareness due to the high drive level and resultant excessive amount of stimulus and associative generalization.

A necessary result of responding with irrelevant associations is a decrease in the accuracy of the schizophrenic's listening by the removal of the correct stimuli from awareness. That is, the intrusion of irrelevant associations disrupt the listening of the schizophrenic so that he is no longer aware of the threatening stimuli. Thus the irrelevant associations will be accompanied by drive reduction and will be reinforced as responses. The decrease in listening by the schizophrenic will be continually self-reinforcing since it will enable him to avoid listening to anxiety provoking stimuli.

Although the above statements should be characteristic of all schizophrenics, the listening of Good and Poor premorbid schizophrenics should vary in regard to degree of deficit in listening. Differences are expected since a Poor premorbid rating is obtained by an individual who from an early period in life avoided associating with others, and who maintained emotional distance between himself and others, whereas such behavior occurs much later in life for the individual rated as a Good premorbid. Hence, the reaction potential for deficit listening would

be expected to be stronger for the Poor than for the Good premorbid due to the Poor premorbid's chronic sensitivity to threat and the lack of competing reaction potentials for adequate listening that might have been gained from closer association with others.

Specific Problems and Hypotheses

The following questions and related hypotheses are suggested from the above review of the literature and extension of Hullian learning theory:

1. Problem: Do Good and Poor premorbid schizophrenics differ in the accuracy of their listening?

Theoretical indication: The reaction potential for deficit listening should be stronger for the Poor premorbid schizophrenic than for the Good premorbid schizophrenic due to the consistent drive reduction and lack of competing reaction potentials which are more characteristic of the Poor premorbid schizophrenic.

Hypothesis: Listening scores of Good premorbid will be significantly higher than listening scores of Poor premorbid.

2. Problem: Do emotionally laden words decrease the listening accuracy of schizophrenics?

Theoretical indication: Emotional words as anxiety provoking stimuli should increase the drive level of both Good and Poor premorbid schizophrenics, thus producing a listening deficit.

Hypothesis: Listening scores of Good and Poor premorbid groups that are presented with highly emotional stimulus words will be significantly lower than the listening scores of their Good and Poor premorbid control groups that are presented with more neutral stimulus words.

3. Problem: Does "censure" decrease the listening accuracy of schizophrenics?

Theoretical indication: Censure should increase the drive level of both Good and Poor premorbid schizophrenics thus producing a lowering of their listening accuracy.

Hypothesis: Listening scores of Good and Poor premorbid groups that are presented with mild censure will be significantly lower than the listening scores of their Good and Poor premorbid control groups that receive no censure.

4. Problem: Does listening accuracy vary with empathic ability?

Theoretical indication: A high positive correlation should be expected to be found between both empathy and listening accuracy, since the high drive level of schizophrenics should decrease both empathy and listening.

Hypothesis: A high positive correlation will occur between empathy and listening scores of schizophrenics.

A. Apparatus

The following apparatus were used in carrying out the study:

1. A multiple choice test of empathy by the writer. There were 10 items and the subject is required to choose one from 12 stimuli. Example (1): BOND is repeated four times, and then 12 choices are presented for which the subject chooses. (See Appendix A)

2. A word-association test consisting of 54 words. These words were intended to tap associations for the low emotionally laden words and were the basis of this test, and these words were also considered as the stimulus words of the listening test. (See Appendix B)

3. Three lists of "paired words" were equated with the stimulus words on the word-association test for

CHAPTER III

METHODS AND RESULTS

Methods

A. Apparatus

The following apparatus and materials were employed in carrying out the present research project:

1. A multiple choice test of "listening" designed by the writer. Three stimulus words are presented orally, and the subject is required to select the stimulus words from 12 similar sounding words. For each S this procedure is repeated four times, so that a total of 12 stimulus words are presented for selection from a total of 48 response choices. (See Appendix A)

2. A word-association test designed by the writer consisting of 50 words. These words were specifically intended to tap emotionality for schizophrenics. High and low emotionally laden words were selected from each S on the basis of this test, and these words were later administered as the stimulus words of the listening test. (See Appendix B)

3. A rating scale, designed by Phillips (1953), to

3. Three lists of "paired neutral words" equated with the stimulus words on the word-association test for (a)

6. Minimal censure was introduced into the experi-

similarity of sound, as determined by a rhyming dictionary (Wood, 1936) and (b) frequency of occurrence, as determined by the Thorndike-Lorge general word count (1944). These lists of words were used to construct a multiple choice test of listening for the experimental condition of "emotionality." (See Appendix B)

4. A tape recorder permitting a more standardized administration of the stimulus words of the listening test. During the experimental sessions, Ss were presented with stimulus words at a fixed interval rate, tone, and volume. Clarity or intelligibility of the stimulus words was determined by an Assistant Professor of Speech from the New Mexico Highlands University, who took into account the local articulatory habits of the schizophrenic population. The speech expert recommended that the recordings be made by an individual who not only was born and raised in the New Mexico culture, but, also, who was fluent in both the Spanish and English languages which are spoken in New Mexico. A staff member of the psychology department at the New Mexico State Hospital was employed to carry out the recommendation of the speech expert. All recordings were accomplished with fresh, unused tapes.

5. A rating scale, designed by Phillips (1953), to dichotomize schizophrenic patients into Good and Poor premorbid categories.

6. Minimal censure was introduced into the experi-

ment by lighting a box reading "right" and "wrong." (See Appendix A)

7. An "empathy" test designed by Dymond (1949), with modifications made by the writer intended to make the rating procedures easier, more intelligible, and more reliable for schizophrenics. (See Appendix C)

B. Selection of subjects

1. A sample of 114 patients diagnosed as schizophrenic by the combined psychiatric and psychology staff was selected from the New Mexico State Hospital and classified by the writer into Good and Poor premorbid categories according to the Phillips scale.

2. Random samples were then drawn from each of the two Phillips categories and these samples, in turn, were randomly assigned to each experimental condition to be tested.

3. The study was restricted to relatively acute, cooperative male patients, for whom there was no evidence of extra-schizophrenic pathology, and who were 18 to 50 years of age. Although these restrictions limit the generality of the findings, it is contended by Rodnick and Garnezy (1957, p. 166), with whom the writer is in agreement, that these patients will provide the needed insights into the conditions which lead into the restricted behavior pathology of the more chronic and deteriorated patients.

Furthermore, when psychotherapy is attempted with schizophrenics it is usually with patients falling in the above described category.

The restriction of the sample to male patients was due to the fact that the Phillips Scale reveals greater predictive validity for males than for females (Rodnick & Garnezy, 1957, p. 166).

C. Experimental conditions and procedures

Good and Poor premorbid Ss were tested by the writer under the following conditions:

1. "Censure"

Four random samples were drawn from the Good premorbid category, and four random samples were drawn from the Poor premorbid category. These random samples, in turn, were randomly assigned to each of the following experimental conditions:

	Good Premorbid	Poor Premorbid
Randomly assigned experimental conditions for "censure"	Listening Scores	Listening Scores
Censure 1 (C1)		
Censure 2 (C2)		
Censure 3 (C3)		
Censure 4 (C4)		

The above described listening test was administered

with "censure" following the responses of the Ss by lighting the words "right" and "wrong". These four conditions of "censure" were:

(C1) Implied censure: The word "right" was lighted for correct responses but the word "Wrong" was not lighted for incorrect responses. Thus criticism was implied when the Ss made mistakes.

(C2) Direct censure: The word "wrong" was lighted for incorrect responses only. The word "right" was not used.

(C3) Direct censure with rewards: The words "right" and "wrong" were used respectively for correct and incorrect responses.

(C4) No censure was applied. The words "right" and "wrong" were not used.

The experimental conditions C1, C2, C3, were set-up to determine whether direct or implied rewards and punishment would reveal a differential effect upon the listening scores. The experimental condition C4 served as the control session for C1, C2, and C3.

Since the testing required seven days to accomplish, the possible environmental or extraneous influences such as "time of day," and "time of week" were systematically rotated for each experimental condition in the following manner:

Two random samples were drawn for the Good preword category, and two random samples from the Poor preword category. These random samples, in turn, were randomly

assigned 1. Good premorbid following experimental conditions:

- a. An equal number of Ss from each experimental condition, selected at random, were tested on each of the days.
- b. Half of the Ss, selected at random, that were assigned to any particular day were tested in the morning, whereas the remaining half were tested in the afternoon.
- c. The order of the experimental conditions also was systematically rotated.

2. Poor premorbid

- a. The above procedure also was carried out for the Poor premorbid Ss.
- b. In addition to the above procedure, Good and Poor premorbid Ss were alternated.

Morning sessions

Monday	Tuesday	Wednesday	Thursday	Friday
GC1	PC2	GC3	PC4	GC1
PC1	GC2	PC3	GC4	PC1
GC2	PC3	GC4	PC1	GC2
PC2	GC3	PC4	GC1	PC2
GC3	PC4	GC1	PC2	GC3
PC3	GC4	PC1	GC2	PC3
GC4	PC1	GC2	PC3	GC4
PC4	GC1	PG2	GC3	PC4

Afternoon sessions

GC1 etc. PC2 etc. GC3 etc. PC4 etc. GC1 etc.

3. "Emotionality"

Two random samples were drawn for the Good premorbid category, and two random samples from the Poor premorbid category. These random samples, in turn, were randomly

assigned to each of the following experimental conditions:

	Good Premorbid	Poor Premorbid
Randomly assigned experimental conditions for "emotionality"	Listening Scores	Listening Scores
High Emotionality (HE)		
Low Emotionality (LE)		

a. Selection of the "emotional" stimuli

1. Emotional words were selected for each S on the basis of the word-association test, and these words were later administered as the stimulus words of the listening test. The multiple choices available to the Ss consisted of these stimulus words, and the sets of paired "neutral" words. (See Appendix B)
2. An individual administration of the word-association test was accomplished with each S. The responses of all Ss were recorded for each word, and their reaction time for each word was by means of a stop watch. The mean reaction time for every word was calculated, and also the mean reaction time for every individual S.

3. For each S in the experimental condition of high emotionality, words were selected from the entire word-association list which seemed, for that particular S, to arouse the greatest amount of emotionality, using the following criteria:

- a. Unusual responses:
- b. Long deviations from the S's own mean reaction time as well as long deviations from the mean reaction time for any given word;
- c. overt reactions interpreted as indicative of emotionality, such as, blocking, extensive comments, or repeating the stimulus word.

4. For each S in experimental condition of low emotionality 12 words were selected from the entire word-association list which seemed, for that particular S, to arouse the least amount of emotionality, using the negative form of the above criteria.

As the administration of the word-association test, the selection of the emotional stimuli, and the administration of the listening test required an additional seven

days, environmental or extraneous influences were controlled in the same manner as described above for the experimental conditions of "censure." The Ss were randomly assigned for testing for each day of the week and time of the day. Also, the order of the experimental conditions was systematically rotated, and the testing of a Good and Poor premorbid S was alternated.

3. "Empathy"

Two random samples were used for this experimental condition; one from the Good premorbid category, and one from the Poor premorbid category.

All Ss were administered the listening test and the empathy test in the following manner:

a. Empathy procedures

1. The Good and Poor premorbid Ss were randomly divided into subgroups of three. Half of these subgroups were composed of one Good and two Poor premorbid Ss, whereas the other half of these subgroups were composed of two Good and one Poor premorbid Ss.

2. Each subgroup met for two hours to arrive at common judgments in regard to the following two tasks: (a) the number of beans in three varying size jars, and (b) aesthetic qualities of the artistic works found in the

Meier Art Judgment Test (Meier, 1940). These sessions took place prior to the empathy and listening testing, and were designed to provide an opportunity for each subject to observe and become acquainted with the other members of the subgroups.

3. After the pretesting period, or "getting acquainted period," each S rated the other two Ss of the subgroup, using the modified "Dymond rating scale of empathic ability." (See Appendix C)

b. Listening procedures

1. All Ss were administered the listening test as described in Appendix A.
2. Although this testing was identical to the experimental condition C4, as used with the control groups for the variable of censure, the same subjects were not used for testing the variable of empathy, since this would have resulted in contamination of either the variable of censure, or the variable of empathy.

Since the above testing required an additional two weeks, the possible environmental or extraneous influences of "time of day," "time of week," and the order in which the tests were administered were rotated in the following

manner: with some of them. In the light of their suggestions

Morning sessions

<u>Monday</u>	<u>Tuesday</u>	<u>etc.</u>
Empathy testing (G1, P1, P2) (random subgroup)	Listening testing (P4, G4, P5) (order of testing)	
Listening testing (P1, G1, P2) (order of testing)	Empathy testing (G4, P4, P5) (random subgroup)	

Afternoon sessions

<u>Monday</u>	<u>Tuesday</u>	<u>etc.</u>
Listening testing (G2, P3, G3) (order of testing)	Empathy testing (P6, G5, G6) (random subgroup)	
Empathy testing (P3, G3, G2) (random subgroup)	Listening testing (G5, P6, G6) (order of testing)	

Since the empathy testing required the use of subgroups composed of three Ss, these subgroups were randomly assigned to each day of the week. Since there were two different compositions within the subgroups, (1 Good & 2 Poores; or 1 Poor & 2 Goods), one type of subgroup was tested in the morning and the other type in the afternoon. Then this procedure was reversed the following day.

Individual listening testing of the subgroup members was alternately administered before and after the empathy testing. Also, Good and Poor premorbid Ss were alternately administered the listening test.

D. Other methodological considerations

Doing research with schizophrenics presents methodological problems that are probably unique to this population. Rodnick and Garnezy (1957, pp. 165-171) recently have discussed these problems and have made suggestions for

dealing with some of them. In the light of their suggestions the following methodological considerations have been incorporated into the present study:

1. Directions

The oral directions given to the subjects were designed to be simple, concrete, and repetitious. Although such directions might produce boredom in normal subjects, with regard to schizophrenics such directions help to insure that they understand the nature of the tasks presented to them.

The empathy test, for example was modified so as to make the test less dependent on memory of the previously rather complex set of instructions. In its original form the Dymond empathy test involved the retention of four general mental sets and the making of responses on an abstract five point rating scale. (See Appendix C). Specific questions were designed and printed on the rating sheets, in place of the general mental sets that Dymond previously used. Also, the test was made more concrete by replacing the abstract points or graduations of the rating scale, with operational statements of the meanings of those graduations.

Likewise, the responses made on the listening test were simplified so that the patient merely was required to make a motor response by pressing a button to indicate his response.

Rodnick and Garmezy believe that such considerations minimize the patient's withdrawal tendencies and encourage the patient to remain a participant in the research.

a. Directions for the listening test

First trial: "When I start the tape recorder you will hear three words. When the tape recorder stops, turn around and push the buttons that are next to the words that you just heard. Any questions?
(Pause) I'm going to start the tape recorder now."

Second trial: "When I start the tape recorder you will hear three more words. When the tape recorder stops, turn around and push the buttons that are next to the words that you just heard. Ready?"

c. Third and fourth trials: Directions are the same as for the second trial.

During the experimental conditions C1, C2, and C3 the directions for the first trial included one or both of the following

additional statements: "If you push the correct buttons, this word will light up." The subject was shown the word "right" on the apparatus. "If you push the wrong buttons, this word will light up." The subject was shown the word "wrong" on the apparatus.

b. Directions for the word-association test

2. Introduction "I'm going to call out a list of words to you, one at a time. After you hear each word, I want you to call out one other word. It does not matter what word you call out, but it should be the first word that you think of after you hear my word. I should like you to call out your words as fast as you can. Remember, after you hear my word you are to call out the first word that you think of, any word, and call out your word as fast as you can. (Before each stimulus word the patient is alerted by saying) Ready?"

c. Directions for the empathy test

"There are twenty-four questions in this booklet. I should like you to read each question and then put a check-mark over the answer that you believe is most nearly

study correct."

The first question was then read to the patient, and he was shown where the check-marks were to be made.

When the patient reached the second page, the examiner ascertained whether or not the patient was clear as to whom the word "he" referred to in the questions.

2. Introducing the patient to the experiment

Since patients tend to be suspicious of new tasks, a "warm up" period prior to the

experimental sessions has been found by Rodnick and Garnezy to be desirable in order to gain the interest and cooperation of the patients.

Such "warm up" periods were used in this study in order to allow them to become acquainted with the experimenter, the apparatus, and the purpose of the experiment.

3. Influence of the tranquilizing drugs

Rodnick and Garnezy (1957, p. 163) have pointed out that,

"The growing use of tranquilizing drugs as a treatment agent in mental disorders has introduced new difficulties in our research. So many patients receive these drugs that it has become increasingly difficult to secure drugfree Ss."

Nearly all of the Ss used in the present

population. study were receiving tranquilizing drugs. The average dosage was 25 mgs., administered three times a day. No control of this variable was possible in the present study except for the randomization that took place for each experimental condition. That is, the distribution of dosages of the tranquilizers was about the same for the Ss used in each experimental condition, as a result of the randomization procedures used in this study.

E. Statistics

The usual statistical technique for testing whether independent random samples have come from the same population is the "t" test. However, the assumptions underlying the correct use of the "t" test would be unrealistic for the type of data collected in this study. It is unlikely that the observations drawn from a psychotic population would be distributed normally and would have the same variance. Furthermore the measurement of the experimental variables does not meet the requirements of an interval scale which is required for the correct use of the "t" test.

Fortunately, the data do meet the requirements of nonparametric statistics for testing the significance of differences of independent random samples from the same

population. Since the data were collected so as to achieve independent random samples and to allow the scores to be classified into ranks, the Mann-Whitney U test seems to be the most appropriate statistical test (Siegel, 1956, pp. 116-127). Other nonparametric tests were available, such as, the median test, and chi-square, but the Mann-Whitney U test is the more efficient one, since it preserves the magnitude of the scores more fully, and further has a power-efficiency of 95.5 percent when compared with the "t" test (Siegel, 1956, p. 126).

Tests of the significance of differences for the variables of "censure" and "emotionality" utilized the Mann-Whitney U test, and in addition interaction effects were measured by the "exact probability test" described by Myers (1958).

In order to test the degree of relationship between the variables of "empathy" and "listening" Kendall's rank correlation coefficient tau was used (Siegel, 1956).

Results

Tables I and II present a summary of the "censure" effects for Good and Poor premorbid schizophrenics in terms of their listening scores. Examination of these tables offers confirmation of the hypothesis that direct censure, used in the experimental conditions GC2 and PC2, decreases the listening of both Good and Poor premorbid schizophrenics

The use of rewards along with direct censure, as employed in the experimental conditions GC3 and PC3, did not alter the above results. Direct censure with rewards produced a deficit effect on the listening of both Good and Poor premorbid schizophrenics.

The use of indirect or implied censure employed in the experimental conditions GC1 and PC1, did not, however, produce the predicted deficit effect.

TABLE I

MEASURES OF CENTRAL TENDENCY AND RANGE
OF LISTENING SCORES FOR THE EXPERIMENTAL
CONDITIONS OF CENSURE

Type of Censure	Good Premorbid			Poor Premorbid		
	Mean	Mdn.	Range	Mean	Mdn.	Range
N's=8						
C1	9.75	11.0	2-12	4.50	4.50	1-8
C2	6.88	7.0	4-8	1.25	1.00	0-5
C3	7.13	8.0	4-10	2.88	3.00	1-5
C4	9.88	10.0	5-12	5.50	5.50	3-10

are concerned, it may be stated that the results support both hypotheses which asserted that Good premorbid schizophrenics were better listeners than Poor premorbid schizophrenics, and that the Poor premorbid would reveal a greater deficit in their listening when exposed to conditions of "censure." The results also indicated that under the conditions of minimal censure used in the study it is necessary to apply the "censure" directly in order to produce a deficit effect in the listening of schizophrenics. Implied or indirect "censure" produced no deficit in the

TABLE II

"U" TEST COMPARISONS WITHIN THE GOOD AND POOR
PREMORBID SCHIZOPHRENIC CATEGORIES FOR THE FOUR
EXPERIMENTAL CONDITIONS OF CENSURE

Experimental conditions of censure	Good Premorbid N = 32	Poor Premorbid N = 32
(C1-right) (C4-control) (group)	U=27, p .323	U=23.5, p .221
(C2-wrong) (C4-control) (group)	U= 7, p .003	U= 3.5, p .001
(C3-right) (C4-control) (& wrong) (group)	U= 9, p .007	U= 7, p .003

In Table III below the results further indicate that under any condition, C1, C2, C3, or C4, the Good premorbid function significantly better in their listening than do the Poor premorbid.

Where the first and third hypotheses of this study are concerned, it may be stated that the results support both hypotheses which asserted that Good premorbid schizophrenics were better listeners than Poor premorbid schizophrenics, and that the Poor premorbid would reveal a greater deficit in their listening when exposed to conditions of "censure." The results also indicated that under the conditions of minimal censure used in this study, it is necessary to apply the "censure" directly in order to produce a deficit effect in the listening of schizophrenics. Implied or indirect "censure" produced no decrease in the

accuracy of listening for either category of schizophrenics.

TABLE III

"U" TEST COMPARISONS BETWEEN GOOD AND POOR
PREMORBID SCHIZOPHRENICS FOR THE FOUR
EXPERIMENTAL CONDITIONS OF CENSURE AND THE
EXACT PROBABILITY TESTS OF INTERACTION

Experimental conditions of censure		Good vs. Poor Premorbid	
		N = 32	N = 32
(GC1-right)	(PC1-right)	U = 7	p .003
(GC2-wrong)	(PC2-wrong)	U = 1	p .001
(GC3-right)	(PC3-right)	U = 4.5	p .001
(& wrong)	(& wrong)		
(GC4-no)	(PC4-no)	U = 7	p .003
(censure)	(censure)		
(GC1-right) X (PC1-right) X (GC4, PC4-no)			p .335
(censure)			
(GC2-wrong) X (PC2-wrong) X (GC4, PC4-no)			p 1.00
(censure)			
(GC3-right) X (PC3-right) X (GC4, PC4-no)			p .875
(censure)			

Tables IV and V present a summary of the effects of "emotionality" on the listening scores of Good and Poor premorbid schizophrenics. Inspection of these tables offers support for the hypothesis that "emotionality" decreases the accuracy of listening of both Good and Poor premorbid schizophrenics. Furthermore, the tables indicate that

"emotionality" produces a greater deficit effect on the Poor premorbid than on the Good premorbid schizophrenic.

TABLE IV

MEASURES OF CENTRAL TENDENCY AND RANGE
OF LISTENING SCORES FOR THE EXPERIMENTAL
CONDITIONS OF EMOTIONALITY

Type of Emotionality N's=8	Good Premorbid			Poor Premorbid		
	Mean	Mdn.	Range	Mean	Mdn.	Range
High	6.38	6.50	3-8	1.50	1.00	0-6
Low	11.0	11.0	10-12	3.38	3.50	1-5

TABLE V

"U" TEST COMPARISONS WITHIN AND BETWEEN GOOD AND
POOR PREMORPID SCHIZOPHRENICS FOR THE
EXPERIMENTAL CONDITIONS OF EMOTIONALITY
AND THE EXACT PROBABILITY TEST OF INTERACTION

Experimental Conditions of "Emotionality"	Good		Poor	Good vs Poor
	Good	Poor		
(HE-G) - (LE-G)	U=0, p .001			
(HE-P) - (LE-P)	U=12.5, p .025			
(HE-G) - (HE-P)	U=3, p .001			
(LE-G) - (LE-P)	U=0, p .001			
(HE-G) X (HE-P) X (LE-G & P)	p .0001			

Table VI presents the rank order correlations (τ) obtained for the variables of "empathy" and "listening" for Good and Poor premorbid schizophrenics. Neither the Good nor the Poor categories revealed the predicted high positive significant relationship between the variables of "empathy" and "listening." However, combining both groups of schizophrenics did yield a τ correlation of .40, significant at the .0096 level. It appears that there is some relationship between the two variables but the obtained relationship is not high enough for predictive purposes.

TABLE VI

KENDALL'S TAU RANK CORRELATIONS BETWEEN THE
VARIABLES OF "EMPATHY" AND "LISTENING" FOR GOOD
AND POOR PREMORBID SCHIZOPHRENICS

Schizophrenic Category	Value of τ	Level of Significance
Good premorbid	$t = .326,$	$p = .1093$
Poor premorbid	$t = .483,$	$p = .3156$
Good & Poor premorbid	$t = .404,$	$p = .0096$

The following tables have been constructed in order to facilitate the discussion of the results of the study. Table VII indicates the degree of matching obtained by randomization within the Good and Poor premorbid categories. Table VIII indicates the differences which resulted from classifying the schizophrenic patients into Good and Poor premorbid categories.

TABLE VII

THE DEGREE OF MATCHING WITHIN THE GOOD AND POOR
PREMORBID GROUPS ACHIEVED BY RANDOM SELECTION

Item	Experimental conditions for Good premorbid					
	C1	C2	C3	C4	HE	LE Emp
Mean age	37.9	38.0	36.7	40.0	34.6	33.3 36.1
Mean educational level	8.8	9.8	8.3	10.5	9.5	8.5 7.0
No. married	4	3	4	3	3	4 3
No. single	4	1	4	3	5	3 1
No. divorced	0	4	0	2	0	1 5
No. Spanish-American	3	5	5	3	2	3 6
No. Anglo-Saxon	4	2	3	4	5	4 2
No. Negro	1	1	0	1	1	1 1
Mean premorbid score	9.4	9.3	9.4	9.1	8.8	7.6 10.0

Item	Experimental conditions for Poor premorbid					
	C1	C2	C3	C4	HE	LE Emp
Mean age	33.8	38.5	36.0	35.5	32.9	32.1 38.9
Mean educational level	7.1	5.3	5.9	5.0	8.5	11.1 7.2
No. married	1	0	0	0	0	0 0
No. single	7	8	7	8	8	7 9
No. divorced	0	0	1	0	0	1 0
No. Spanish-American	7	5	5	6	5	2 6
No. Anglo-Saxon	1	3	3	2	3	5 3
No. Negro	0	0	0	0	0	1 0
Mean premorbid score	24.9	25.0	25.4	25.3	22.1	23.0 25.1

TABLE VIII

DIFFERENCES RESULTING FROM CATEGORIZATION OF
SCHIZOPHRENICS INTO GOOD AND POOR PREMORBID GROUPS

	Good premorbid	Poor premorbid	
No. diagnosed simple type	6	8	p=.395
No. diagnosed catatonic type	3	22	p .001
No. diagnosed hebephrenic type	5	11	p=.105
No. diagnosed paranoid type	31	8	p .001
No. diagnosed undifferentiated	12	8	p=.252
Mean age	36.7	35.4	*p=.209
Mean educational level	8.9	7.2	*p=.156
No. married	24	1	p .001
No. single	21	54	p .001
No. divorced	12	2	p=.006
No. Spanish-American	27	36	p=.159
No. Anglo-Saxon	24	20	p=.326
No. Negro	6	1	p=.062

*Mann-Whitney U test; all others are Binomial tests

CHAPTER IV

DISCUSSION AND SUMMARY

Discussion

The analysis of the results makes it appear that the variables of censure and emotionality have a marked deficit effect on the listening of both Good and Poor premorbid schizophrenics, and that the deficit is greater for the Poor than for the Good premorbid schizophrenics. In addition both categories of schizophrenics maintain a high degree of empathy which correlates positively with their listening, although not as highly as predicted.

These results were predicted from an extension of Hullian theory which suggested that the listening of individuals with high drive, such as is true of schizophrenics, would be disrupted by the intrusion of remote and irrelevant thoughts, which are pushed above the threshold of awareness due to the high drive and excessive amount of stimulus and associative generalization characteristic of the schizophrenic. The irrelevant thoughts have the effect of directing the schizophrenic's attention away from the threatening verbal stimuli and removing the threatening stimuli from awareness. Thus, the irrelevant associations are accompanied by drive reduction and are reinforced

as responses. The decrease in listening of the schizophrenic is continually self-reinforcing since it enables him to avoid listening to anxiety provoking stimuli.

It was predicted that the Poor premorbid would show a greater reaction potential for deficit listening than the Good premorbid, since the history of the Poor premorbid reveals over a greater period of time a number of reinforcements for deficit listening and the Poor premorbid experiences few of the important rewards related to adequate listening.

Although the results offered confirmation of the major hypotheses of the study, a difficulty appeared that requires particular discussion. It will be remembered that the experimental condition C1, which involved the independent variables of minimal rewards and implied censure, had no significant effect upon the listening of either category of schizophrenics. Since the experimental condition involved both rewards and punishments, it is possible that the two independent variables interacted in such a way as to produce a cancellation of any effects that either variable might have had independently. That is, the minimal rewards may have increased the reaction potential for correct responses, and at the same time the implied censure may have decreased the reaction potential for such correct responses. However, a logical analysis in terms of learning theory is not complete nor does it

of the situation suggests that the possibility of such a cancellation effect did not take place. Since the habit strength related to the reaction potential for incorrect responses may be assumed to be higher than the habit strength related to the reaction potential for correct responses, and since the drive level involved should act indiscriminately on both habit strength variables, it may be logically deduced that the expected reaction should favor the reaction potential for incorrect responses. Or in other words, the implied criticism should be the more effective of the two independent variables.

If, on a priori grounds, it is assumed that the variable of implied censure was the effective variable, then it would follow that the lack of statistical significance between the experimental condition C1 (implied censure) and the control group C4 (no censure) was due to the ineffectiveness of the implied censure to raise the drive level and in turn increase the reaction potential for incorrect responses. It might be that the drive level was so high initially that the increment of implied censure was too minimal to increase the habit strength related to the reaction potential for incorrect responses.

Implications of the Results for Psychotherapy

The interpretation of the results of this study in terms of learning theory is not complete nor does it

provide answers for all questions. It has many implications, however, for psychological treatment. In this section an attempt will be made to make these implications clear. This will be attempted first by a discussion of the conditions necessary for psychotherapy to proceed with the schizophrenic as indicated by the results of this study with particular reference to the function of the psychotherapist, and second by a comparison of current techniques in general usage and how they may be understood or modified from the learning theory viewpoint presented in this study.

Dollard and Miller, Mowrer, and Rotter have described in some detail why individuals with personality disorders do not learn more adequate responses (1950, 1948, 1954). The schizophrenic, for example, is characterized by withdrawal or extreme avoidance responses which necessarily prevent him from becoming involved in situations where more adequate behavior may be learned. Since the withdrawal not only serves to eliminate the alternative behavior, but also serves to reduce the anxiety aroused by the threatening stimuli, therefore withdrawal behavior is reinforced. Rotter has described such avoidance behavior in the following manner:

The person who first experiences punishment, failure, or frustration in a situation and then avoids similar situations not only has no opportunity to learn new, adjustive behavior in such a situation but continues

to have a high expectancy for punishment or failure should he do anything but avoid the situation since he has no new experience of gratification or success in it. The avoidant behavior continues to result generally in the relative gratification of eliminating the punishment, rejection, failure, or whatever negative reinforcement is involved. Later punishments resulting from the avoidant behavior or related to it may not be associated at all with the avoidant behavior by the person involved (Rotter, 1954, pp. 336-337).

Mowrer has made similar statements and especially emphasizes that the punishment resulting from avoidance behavior is ineffective in eliminating the maladjustive behavior, since the punishment involved is delayed, whereas the reward resulting from avoidance is more immediate (1948). Dollard and Miller described the persistence of avoidance behavior in much the same way.

It will be remembered that immediate reinforcements are more effective than delayed ones. This principle is called the gradient of reinforcement. One aspect of the principle is that the effectiveness of a reward is reduced the longer the reward is delayed; the other aspect of it is that the effectiveness of a punishment in attaching fears to the cues produced by performing a response is reduced the longer the punishment is administered after the performance of that response (Dollard, & Miller, 1950, p. 187).

Until recently, the experimental literature related to avoidance behavior with cats, dogs, and white rats has been in disagreement as to the persistence of such behavior (Brady, Schreiner, Geller, & Kling, 1954; Miller, 1951; Mowrer, 1940; Schoefeld, 1950; Sheffield, & Tommer, 1950).

Studies by Sidman, and Solomon, Kamin, and Wynne leave little doubt that avoidance behavior is highly resistive to extinction (1955, 1953). Solomon, Kamin, and Wynne concluded that "the results of this experiment indicate that the ordinary extinction procedure is quite ineffective for eliminating the jumping (avoidance) response" (1953, p. 294). Sidman also was impressed with the persistence of avoidance behavior and concluded,

Although the procedure is different from that used by Solomon, Kamin, and Wynne, it does possess the similar property of generating a high resistance to extinction of avoidance behavior (Sidman, 1955, p. 217).

If the avoidance responses of such lower organisms are highly persistent in the single controlled instance of the laboratory, it is certainly reasonable to expect that the avoidance responses of the schizophrenic would also be highly resistive to extinction, since the histories of schizophrenics duplicate the experimental conditions of the laboratory many times over.

The results of the present study indicate that rewards, in the form of approval, have very little effect on the listening of schizophrenics, and that censure, in the form of disapproval has an extreme detrimental effect on their listening. These results conform with both the experimental and clinical literature which attempts to

account for schizophrenic behavior as a defensive reaction to threat.

In attempting psychotherapy with schizophrenics, such avoidance behavior on the part of the schizophrenic should interfere with the kinds of responses desired in the psychotherapeutic situation, thus making the treatment more difficult and the prognosis poorer. The Poor premorbid schizophrenic with a long history of disturbed social and sexual relationships which started when he was young, and continued with few periods in which relationships are adequate is more likely to have missed valuable units of communication skills, including listening, that will be hard to make up. The Poor premorbid will have had more time to practice faulty communication behavior, and, furthermore, since he has experienced few of the important rewards, the psychotherapist will find it harder to establish communication with the patient. The ineffectiveness of rewards, coupled with the disruptive effects of minimal censure, not only interfere with the patient's accuracy of listening to the psychotherapist, but also should interfere with the ability of the schizophrenic to speak to the psychotherapist. Although the same statements describe the communication of the Good premorbid in psychotherapy, the results of this study indicate that they are true to a lesser degree.

In addition, the results not only suggest that psychotherapy should be difficult with the schizophrenic patient, but that psychotherapy may also increase the psychopathology depending on the nature of the technique used.

Conditions Necessary for Communication

with Schizophrenics in Psychotherapy

The data of this study indicate, when considering the communication process of psychotherapy with schizophrenics, that at least two conditions must be achieved for psychotherapy to proceed without incurring further deficit or pathological behavior developing. The psychotherapist must create a social situation that is not only free from censure and emotionality, but also is the exact opposite of the situation originally responsible for producing and maintaining the deficit behavior of the thinking disorder. Surprisingly enough, an inspection of the psychotherapeutic techniques now in common usage reveals many conditions that not only are threatening but also are highly emotionally charged.

Comparison of Current Psychotherapeutic Techniques

At the turn of the twentieth century, suggestion, reasoning, and persuasion were extensively used as

psychotherapeutic tools (Appel, 1944). Psychotherapy often took the form of encouraging, moralizing discussions, with authority and persuasion as the preferred techniques (Payot, 1909). The psychotherapist would advise and admonish his patients, and even organize for them routines for living. The patient was expected to learn submission and obedience to the directions of the psychotherapist (Appel, 1944; Payot, 1909). Diethelm, and Kraines indicate that although the psychotherapeutic relationship has changed toward more permissiveness since the impact of psychoanalysis, most contemporary psychotherapists retain in their relationships with patients a good deal of the early authority, persuasion, and advise giving procedures (1950, 1948).

Psychoanalysis

Even though the variety of psychotherapeutic relationships developed within the framework of psychoanalytic theory are more permissive than earlier procedures, certain aspects of the psychoanalytic techniques still involve procedures that should result in threat and extreme emotionality for the schizophrenic. The theory forces upon the psychotherapist a problem oriented focus and recapitulation of a disturbed social and sexual history. Repressed conflicts which are believed to have developed in infancy and early childhood must be made available to

the patient. The results of the present study make it clear that such an approach to a schizophrenic should result in an increase of the pathology already present.

For the same reasons, it is not surprising that the technique of free association, the cornerstone of standard psychoanalytic procedure, has never met with success when treating the schizophrenic. The technique requires that the psychotherapist first train his patient to report in words everything that occurs to him, no matter how trivial, embarrassing, indiscreet, unpleasant, or anxiety provoking it may be. This is by no means an easy thing to do. The neurotic characteristically experiences heightened anxiety and resistance. For the schizophrenic, free association is an extremely difficult situation, and was not recommended by Freud.

Briefer psychoanalysis as developed by Alexander and French, and other varieties of Freudian oriented psychotherapy are more flexible in their approach to the patient (1946). "As we now practice psychoanalytic therapy," Alexander and French say, "we seldom use one and the same method of approach from the first to the last day of treatment" (1946, p. 25). Instead, they vary the standard procedure very widely in accordance with the perceived needs of the patients. One difficulty the briefer techniques of psychoanalysis have in common

is the use of interpretation that is directed by the historical, problem orientation of the psychoanalyst. Analytic interpretations frequently focus upon sensitive topics and utilize emotionally laden words, such as, "mother," "father," and "sex." The same general type of words produced the reduction in listening found in this study.

In contrast to the standard technique of psychoanalysis and the briefer forms of psychoanalysis as purported by Alexander and French is the calm and permissive technique of Frieda Fromm-Reichmann (1950). Fromm-Reichmann derived her method of treating schizophrenics from the psychoanalytic concepts of Freud and the modifications which Sullivan made of psychoanalysis. She attempted to achieve an atmosphere of trust with the patient, and to maintain an attitude of acceptance, warmth, kindness, and consideration. This was attempted by the expression, gesture, and the voice of the therapist. Recently, however, Fromm-Reichmann has recommended a less emotionally close relationship in the treatment of schizophrenics (1958).

We know the historically deadly fear of schizophrenics of being neglected, rejected or abandoned, and their inability to ask for the acceptance and attention they want. Consequently, most psychiatrists who did psychotherapy with schizophrenics in the early days suggested treating them with utter caution, as I did, or with unending maternal love, permissiveness, and understanding as did Schwing and more recently Sechelage (1958, pp. 407-408).

Fromm-Reichmann has stated that the establishment of a close emotional relationship may be too threatening to the patient because he is fearful that the therapist will discover his hostile impulses.

. . . early traumatization and partial regression make for a weak organization of the schizophrenic's ego. Consequently, he feels more threatened than other people by all strong emotional experiences, and above all, by the realization of his own hostile impulses (1958, p. 408).

Although the present study was not a test of Fromm-Reichmann's interpretations of schizophrenic behavior in the psychotherapeutic situation, the obtained results do support her observations that the schizophrenic feels threatened by emotional experiences.

Client-Centered Psychotherapy

The client-centered technique of psychotherapy, developed by Carl Rogers and his students, varies considerably from the techniques which are psychoanalytically orientated (1951). This approach, like most other approaches, assumes that the patient persists in his inappropriate behavior because it brings him immediate rewards which he is powerless to relinquish. Unlike psychoanalytic therapy, the client-centered therapist directs his attention to the present reactions of the patient in an attempt to

remove the obstacles that prevent new responses. The technique rests on the assumption that growth, or re-learning, will take place if environmental conditions provide freedom and support. The client-centered psychotherapist attempts to avoid advising, judging, or challenging his patient, and most important the psychotherapist does not resort to the type of interpretation characteristic of the psychoanalytically oriented psychotherapist. The guiding principle of the client-centered approach is that the patient should remain free to choose what he will discuss and what he will avoid. This has been sharply criticized by many psychotherapists who assume that a problem oriented approach is the most effective method (Carter, 1948). Their main objection being that a patient may refrain completely from discussing topics which are anxiety-provoking. The present study, however, indicates that with the schizophrenic the conditions striven for by the client-centered psychotherapist are essential for avoiding further deficit in communication.

One difficulty remains with the client-centered approach in treating schizophrenics. Although it is not problem oriented, it is emotionally oriented. Fiedler, Raskin, Rogers, Strupp, and others in studying the process of client-centered psychotherapy find that the type of reaction most frequently employed by the psychotherapist

at all points in psychotherapy was formulating in words the emotional content of the patient's verbalizations (Fiedler, 1950; Fiedler, 1954; Raskin, 1949; Rogers, 1949; Strupp, 1955a; Strupp, 1955b). Such emotional interpretations are different from the psychoanalytic interpretations but nonetheless should have a deficit effect upon the listening of schizophrenics, as indicated in the results obtained in the experimental conditions of "emotionality" of this study.

structuring of psychotherapy, the initial sessions

should avoid discussions of all sensitive topics, and

would be brief.

Suggested Procedures for Psychotherapy with Schizophrenics

One of the most outstanding features of the schizophrenic is his disturbed communication with other people. Certainly in that special case of communication called psychotherapy the role of listening would appear to be an important aspect. Since the data of this study have pointed up a number of contraindications for achieving adequate listening of the schizophrenic, the following speculative suggestions are offered for conducting psychotherapy with this group of patients:

1. Since it is a common observation that patients enter psychotherapy sessions with uncertainty, fear, or hostility, the initial contacts with the schizophrenic should be brief and not problem oriented. The neurotic patient may come to understand the

permissive and accepting character of the situation, but the evidence available from the present and previous research indicates that the schizophrenic will perceive the situation as threatening and immediately withdraw, thus preventing any progress unless extreme care is taken to avoid such threat. Therefore, instead of proceeding with such topics as the description of the problem, symptoms, history taking, or the usual structuring of psychotherapy, the initial sessions should avoid discussions of all sensitive topics, and would be brief.

2. The next step would be to lengthen the psychotherapy sessions, and to give the patient practice in communication skills. The content of the sessions would remain in neutral areas, such as, current events, the weather, or any topic distant from the patient's problems. The role of the psychotherapist at this point would be to encourage the patient to participate in the discussions and to provide direct reinforcement for such behavior.

3. Next, the content of the sessions would move toward alternative and more adequate ways of dealing with situations that usually lead to misery for the patient, rather than exploring his disturbed and emotionally laden premorbid history.

Julian Rotter, working within a social-learning viewpoint, has described and recommended the same procedure for psychotherapy with neurotics.

By reflection, catharsis, insight, discussion, projection, transference, the therapist attempts to get his patient to eliminate his maladjustive behavior, but relatively little emphasis is placed upon alternative or adjustive responses to the same problem situations. Although many therapists accept the importance of the problem of developing adequate responses, they seem to feel that this problem must be pushed aside until one can rub out, eliminate, or erase the maladaptive responses; and yet they experience great difficulty in carrying out such a plan, primarily because the patient involved has nothing better to substitute and so he holds on to what he has. Although the implications of social learning theory are for the usefulness of reducing of the potential for maladaptive behavior, compared with other views toward psychotherapy, we place much greater emphasis on building up the potential for more adequate ways of dealing with the same problem situations (1954, pp. 338-339).

Frequently, adjustive behaviors are used by the schizophrenic, but not as his dominant response. The most direct way of increasing the schizophrenic's reaction potential for more adequate ways of dealing with the problem situations would be through direct reinforcement in the psychotherapeutic relationship.

4. An important step in the therapeutic program would be to locate methods for achieving some control over both positive and negative reinforcements received in the everyday hospital environment. Although the

psychotherapist does have the opportunity to respond with positive and direct reinforcement to the interview behavior of the schizophrenic, ward personnel could be trained to have wide and varied opportunities to respond positively to the behavior of the patient.

5. Finally, the more conventional types of psychotherapy might be initiated if the psychotherapist believes that insight and understanding by the patient into his disturbed interpersonal relationships is needed. This step would depend on the degree of communication established with the patient, and his inability to tolerate the anxiety produced by such methods.

Fourth, the above procedures need to be carried out on female schizophrenic subjects. However, in order to

Future Research

The data of the present study point to a functional relationship between censure, emotionality, and type of premorbid history with relation to listening deficit of schizophrenics. On the basis of the obtained results the following suggestions for further research are offered: First, the results of this study should be compared with data obtained from a non-schizophrenic group under the same conditions in order to provide a further control group.

Does a decrease in attention begin in adolescence, early adulthood, or adulthood?

Second, the same procedures should be repeated on another schizophrenic sample using somewhat more stressful conditions. Perhaps naturally arising stress conditions can be identified and used in place of experimentally induced conditions. Naturally arising conditions would not add to the burden already experienced by the schizophrenic. available premorbid histories, however, the third

Third, in particular, more stressful conditions should be developed for the variable of implied or indirect censure. Although implied censure lacked significance in this study, it remains to be demonstrated whether or not implied censure would produce a deficit effect when such censure is more severe. provides a rough index of the

Fourth, the above procedures need to be carried out on female schizophrenic subjects. However, in order to carry out similar research designs with female schizophrenics, a valid premorbid scale needs to be constructed, along with an analysis of the failures of the Phillips scale to achieve predictive validity for female schizophrenics. An inspection of the Phillips scale reveals an emphasis upon three facets of the premorbid history:

- (1) the amount of interaction or association with others;
- (2) the time span over which decreased association occurs, that is, does a decrease in association begin in childhood, adolescence, early adulthood, or adulthood; and (3) the

degree of emotional involvement revealed in the associations with others. In other words, a Poor premorbid rating would be obtained by an individual who from an early period in life characteristically avoided associating with others, and maintained emotional distance between himself and

others. The first two facets are relatively easy to obtain from the available premorbid histories, however, the third facet is somewhat more difficult and appears to be the factor that fails to achieve predictive validity for female schizophrenics. The following discussion indicates some of the possible reasons for this failure of the Phillips scale. Our culture, the concept of marriage for women can frequently imply a flight from dominance and

The Phillips scale provides a rough index of the degree of emotional involvement with others by investigating

the type of sexual relationships or the lack of sexual relationships in the premorbid history. The questions are

designed to gain information as to whether the schizophrenic is heterosexual, homosexual, married, divorced, single, engaged, goes on dates, masterbates, or refrains from all sexual activity. With male schizophrenics the

mere fact that they attain marital status appears to be an important predictive factor. This has been recently demonstrated by Jenkins and Gurel in a large scale study with male schizophrenics in twelve Veterans Administration Hospitals, in which they found a strong relationship

between marriage and early release from the hospitals (1959).

Although marriage and sexual activity have strong predictive validity for males, this is not the case for females.

Rodnick and Garmezy have observed that,

. . . the Phillips Scale has predictive validity only when applied to male patients and is not an effective predictor of the behavior of the female schizophrenic. The reason for this apparently is to be found in the heavy weighting in the premorbid scale which is assigned to marriage and maintenance of a stable heterosexual relationship. Such weighting is undoubtedly intended to reflect the assumption that the presence of these factors implies a greater maturity in the form of independence, success in freeing oneself from one's parental ties, and the capacity for establishing object relationships. Such a proposition appears to be more tenable in the case of men than it does for women. In our culture, the concept of marriage for women can frequently imply a flight from dominance and independence into a more protective and dependent state and hence may not necessarily be reflective of maturity at all (1957, p. 166).

Although the writer is in full agreement with the statements by Rodnick and Garmezy, it is felt that their interpretation can be taken a step further to point out that because the female can increase her dependency through marriage, marriage is not a good measure of how close or emotionally involved she desires to become. That is, the female schizophrenic's attainment of marital status may merely reflect her need for a dependent role and not her need to establish close personal relationships. On the other hand, since marriage does not offer a comfortable

dependent role for the male schizophrenic, the attainment of marital status is probably a good index of a need to establish a close relationship, and, likewise, the male schizophrenic's failure to get married is probably a good index of his failure to attain close relationships with people in general.

It appears to the writer that a deemphasis on the marital and sexual relationships of the female schizophrenic and further emphasis on the closeness of her general social interrelationships with people would do much to widen the predictive ability of the Phillips scale.

The choice of these variables was guided by both the experimental and clinical literature which attempts to account for schizophrenic behavior as a defensive reaction to threat. The selection of learning theory does not imply a lack of other theories to explain the same behavior. Rather, the advantage of such an approach is found in the readiness with which the hypotheses may be tested, and the support which the clinical and experimental literature has already provided.

The importance of the study lies in the fact that listening is a relatively untapped area of the disturbed communication process which exists with the schizophrenic patient. This study is an attempt to gain insight into the factors that interfere with the listening of schizophrenics. Such insight may allow the psychiatrist to

SUMMARY AND CONCLUSIONS

Specific hypotheses were derived from the review of the literature. This study is concerned with some aspects of the listening of schizophrenics that seem amenable to interpretation in terms of learning theory and current psychotherapeutic approaches to this disorder. It is exploratory in nature and is designed to investigate the effects of "censure," "emotionality," "empathy," and "type of disorder" on the listening of schizophrenics. The choice of these variables was guided by both the experimental and clinical literature which attempts to account for schizophrenic behavior as a defensive reaction to threat. The selection of learning theory does not imply a lack of other theories to explain the same behavior. Rather, the advantage of such an approach is found in the readiness with which the hypotheses may be tested, and the support which the clinical and experimental literature has already furnished. The importance of the study lies in the fact that listening is a relatively untouched area of the disturbed communication process which exists with the schizophrenic patient. This study is an attempt to gain insight into the factors that interfere with the listening of schizophrenics. Such insight may allow the psychotherapist to

improve his ability to communicate with these patients by avoiding those factors that produce a deficit in their listening. 1-association test, and a modified form of

Dymond Specific hypotheses were derived from the review of the literature and an extension of Hullian learning theory. The variables of "censure," and "emotionality" were expected to have a deficit effect on the listening of schizophrenics. The variable of "empathy" was expected to vary directly with their listening accuracy. Listening was also expected to vary according to the classification of the patient. Since the standard diagnostic categories have been demonstrated to be unreliable, the subjects were classified into Good and Poor categories according to the nature of the social experiences found in their premorbid histories. both on. A sample of 114 schizophrenic patients was selected from the New Mexico State Hospital, and classified into the Good and Poor premorbid categories using the Phillips Scale. Random samples were then drawn from each category and these samples, in turn, were randomly assigned to each experimental condition to be tested. The study was restricted to relatively acute cooperative male patients, for whom there was no evidence of extra-schizophrenic pathology, and who ranged in age from 18 to 50 years.

Three measuring instruments were employed in this study. A multiple choice test, designed by the writer,

was used to measure the listening of the schizophrenics. The selection of the "emotional" stimuli was accomplished with a word-association test, and a modified form of Dymond's "Empathy Test" was used to measure the variable of "empathy." The stimulus words for the listening test were presented by means of a tape recorder, and minimal "censure" was introduced into the experiment by lighting a box reading "right" or "wrong."

The results offered confirmation of the major hypotheses of the study which asserted that Good premorbid schizophrenics were better listeners than Poor premorbid schizophrenics, and that the Poor premorbid would reveal a greater deficit in their listening when exposed to conditions of "censure," and "emotionality." In addition, both categories of schizophrenics maintained a high degree of "empathy" which correlated positively with their listening, although not as highly as predicted.

Suggestions were offered for improving communication with the schizophrenic patient in the psychotherapeutic relationship, and future research needs were pointed out.

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APPENDIX A

MULTIPLE CHOICE LISTENING TEST

Stimulus words: (Presented by means of a tape recorder)

Group I SKY, RISE, CHAIR

Group II GOT, FOLD, LIGHT

Group III MAY, WHEN, TRAIN

Group IV WHO, SHADE, MORE

Multiple choice responses: (Ss respond by pushing buttons on a special panel)

Group I 1. DRY 1. SIZE 1. THERE
2. TIE 2. TIES 2. CHAIR
3. BUY 3. WISE 3. WHERE
4. RISE 4. SQUARE

APPENDIX A

MULTIPLE CHOICE LISTENING TEST

Group II 1. NOT 1. FOLD 1. QUITE
2. GOT 2. GOLD 2. LIGHT
3. LOT 3. SOLD 3. WHITE
4. WHAT 4. HOLD 4. HEIGHT

Group III 1. MAY 1. TEN 1. RAIN
2. MAY 2. THEN 2. GAIN
3. DAY 3. WHEN 3. PLAIN
4. GRAY 4. SHINE 4. TRAIN

Group IV 1. NEW 1. PAID 1. FIVE
2. TWO 2. NAME 2. DRY
3. WHO 3. WARE 3. STOP
4. SHOE 4. SEVEN 4. PLACE

Correct answers for scoring:

Group I 3-4-2

Group II 2-1-2

Group III 2-3-4

Group IV 3-4-3

Stimulus words are presented three at a time, and the subject is required

APPENDIX A

MULTIPLE CHOICE LISTENING TEST

Stimulus words: (Presented by means of a tape recorder)

Group I SKY, RISE, CHAIR

Group II GOT, FOLD, LIGHT

Group III MAY, WHEN, TRAIN

Group IV WHO, SHADE, MORE

Multiple choice responses: (Ss respond by pushing buttons and volume. Clarity or intelligibility on a special panel)

Group I	1. DRY	1. SIZE	1. THERE
	2. TIE	2. TIES	2. CHAIR
	3. SKY	3. WISE	3. WHERE
	4. BUY	4. RISE	4. SQUARE

Group II	1. NOT	1. FOLD	1. QUITE
	2. GOT	2. GOLD	2. LIGHT
	3. LOT	3. SOLD	3. WHITE
	4. WHAT	4. HOLD	4. HEIGHT

Group III	1. WAY	1. TEN	1. RAIN
	2. MAY	2. THEN	2. GAIN
	3. DAY	3. WHEN	3. PLAIN
	4. GRAY	4. SEND	4. TRAIN

Group IV	1. NEW	1. PAID	1. FOUR
	2. TWO	2. MADE	2. DOOR
	3. WHO	3. TRADE	3. MORE
	4. SHOE	4. SHADE	4. FLOOR

Correct answers for scoring:

Group I 3-4-2

Group II 2-1-2

Group III 2-3-4

Group IV 3-4-3

placed Stimulus words are presented three at a time, and the subject is required to select the stimulus words from 12 similar sounding words. For each subject this procedure is repeated four times, so that a total of 12 stimulus words are presented for selection from a total of 48 response choices.

In order to facilitate a more standardized administration of the stimulus words, they are presented by means of a tape recorder at a fixed interval rate, tone, and volume. Clarity or intelligibility of the stimulus words is determined by a speech expert and all recordings are accomplished with fresh, unused tapes.

The multiple choice responses are presented to the subjects on a special panel, in order to simplify the means of responding to the stimulus words, and also to make immediately known to the experimenter the exact choices of the subject so that censure can be applied without delay.

The panel consists of a box set at a viewing angle for easy reading. It contains 12 lights which shine through 12 small windows. To the right of each window there are sets of large sensitive buttons which control the lights. Three strips of heavy white paper cover the windows leaving only the buttons exposed. The multiple choice words are printed in 5/32" type on the strips of paper, and are

placed so as to line up with the windows in order to illuminate them when the buttons are pressed.

A separate control panel is wired so that the experimenter can control all apparatus from a distance. This panel consists solely of switches that (1) turn off the lights used by the subject, (2) operate the "right" and "wrong" lights, (3) turn the tape recorder on and off, and (4) a master switch to turn on or off the power source for all equipment.

APPENDIX B

WORD-ASSOCIATION TEST AND PAIRED NEUTRAL WORDS

BOOK PAGE CONTENT

APPENDIX B

WORD-ASSOCIATION TEST AND PAIRED NEUTRAL WORDS

Word-association test ("emotional" words)		Similar sounding multiple choice responses (paired neutral words)					
	T		T		T		T
1. AFFAIR	AA	THERE	AA	CHAIR	AA	WHERE	AA
2. AFRAID	AA	SHADE	AA	TRADE	AA	MADE	AA
3. ALONE	AA	KNOWN	AA	STONE	AA	TONE	A
4. BAD	AA	ADD	AA	HAD	AA	LAD	A
5. BED	AA	LED	AA	SAID	AA	RED	AA
6. BREAST	A	GUEST	A	NEST	A	DESK	A
7. BURN	AA	TURN	AA	TEAM	A	EARN	A
8. CHEAP	A	SHEEP	A	LEAP	A	WHAT	A
9. COURT	AA	SHORT	AA	PORT	A	SORT	AA
10. CRY	AA	DRY	AA	IE	AA	SKY	AA
11. DARK	AA	START	AA	MARE	AA	ART	AA
12. DREAM	AA	GREEN	AA	SEEM	AA	CREAM	AA
13. DIE	AA	BUY	AA	DRY	AA	TIE	AA
14. DREAM	AA	GREEN	AA	SEEM	AA	CREAM	AA
15. EYES	AA	SIZE	AA	TIES	AA	WISE	AA
16. FAIL	AA	SAIL	AA	TALE	A	NAIL	A
17. FIGHT	AA	QUITE	AA	LIGHT	AA	WHITE	AA
18. FIRE	AA	TIRE	AA	WIRE	A	HIRE	A
19. GAS	A	MASS	A	TASK	A	CAST	A
20. GUARD	AA	YARD	AA	HARD	AA	CARD	A
21. GUN	A	SUN	A	TON	A	SUN	AA
22. HATE	A	PLATE	A	BAKE	A	ATE	A
23. HOME	AA	KNOWN	AA	STONE	A	BONE	A
24. HE	AA	BE	AA	SEA	AA	THE	A
25. HOSPITAL	A	CAPITAL	A	POSSIBLE	AA	GENERAL	AA
26. HOT	AA	NOT	AA	GOT	AA	LOT	AA
27. ILL	AA	FILL	AA	WILL	AA	FILL	AA
28. KILL	AA	TILL	AA	FILL	AA	WILL	AA
29. KISS	AA	SIX	AA	THIS	AA	NOT	AA
30. LIE	AA	TIE	AA	TRY	AA	BY	AA
31. LIP	AA	SHIP	AA	THIS	AA	BY	AA
32. LOCK	A	CLOCK	A	BLACK	A	BLACK	A
33. LOSE	AA	NEWS	AA	ONE	AA	ONE	AA
34. MAD	A	MAP	A	MACE	A	MACE	A
35. ME	AA	SEE	AA	BEE	A	SEE	AA

APPENDIX B

WORD-ASSOCIATION TEST AND PAIRED NEUTRAL WORDS

APPENDIX B

WORD-ASSOCIATION TEST AND PAIRED NEUTRAL WORDS

Word-association test ("emotional" words)		Similar sounding multiple choice responses (paired neutral words)					
	f		f		f		f
1. AFFAIR	AA	THERE	AA	CHAIR	AA	WHERE	AA
2. AFRAID	AA	SHADE	AA	TRADE	AA	MADE	AA
3. ALONE	AA	KNOWN	AA	STONE	AA	TONE	A
4. BAD	AA	ADD	AA	HAD	AA	LAD	A
5. BED	AA	LED	AA	SAID	AA	RED	AA
6. BREAST	A	GUEST	A	NEST	A	DESK	A
7. BURN	AA	TURN	AA	TERM	A	EARN	A
8. CHEAP	A	SHEEP	A	LEAP	A	WHEAT	A
9. COURT	AA	SHORT	AA	PORT	A	SORT	AA
10. CRY	AA	DRY	AA	TIE	AA	SKY	AA
11. DARK	AA	START	AA	MARK	AA	ART	AA
12. DEAD	AA	SAID	AA	LEAD	AA	RED	AA
13. DIE	AA	BUY	AA	DRY	AA	TIE	AA
14. DREAM	AA	GREEN	AA	SEEM	AA	CREAM	AA
15. EYES	AA	SIZE	AA	TIES	AA	WISE	AA
16. FAIL	AA	SAIL	AA	TALE	A	NAIL	A
17. FIGHT	AA	QUITE	AA	LIGHT	AA	WHITE	AA
18. FIRE	AA	TIRE	AA	WIRE	A	HIRE	A
19. GAS	A	MASS	A	TASK	A	CAST	A
20. GUARD	AA	YARD	AA	HARD	AA	CARD	A
21. GUN	A	SUM	A	TON	A	SUN	AA
22. HATE	A	PLATE	A	BAKE	A	ATE	A
23. HOME	AA	KNOWN	AA	TONE	A	BONE	A
24. HE	AA	BE	AA	SEA	AA	TEA	A
25. HOSPITAL	A	CAPITAL	A	POSSIBLE	AA	GENERAL	AA
26. HOT	AA	NOT	AA	GOT	AA	LOT	AA
27. ILL	AA	FILL	AA	HILL	AA	TILL	AA
28. KILL	AA	TILL	AA	FILL	AA	HILL	AA
29. KISS	AA	SIX	AA	THIS	AA	LIST	AA
30. LIE	AA	TIE	AA	DRY	AA	BUY	AA
31. LIP	AA	SHIP	AA	TRIP	AA	TIP	A
32. LOCK	A	CLOCK	A	BLOCK	A	KNOCK	A
33. LOSE	AA	NEWS	AA	USE	AA	TWOS	AA
34. MAD	A	MAP	A	MASS	A	LAD	A
35. ME	AA	SEE	AA	BEE	A	TEA	A

WORD-ASSOCIATION TEST
AND
PAIRED NEUTRAL WORDS (continued)

Word-association
test
("emotional" words)

Similar sounding multiple choice
responses (paired neutral words)

	f		f		f		f
36. MEN	AA	TEN	AA	THEN	AA	WHEN	AA
37. MOTHER	AA	COVER	AA	OTHER	AA	BUTTER	AA
38. NIGHT	AA	QUITE	AA	LIGHT	AA	WHITE	AA
39. OLD	AA	FOLD	AA	GOLD	AA	SOLD	AA
40. PAIN	AA	RAIN	AA	GAIN	AA	PLAIN	AA
41. POOR	AA	FOUR	AA	DOOR	AA	MORE	AA
42. RUN	AA	ONE	AA	SUN	AA	NONE	AA
43. SHE	AA	SEA	AA	BEE	AA	TEA	A
44. SHOCK	A	CLOCK	A	BLOCK	A	KNOCK	A
45. SHOT	AA	NOT	AA	GOT	AA	LOT	AA
46. SICK	AA	STICK	AA	SIX	AA	THICK	A
47. SLEEP	AA	KEEP	AA	DEEP	AA	SHEEP	A
48. SMILE	AA	STYLE	A	WHILE	AA	MILE	A
49. THEY	AA	GRAY	AA	WAY	AA	MAY	AA
50. YOU	AA	NEW	AA	SHOE	AA	TWO	AA

APPENDIX C

MODIFIED DYMOND RATING SCALE OF EMPATHIC ABILITY

I. Traits used in the scale

1. Self-confidence
2. Intelligence
3. Selfishness
4. Friendliness
5. Leadership
6. Sense of humour

II. Subject "A" makes the following ratings for the above traits:

1. A rates himself.
2. A rates B as
3. A rates B as he thinks B would rate himself.

APPENDIX C

MODIFIED DYMOND RATING SCALE OF EMPATHIC ABILITY

III. Subject "B" makes the following ratings for the above traits:

1. B rates himself.
2. B rates A as B sees him.
3. B rates A as he thinks A would rate himself.
4. B rates himself as he thinks A would rate him.

IV. Method of calculating degree of "empathy"

1. Empathy measure for A equals the degree of similarity of 3A and 4A, with 1B and 2B.
2. Empathy measure for B equals the degree of similarity of 3B and 4B, with 1A and 2A.
3. The degree of similarity is calculated using the following formula:

$$\text{Empathy} = \frac{1}{KN} ((Y_{01j} - X_0 - X_1 + X) - (X_{01} - X_0 - X_1 + X))^2$$

Where: Y_{01j} is the judges description of o on any item.

X_{01} is the other's self-description o any item.

X_0 is the mean of X_{01} over all items

X_1 is the mean of Y_{01j} over all item

X is the grand mean over all items.

APPENDIX C

MODIFIED DYMOND RATING SCALE OF EMPATHIC ABILITY

I. Traits used in the scale

1. Self-confidence
2. Intelligence
3. Selfishness
4. Friendliness
5. Leadership
6. Sense of humour

II. Subject "A" makes the following ratings for the above traits:

1. A rates himself.
2. A rates B as A sees him.
3. A rates B as he thinks B would rate himself.
4. A rates himself as he thinks B would rate him.

III. Subject "B" makes the following ratings for the above traits:

1. B rates himself.
2. B rates A as B sees him.
3. B rates A as he thinks A would rate himself.
4. B rates himself as he thinks A would rate him.

IV. Method of calculating degree of "empathy"

1. Empathy measure for A equals the degree of similarity of 3A and 4A, with 1B and 2B.
2. Empathy measure for B equals the degree of similarity of 3B and 4B, with 1A and 2A.
3. The degree of similarity is calculated using the following formula:

$$\text{Empathy} = \frac{1}{KN} ((Y_{oi,j} - X_o - X_i + X) - (X_{oi} - X_o - X_i + X))^2$$

Where: $Y_{oi,j}$ is the judges description of o on any item.

X_{oi} is the other's self-description on any item.

X_o is the mean of X_{oi} over all items.

X_i is the mean of $Y_{oi,j}$ over all items.

X is the grand mean over all items.

4. The scores range from 0 to 16. A score of 0 means perfect empathy, whereas a score of 16 indicates no empathy.