MEASURING PRIMARY AND SECONDARY PROCESS THINKING IN SCHIZOPHRENICS AND NORMALS BY MEANS OF THE RORSCHACH

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ABSTRACT

MEASURING PRIMARY AND SECONDARY PROCESS THINKING IN SCHIZOPHRENICS AND NORMALS BY MEANS OF THE RORSCHACH

by Eugene Zukowsky

The present study was undertaken for the purpose of testing the psychoanalytic constructs of primary process and adaptive regression as they apply to schizophrenia. Measures of primary process and adaptive regression were provided by the Holt scoring system for the gauging of primary process on the Rorschach, and the results provided a test of these measures. Four hypotheses, based on psychoanalytic theory regarding ego functioning, were proposed.

The subjects of this study consisted of twenty normal, twenty good premorbid schizophrenics and twenty poor premorbid schizophrenics. The Rorschach test was individually administered to all subjects by the author, following the procedure outlined by Klopfer. All subjects were reasonably matched on age, last school grade, and occupational level.

The Rorschach scoring followed the manual provided by Holt. This manual contains specific directions for evaluating the degree to which primary process is manifest in Rorschach responses and the extent of controls over primary process productions. To provide a measure of reliability for scoring the protocols, the author and another scorer independently scored 10 records, using the overall measure of adaptive regression for this correlation. The inter-scorer reliability was .944. Intra-subject reliability for the same measure was also demonstrated, using the split-half method. The split-half reliability coefficient was .648, significant beyond the .01 level.

A primary process response was defined as any response containing a scorable content and/or formal deviation. The operational measure of adaptive regression is given by the formula

$$ARS = DD \times (FL + DC_1 + DC_2 + \ldots . DC_n)$$

where ARS is the adaptive regression score, DD is the defense demand for each response, FL is the form level, and DC is the defensive contribution for each response.

Measures of primary process were also obtained by calculating the number of content and formal deviations, and number of Level 1 responses, for the purpose of determining if the manner in which primary process was expressed was different for the three groups.

The data were analyzed by using analysis of variance first, to determine if differences existed. If differences were found, comparisons of group means were obtained with the t-ratio using the studentized range distribution. This procedure was followed to reduce the risk of error in making several comparisons between means.

Four hypotheses were tested. The first two were concerned with the number of primary process responses. It was hypothesized that the schizophrenic groups would have significantly greater numbers of primary process responses than normals, and that the poor premorbid group would have more primary process responses than the good premorbid group. These hypotheses were not confirmed. It was found, however, that the manner in which the primary process is expressed differentiated the groups. The schizophrenic groups, regardless of premorbid status, were found to give responses which were closer to the primary process pole, as measured by content and formal deviations and the blatancy of responses. It was proposed that the primary process is revealed more clearly when expressed as the manner of responding, i.e., the more qualitative expressions of primary process, than by absolute number of

primary process responses. When interpreted in this way, the data were found to be in support of psychoanalytic theory.

Two hypotheses dealt with the factor of adaptive regression. It was predicted that the normals would have a higher mean adaptive regression score (ARS) than schizophrenics, and that the good premorbid group would have higher ARS scores than the poor premorbid group. Although neither hypothesis received statistical substantiation, the data were strongly suggestive that these hypotheses would be confirmed with further testing on larger samples. Further analysis of the data led to the finding that normals and good premorbid schizophrenics achieved higher form level scores on primary process responses than the poor premorbid group. There were no differences among the groups on total form level score. These findings were interpreted to mean that normals and good premorbid schizophrenics have similar levels of ego strength, as measured by degree of perceptual accuracy, than poor premorbid schizophrenics. However, the two schizophrenic groups were judged to manifest primary process in similar ways in that they operated at levels closer to the primary process than did normal subjects.

It was concluded that the Holt method for the assessment of primary process on the Rorschach is a valid one. However, it was suggested that the overall measures of primary process responses and, to some extent the adaptive regression score, are too gross. The method was felt to be a potentially valid tool in both future research and clinical diagnosis, and suggestions for future research along these lines were made.

Approved _____
Committee Chairman

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MEASURING PRIMARY AND SECONDARY PROCESS THINKING IN SCHIZOPHRENICS AND NORMALS BY MEANS OF THE RORSCHACH

By

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Dr. Albert I. Rabin, Chairman
Dr. Bill L. Kell
Dr. Gerald F. King
Dr. Terrence M. Allen

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****

In Memory

To Dr. Gerald F. King, who died September 6, 1961, just prior to the completion of this thesis, and whose death is a profound loss not only to those who knew him, but to the field of psychology.

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INTRODUCTION

Schizophrenia is the most serious form of mental illness in this culture and the most widely studied. We are still, however, far from a full understanding of this disorder. Nevertheless, the multitude of observations and empirical findings, and the varieties of frames of reference from which schizophrenia has been viewed have added important bits and pieces to the puzzle which will hopefully culminate in our understanding of this disorder.

We have come to view schizophrenia as the result of a conglomeration of possible factors, many of which are inextricably interrelated. This very knowledge, albeit incomplete, is both an aid to our further understanding and a hindrance to precise research. Most often research has to be carried out with a relatively restricted scope, often at the neglect of apparently important factors. This would seem to be an inevitable result of our incomplete picture of schizophrenia, as well as the difficulties inherent in "in vivo" research. Nevertheless, greater methodological precision has accompanied our increased knowledge.

The various points of view from which the problem of schizophrenia has been attacked often seem unrelated. But it seems safe to say that the study of this disorder is truly an interdisciplinary one. The psychological approach, and particularly the area of disturbances in thinking in schizophrenia has been a widely studied area, and one which has added to our understanding of the syndrome. Disordered thinking was one of the earliest observations made about schizophrenics, and has been widely held by many as being a crucial fact of the disorder. However, the theoretical position of psychoanalysis relative to the constructs of primary and secondary process thinking in schizophrenia

have, as yet, not been subjected to systematic testing. Considering that this theory is one of the most elaborated, and offers excellent opportunities for objectification, this gap in our knowledge becomes important to close.

The major purpose of this research will be to study the broad area of thought disturbances in schizophrenics. We will particularly concern ourselves with the theoretical speculations of psychoanalysis as it pertains to the constructs of primary and secondary process thinking and to the relationship between primary and secondary process modes of thought to schizophrenics and normals.

CHAPTER I

PRIMARY AND SECONDARY PROCESS THINKING

The theoretical position used as a base in this study will be that of Freud's schematic elaborations of primary and secondary process thinking as well as later modifications and additions offered by "Ego Psychology." We will here be concerned with Freud's development of the concepts of primary and secondary processes, the later notions of adaptive regression, the relation between these concepts to schizophrenia, and their measurement, i.e., their "operational definition," via the Rorschach.

Freud's Formulations

Freud developed and elaborated his ideas on primary and secondary processes in three major works (1911, 1915, 1938). He has dealt most extensively with this topic in The Interpretation of Dreams, Chapter VII (1938), originally published in 1900.

In essence, the theoretical elaboration of primary and secondary process is intimately related to two major concepts. First, the topographical "divisions" of unconscious (ucs), preconscious (pcs), and conscious (cs), particularly as they pertain to the "System Ucs," are most relevant. Secondly, from a "genetic" point of view, the primary-secondary process distinction is intimately connected with ego development.

The postulating of unconscious mental life is both basic to psychoanalytic theory in general and to the concept of primary process in

particular. Freud (1912) distinguished the difference between "conscious" and "unconscious" in terms of conceptions which were present in awareness, and "latent conceptions." These latent conceptions, however, have the potentiality of entering awareness. One case in point here is that of memory. However, with the exploration of dreams, Freud came to understand unconscious mental life not as a particular mental act, but rather as "a system of mental activity." He therefore designated mental activity belonging to this system as The System Unconscious (Ucs). It now became possible to investigate the properties of this system as they differ from the properties of The System Conscious (Cs). This investigation began with probings into the meaning of hypnotic phenomena and culminated in the analysis and understanding of dream-processes.

Freud (1915) conceptualizes unconscious mental life in two ways. "The unconscious comprises, on the one hand, processes which are merely latent, temporarily unconscious, but which differ in no other respect from conscious ones and, on the other hand, processes such as those which have undergone repression, which if they came into consciousness must stand out in the crudest contrast to the rest of the conscious mind" (p. 104). The former, latent processes, are those aspects of the preconscious which, given sufficient intensity and attention, could become conscious. In regards to the latter processes, he is directly alluding to the peculiar properties of the primary process. The "abnormal processes" are a result of the characteristics of the system Ucs. Since this system consists of "instinct-presentations" whose aim is to discharge their cathexis under the laws governing the pleasure principle, the processes of discharge are also subsumable under the laws of the pleasure principle. Freud (1916) outlines four major properties of these processes.

1. Ideas may become concentrated in a single conceptual unit. That is, ideas are <u>condensed</u>.

2. So as to facilitate discharge, intermediary or compromise ideas are established.
3. These ideas which transfer their intensities to one another are loosely associated and not bound by conventional logic.
4. Contradictory ideas can exist side by side.

In further elaboration of the qualities of unconscious activity (1915) he sees the processes of the Ucs as timeless, unburdened by considerations of reality, where there exists no negation, dubiety or varying degree of certainty nor mutual contradiction. "In the Ucs there are only contents more or less strongly cathected."

In Freud's system, since these processes follow the pleasure principle and, since infantile life is governed by this principle, the psychic systems can be expressed in a temporal order. Thus, Freud is able to speak of the primary process as temporally older, "the residues of a phase where they were the only kinds of mental processes."

The postulation of psychic systems as older, more primitive, as opposed to recent or "mature," raises several points worth-while elaborating on. For one, it allows for the concept of "regression." Freud (1938) speaks of a "threefold species of regression." There is a topological regression, a regression within the psychic systems of Cs, Pcs and Ucs. He also notes a Temporal regression, which has already been described, and lastly, a Formal regression to more primitive modes of representation and expression. The characteristic of this latter type of regression is clearly seen in dreams where "the idea is changed back into the visual image from which it once originated." Secondly, in an earlier quote (p. 4), Freud alluded to the idea that only repressed ideas are subject to the primary process. He has stated this idea more explicitly. "Such an abnormal psychic elaboration of a normal train of thought takes place only when the latter has been used for the transference of an unconscious wish which dates from the infantile life and is in a state

of repression" (Freud, 1938, p. 532). Thus it will be that thoughts which have been repressed, i.e., are cathected by the unconscious, will succumb to the primary processes and will reveal themselves according to the formal qualities related with this primitive mode of representation.

From a developmental point of view the relation between primary and secondary processes and ego functions are important and help to throw light more fully on the nature of the primary processes. We have stated earlier that the Ucs follows under the regulation of the pleasure principle. Under this state of affairs, where the purpose is to avoid excitation, the only channel open to discharge was through motility. With the accumulation of excitation, which is felt as "pain," the system is set in motion to relieve this excitation, the relief of which is experienced as pleasure. Freud calls this striving for pleasure a "wish" and "the first occurrence of wishing may well have taken the form of a hallucinatory cathexis of the memory of gratification" (1916, p. 533). Thus, in early infantile life, whatever was wished was hallucinated (imagined). Under repeated frustration, the child learns that these hallucinations are incapable of bringing satisfaction, and are eventually abandoned. Therefore, the activity of a second system was required which "had to decide to form a conception of the real circumstances in the outer world and to exert itself to alter them" (1911, p. 4). This introduced a new principle of mental functioning, that of the reality principle. Whereas in the primary process energy is loosely bound so as to facilitate discharge, under the requirements of reality, restraint of motor activity was now necessary. This newly "bound" energy replaced automatic discharge with, out of economic considerations, small amounts of cathexes manifesting in "experimental thought." Thus, thinking, under the sway of the reality principle, becomes an experimental way of acting. But in order for this to achieve the required satisfaction, thinking itself had to follow the rules of reality. Thus, primitive mental activity is modified "by bitter practical experience"

into a secondary and more appropriate activity, that of the reality principle. Thinking under this new system is logical, tied to considerations of reality and is economic. These are the modes of the latter secondary processes. Freud generalized to these notions after understanding dream processes. He noted that two processes participate in dream formation. "One forms perfectly correct and fitting dream-thoughts, equivalent to the results of normal thinking, while the other deals with these thoughts in a most astonishing and, as it seems, incorrect way" (1938, p. 532). The former corresponds to the secondary elaboration of dreams and is analogous to the work of the secondary processes. The latter consists of the dream-work proper and is subject to the laws of the primary process.

Subsequent Elaborations: Ego Psychology

The characteristics of the primary and secondary processes have been further elaborated by several authors (Fenichel, 1945; Rapaport, 1950; Schafer, 1954, 1958; and Bellak, 1958). In a paper on "regression in the service of the ego," Schafer (1958) integrates the notions of Freud, Hartmann (1951) and Kris (1951, 1952) as to the adaptive use of the primary process. Hartmann (1951), in postulating a "conflict-free" sphere of ego functions, observed that the ego operates with varying degrees of neutralized energy, the more neutral the less encumbered by conflict and the greater degree of autonomy of the ego. The degree of neutralization corresponds to Freud's conception of sublimation, but goes beyond it in the sense that there is a recognition of ego functions not tied down to instinctual life (Hartmann, 1955). In delineating the differences between primary and secondary processes with the inclusion of the later ideas from ego psychology, Schafer (1958) has said: "Primary process, which is genetically and formally the more primitive, operates with unneutralized drive energies" whereas in the secondary process "energies are

relatively neutralized, i.e., relatively bound in motives and structures of a highly socialized nature." Thus, in primary process thinking there is a sexualization or aggressivization of thought, being under the domination of drives. However, in Kris' (1951, 1952) conceptions it was observed that the primary process could be utilized for constructive, creative purposes. Freud (1911, 1938) had already pointed the way here by observing that unconscious strivings can be directed and guided into superior aims (1938) and that the artist allows full play to erotic etc. wishes but finds a way back from fantasy to create a new reality (1911). Kris (1951) has termed the utilization of primary process for creative purposes "regression in the service of the ego." This process implies central controlling functions in the ego which may, however, suspend other functions, such as defensive and logical functions. Thus, this concept refers " . . . to the ego's permitting relatively free play to the primary process in order to accomplish its adaptive task" (Schafer, 1958, p. 125).

That this process involves ego control and is, therefore, an active process, has implications for psychopathology. Generally, the encroachment of the primary process into normal, waking life, when not used for adaptive purposes, is a passive, relatively overwhelming process. It requires ego weakness rather than ego strength as is required for its adaptive use. It follows that in states of relative ego weakness, e.g., schizophrenia, primary process will be more abundantly exhibited.

Freud (1924) has conceptualized schizophrenia as a conflict between the ego and the environment such that libido is withdrawn from external objects back into the ego resulting in a regression to primary narcissism. This regression also accounts for the observation ". . . that in schizophrenia a great deal (of primary process) is consciously expressed" (1915). Freud's ideas have been reviewed and summarized by Fenichel (1945), but a theoretical paper by Hartmann (1953) deserves our close attention

here. Using Freud's speculations as his premise, Hartmann elaborates on the theme of ego functions in schizophrenia. Taking as a starting point that in schizophrenia the ego is weak, he speculates as to why this might be so. In terms of specific ego functions he notes that the ego's ability to act as a mediator between drives and reality is impaired, either because of deficiencies in ego defensive mechanisms or that those ego functions which maintain contact with reality may be incompletely developed or weakened. Thus, since repression is either lacking or faulty in the schizophenic, due to the ego's inability to maintain sufficient countercathexes, this leads to a tendency toward conflict, and, at the same time, the ego is incapable of dealing with it. Therefore, he concludes, "the ego may be the weak link in the psychological setup before the outbreak of psychosis." More specifically, it is the ego's impaired ability for neutralization which is "a fundamental character of the ego disorder in schizophrenia." Hartmann postulates that the degree to which instinctual, libidinal energies have been neutralized may coincide with the degree to which the primary process has been replaced by the secondary process. Non-neutralized ego functions are those which have been sexualized or aggressivized. In essence then, Hartmann hypothesizes a deficiency in primary autonomous factors in the ego which contribute to the vulnerability of defense and of the capacity for neutralization in schizophrenia. Further, given the ego's inability to neutralize instinctual energy, it can be concluded that there will be a greater reliance on primary process in schizophrenics.

This view has been reinforced by Bellak (1958) who considers schizophrenia a result of, for a variety of reasons, poor ego functioning. He holds, further, that thought disturbances are the most sensitive indicators of ego disturbances and that "the formal characteristics of schizophrenic thinking are identical with the formal descriptive characteristics of the primary process" (p. 19). He postulates that any event

sufficient to lead to a primary developmental ego weakness or to secondary weakening of the ego may lead to the schizophrenic syndrome.

Attempts at Measurement

In terms of the measurement of primary process thinking in the Rorschach, this has generally been implicitly done. Most Rorschach workers utilize some means of designating the signs indicative of a thought disorder, but there is little systematization among workers. In some scoring schemes (Rapaport, Gill, and Schafer, 1946) there are ways of classifying deviant responses, e.g., fabulizations, peculiar, queer, etc., whose presence may or may not be pathognomonic. But by and large the "measurement" i.e., objectifying, of degree of thought disorder has remained wanting.

Holt (1956) has attempted both to describe as well as objectify primary process manifestations. He starts out with the assumption that the more "primary" the thinking the more it is organized and compelled by drives. Further, as a result of being compelled by drives, thinking will then have certain formal characteristics, such as autistic logic, loose and inappropriate associative links and various kinds of reality distortions. Essentially by a process of classifying responses as to their instinctual drive derivatives, formal qualities, and defensive attributes, he has developed a scheme by which primary process can be detected and measured, i.e., operationalized. In Chapter IV Holt's system will be dealt with more elaborately.

CHAPTER II

SCHIZOPHRENIA AND DEVIATIONS IN THOUGHT PROCESSES

Introduction

Early investigations in "dementia praecox" (an earlier term for schizophrenia) were focused on attempts to discover a causative agent for the disorder. In the late 19th century and early in the 20th century the belief was widely held that dementia praecox was either due to a specific disease agent or was a somatic disorder, perhaps inherited. As a result of these views energy was directed towards finding the etiological factor responsible for the disorder. Despite shifts in perspective due to more current information about schizophrenia, much of contemporary research is based on long held views concerning organic etiology. There is a good deal of highly sophisticated and important work being done, for example, in the area of physiological research with schizophrenics. This has evolved to the point where differences within the general group of "schizophrenics" have been noted, differences which cut across the classical diagnostic subcategories. In some instances new typologies have arisen which are based on autonomic differences (Meadow and Funkenstein, 1951), and important distinctions are now being made which are based on the past history of the patient. A good deal of research and speculation has been generated concerning the distinction of "process-reactive" schizophrenia, and there are implied etiological differences in this distinction (Brackbill, 1956).

The present study is not concerned with possible somatic differences within schizophrenics, nor, except possibly in an indirect way, with etiological factors. We are mainly concerned with behavioral correlates

and psychological processes in schizophrenia, particularly as they relate to disturbances in thought. The research to be reviewed in the following pages will, therefore, largely be confined to studies of thinking in schizophrenia, with emphasis on Rorschach findings. It is to be noted that, regardless of the point of view taken with respect to schizophrenia, most if not all workers have taken cognizance of deviations in thinking. Thus, as a psychological variable, disturbances in thinking play a part in the phenomenology of schizophrenia, without necessarily owing allegiance to any particular point of view. We will, however, explore some works pertaining to dichotomies in schizophrenia, but only for the purpose of integrating the notions of disordered thinking with this view.

Dichotomies in Schizophrenia

It is not a recent observation that there are differences among schizophrenics with regard to symptomotology and prognosis. Much effort has been spent attempting to separate schizophrenics into two groups, this separation being based on a combination of somatic and psychological observations. We will review some of the literature in this area and show its methodological importance for contemporary research.

Bleuler (1950) was one of the first to take issue with Kraepelin insofar as the course of dementia Praecox leading to inevitable deterioration was concerned. Bleuler noted that patients with acute onsets and clouded sensorium generally had a good prognosis. Meyer (1921), noted that one of the more frequent prepsychotic indices of poor prognosis was the presence of introversion or "shut-in" personality, and the observations of Hoch (1921) tend to support this belief.

In a study of 25 recovered cases of dementia praecox, Strecker (1929) pointed out that a crucial prognostic sign was the presence of a precipitating cause. Sullivan (1929), studying the outcome of 100

schizophrenics, found that recovery was twice as good in patients where there was an acute onset than in those cases with insidious onset. Further, as partial corroboration of Meyer's observations, the "shut-in" personality was characteristic of most of the poor prognostic group, but absent from all of the recovered cases. However, another study (Hunt and Appel, 1936) observed that a common factor in both a recovered and unrecovered group of 30 patients "lying midway between schizophrenia and manic-depressive psychosis" was the presence of early onset and a serious precipitating factor. What differentiated the recovered group, in comparison to the unrecovered cases, was relief from the precipitating stress situation.

Langfeldt (1937), following a group of 100 patients for 6-10 years, found higher improvement rates in previously identified atypical cases than in typical cases. Those patients with poor recovery rates were characterized by early, insidious onset, gradual personality change, and the typical symptoms described by Kraepelin. Stressing the need for further differentiation within the schizophrenic group, he suggests (Langfeldt, 1951) the distinction of "Typical Schizophrenia" for those patients coinciding with the original formulations of Kraepelin, and "Schizophreniform," for atypical groups with good prognosis.

A large number of studies reported in the literature (Stalker, 1939; Paskind and Brown, 1940; Kant, 1940, 1942; Meduna and McCullough, 1945; Clow, 1953; and Schofield et al., 1954) indicate that there seem to be essentially two types or extremes along the schizophrenic dimension. Darrah (1940), has suggested that the term dementia praecox be reserved for those cases with early insidious onset and development, and where there is a steady course towards deterioration. Those patients showing no particularly predisposed prespychotic personality, with acute onset following an obvious environmental stress, and where there is good prognosis should be termed schizophrenic. This dichotomization is also proposed by Bellak (1948, 1949).

The studies of Wittman (1941, 1948), and Wittman and Steinberg (1943) tend to corroborate already existing evidence of the existence of two extremes within the category of schizophrenia. Phillips (1953) devised a scale for rating the premorbid adjustment of schizophrenics and found that maturity in the premorbid period, particularly social and sexual adequacy, was related to good prognostic potential. This scale was used effectively in a group of studies reported on by Rodnick and Garmazy (1957), who emphasize its methodological importance in terms of reducing the heterogeneity in schizophrenic samples.

The first study utilizing the distinction process and reactive schizophrenic was that of Kantor, et al. (1953). They dichotomized a sample of schizophrenics into process and reactive on the basis of Wittman's classification. Rorschachs on each patient were independently rated as to the presence, or absence of a psychosis. They found that the Rorschachs of the process schizophrenics were more frequently judged psychotic than those of the reactives; the latter protocols tended to more closely resemble the records of normals. An earlier study by Stotsky (1952) had also found that WAIS and Rorschach records of remitting patients tend to resemble those of neurotics, while nonremitting patients looked more psychotic on these tests. The author concluded that emotional and intellectual functioning are less impaired in remitting than in nonremitting patients.

In a critical review of the literature on physiological studies in schizophrenia, Brackbill (1956) speculates that ". . . The evidence is sufficient to postulate the existence of organic brain disease in some, but not all, schizophrenic patients. Those who show the classical signs of formal thinking disorder . . . may have some kind of structural brain damage. On the other hand, those who show . . . no thought disorder, may not have central nervous system pathology" (p. 223). Using this distinction to test the hypothesis that some schizophrenics are suffering

from some kind of organic involvement, Brackbill and Fine (1956) used known organics with which to compare process and reactive schizophrenics. They hypothesized that the process group would not differ from known organics on the incidence of Piotrowski's "organic signs," but both will differ from reactives. Their hypotheses were confirmed.

Summary

Although the initial discriminating feature between patients who tended towards recovery and those who tended towards deterioration was the distinction acute or chronic, this has subsequently been amplified to include a wide variety of factors. The most common, and probably the most reliable of these factors is that of early, insidious development, with a generally withdrawn, schizoid personality as contrasted with an acute, obviously precipitated onset in a relatively benign or well-adjusted prepsychotic personality. Thus, it is important both conceptually and methodologically, to estimate the level of prepsychotic adjustment (King, 1954). Many have speculated that with chronic, "typical" (in the Kraepelinian sense) schizophrenics we may be dealing with essentially a psychosis of organic origin, while schizophrenics with good prognosis may be of psychogenic etiology. The tenability of this view is still open to serious question. So far, it would seem that Brackbill's notions that there is organic involvement in what might be called "process" schizophrenics is not untenable. However, he himself cautions that, at this stage, due to the general lack of normal controls in most of this research, the findings of disordered physiology in schizophrenics can as easily be interpreted as a consequence of the psychosis rather than as an etiological factor.

Thinking in Schizophrenia

This section will be devoted primarily to studies of thought disorders in schizophrenics, with particular emphasis on Rorschach findings.

Deviations from conventional thinking in schizophrenia were noted early, but it wasn't until Bleuler (1950) that they were described accurately. In fact, as opposed to all other symptoms, he relegated the thought disturbances to the role of primary symptoms. In other words, the presence of a disturbance in thinking was the sine qua non of schizophrenia according to Bleuler.

A good deal of investigation has taken place in the area of concept formation and abstract ability. Much of this gained impetus from the work of Vigotsky (1934) and Goldstein (1939, 1943). In general, most of the studies tend to show that schizophrenic thinking is impaired in three ways: They perform poorly on tasks requiring the ability to make generalizations, the handling of abstract relationships, and the analysis and synthesis of conceptual wholes.

The studies of Hanfmann and Kasanin (1938, 1942), utilizing Vigotsky's concept formation test with schizophrenics, generally corroborate the idea of a loss of abstract ability in schizophrenics. They note, in comparing schizophrenics with organics, that although many cases of schizophrenia often bear a close resemblance to cases of irreversible brain disease, they differ in having a greater variability and "a certain imaginative quality" to their productions, lacking in organic cases. In relating impaired abstract ability to the type of clinical picture, these authors found that those schizophrenics who appeared to resemble severe neurotics, and those who generally presented an acute, overactive, schizoaffective clinical picture, showed no impairment in thinking as measured by the Vigotsky test. However, there was severe impairment with the older, chronic patients.

The relationship between abstract ability and prognosis has also been investigated. Meadow and Funkenstein (1951), have shown a relationship between the loss of abstract ability and autonomic reactivity. Both of these have been related to poor prognosis. Where no loss of abstract ability is found the prognosis remains good.

In a study attempting to relate the observations of "looseness of association" and "impairment in abstraction" in schizophrenics, Meadow and associates (1953) note that both have been considered by various writers as primary symptoms and related to prognosis. Taking a sample of 41 chronic schizophrenics who seemed to be a ". . . true schizophrenic group as it was conceived by Kraepelin," they correlated several tests measuring looseness of association and impaired ability for abstractions and found that all measures were correlated significantly with each other. As the sample consisted only of chronic patients, these measures were therefore also correlated with poor prognosis. Because no control group was used it is impossible to make any comparisons or generalizations as to the characteristic patterns exhibited by these chronic patients in relation to other groups, particularly patients with good prognosis.

The bulk of the studies on thought in schizophrenics deal mainly with conceptual thinking. By and large, the results indicate a loss or deficit in conceptual thinking of schizophrenics. However, many of these studies, particularly the earlier ones, tended to suffer from methodological inadequacies in the sense that the schizophrenic samples used were usually heterogeneous groups and were not adequately described. It would seem that the loss of the abstract attitude is insufficient to explain impairment in schizophrenic thinking, as this concerns itself with only one aspect of the thinking process.

Thinking in Schizophrenics as Reflected in the Rorschach

The comments and observations of Benjamin (1944) pertaining to his findings on thought disturbances as measured by his Proverbs test and the Rorschach are pertinent. He reports similar findings between these two tests. He notes that almost all the "typically" schizophrenic formal Rorschach characteristics which permit a blind diagnosis are in the field of thinking or closely related to it (Succession, F+%, DdW and DW, formally absurd Dd's, and discrepancies between these and other factors). However, his preliminary Rorschach results reveal three important findings: 1) not all schizophrenics show signs of a formal thinking disorder, 2) when apparent, these signs of thinking disorder are relatively independent of the stage of the illness and the clinical picture, and 3) there is a "definite prognostic significance of these signs." Benjamin hypothesizes from these observations that ". . . only those cases with formal thinking disorders tend to "deteriorate," and that the severer these disorders are, the greater are the chances for, and the quicker the course of, the deterioration." He goes on to speculate that if further research corroborates this hypothesis, i.e., that there are schizophrenics with and without formal thinking disorders, "this would perhaps constitute the best criterion for distinguishing between process and reaction." This is similar to the hypothesis of Brackbill (1956).

The trend in Rorschach research along the line of thought disorders has followed several theoretical orientations. Some stem from Rorschach "theory," others from developmental theory, and still others from psychoanalytic theory. Despite the differing orientations they all deal with the measurement of deviations in thinking.

In 1952, Watkins and Stauffacher published "An index of pathological thinking on the Rorschach." This index, stemming from theoretical considerations about the formal characteristics of the Rorschach which

reflect thought patterns, arrived at an "index of deviation" in thinking between an unselected group of psychotics, neurotics, and normals. These formal characteristics were classified under such headings as vagueness, confusion, autistic logic, confabulation, etc., and each incidence was given a specific scoring weight. They found that this index of deviation was able to reliably discriminate among psychotics, and normals and neurotics. However, it could not distinguish normals from neurotics. Rieman (1953) found that several Rorschach factors showed significant differences between neurotics and ambulatory schizophrenics, these factors being essentially concerned with form level and pathological verbalizations.

Developmental Theory and Rorschach Findings

A group of related research studies stemming from Werner's (1948) developmental theories as they pertain to perceptual development and regression are pertinent here. First, however, it may be well to summarize briefly Werner's thinking on this topic.

Werner conceives of the process of development as going through various stages of differentiation and integration. Mental life proceeds from a primitive, "syncratic" stage, in which there is little differentiation of motor, sensory, and affective functions to a mature stage where there is "discrete" differentiation of functions. One of the characteristics of the child's thinking, for example, is its concrete, "pars pro toto" quality. To put this in more explicit terms so that the relation between his theorizing and its application to perceptual processes as measured by the Rorschach becomes evident, Werner holds that development proceeds from a "diffuse," homogeneous level, to an articulated level where the whole is divided up into related parts.

Based on the theoretical notions of Werner, Friedman (1953) developed a scoring system for the Rorschach which was designed to

reflect degree of perceptual differentiation. Essentially, he used a breakdown in form-level scoring as applied to wholes and details. Using samples of undifferentiated schizophrenics, normal adults, and normal children, he found, as hypothesized, that the schizophrenics, in the structural aspects of their perception, function at a genetically lower level, similar to, but not identical with, that of young children. Thus, he feels it is valid that there is a perceptual regression in schizophrenics although by no means a complete one.

Using the scoring developed by Friedman, Hemmendinger (1953, 1960) directly tested Werner's theory in a study of normal children from 3-10 years, and a group of normal adults. He found a developmental hierarchy in perceptual integrations from global, amorphous whole percepts, through mediocre details, to well integrated, form dominant perceptions.

Siegal (1953) applied this scoring schema to various diagnostic subgroups of schizophrenics. He found that the perception of the paranoid corresponds to the more differentiated, but little integrated perception of children between 6-10 years, while the hebephrenic and catatonic resemble the global, amorphous perceptions of the 3-5 year olds. However, all groups show combinations of genetically early and late characteristics. In some early studies by Cameron (1938, 1938a, 1939), using indices of thinking other than the Rorschach, the concept of regression was questioned. Cameron reports that he could not find the thinking of schizophrenics comparable to the thinking of normal children and senile patients. He concluded that the concepts of regression and deterioration in schizophrenia was faulty. He felt that schizophrenics showed a disintegration in their ability to use symbols, but that this was a reversible process.

Several studies have attempted to apply Werner's theory of genetic development as reflected in the system devised by Friedman in the

process-reactive dichotomy. Two such studies by Becker (1955, 1956) found that when the scoring is interpreted as revealing degree of thought disorder, process schizophrenics revealed a greater degree of thought disturbance than reactive schizophrenics (Becker, 1955). Interpreting the scores as revealing a "genetic-level," Becker (1956) found that process schizophrenics had a lower mean "genetic-level" score than reactives. Becker interpreted these results to indicate both a perceptual and thought regression in process schizophrenics. However, since both studies lacked a normal control group, no comparisons could be made between, e.g., reactives and normals. Considering the fact that the Kantor et al.(1953) study found no differences between Rorschachs of reactives and normals, this omission is to be criticized.

In what is essentially a repetition of Becker's later study (also without a normal control group), Fine and Zimet (1959) found the same differences between process and reactive schizophrenics in that the process schizophrenics reveal genetically "lower" type perceptions. However, the authors draw the analogy between genetically high and low perceptions to primary and secondary process thinking. They speculate that what might constitute the difference between process and reactive schizophrenia may be that of a particular kind of thinking disorder. Benjamin (1944) however, speculated that, since some schizophrenics reveal disturbances in thinking and some do not, that the difference between schizophrenics was a quantitative one rather than a qualitative difference. Thus, Benjamin conceives the differences to be similar in kind, but not in degree, while Fine and Zimet think of the differences as being different in kind. It would seem both more parsimonious and more well founded both clinically and theoretically, to hypothesize along the lines Benjamin has directed. Nonetheless, the analogy that Fine and Zimet make between genetically early and late to primary and secondary process modes of thought are important and enables us to bridge the gap between genetic and psychoanalytic theory.

Primary and Secondary Process as Reflected in the Rorschach

The constructs of primary and secondary process thinking have been, as far as is known to this writer, applied to an understanding of the schizophrenic disorder only along theoretical, speculative lines. To date, there has been no systematic attempt to tie these constructs down by means of experimental investigation. Yet, as was seen in the previous chapter, these constructs are, according to psychoanalytic theory, of basic importance in conceptualizing the psychotic process.

Some mention has been made (Rapaport, Gill, and Schafer, 1946) of attempts to categorize deviant Rorschach responses. Although these systems are gross, they allow certain inferences to be made concerning the thinking processes, and particularly the manifestations of the primary process. However, there has not been any attempt made to empirically relate these deviant classes of responses to primary process thinking.

In terms of differentiating schizophrenics from normals by means of the Rorschach, most of the research has generally been inconclusive. However, it is possible to infer from some Rorschach findings that primary process thinking is more characteristic of schizophrenics than normals. Some studies mentioned previously (Watkins and Stauffacher, 1952; Rieman, 1953) have been able to differentiate between schizophrenics and normals on certain test patterns. The best discriminators among Rorschach signs have tended to be those of Form Level and pathological verbalizations. There has been some success in using the "affective ratio" to separate a schizophrenic from a normal group (Taulbee, 1955).

In an attempt to "operationalize" the psychoanalytic concepts of primary and secondary process thinking, Holt (1956, 1960) has devised a highly elaborate system for scoring the Rorschach. This system will be dealt with more specifically in Chapter IV. Several studies

(Goldberger and Holt, 1958; Pine and Holt, 1959, and Cohen, 1960) have indicated its reliability and construct validity as well as its potential usefulness as a research tool.

The Rorschach test provides an excellent means by which to view thought and perceptual processes. The availability of a means for minutely analyzing these processes affords us the opportunity to test the psychoanalytic constructs of primary process thinking as it pertains to schizophrenia.

CHAPTER III

STATEMENT OF HYPOTHESES

Following the theoretical reasoning of Freud and Hartmann, it is assumed that, given the relatively weak ego of the schizophrenic, the ability to neutralize instinctual energy is impaired. The degree to which this libidinal energy is neutralized coincides, according to Hartmann (1953), with the degree to which the primary process has been replaced by the secondary process. It follows then, that in disorders where the ego is weakened, e.g., schizophrenia, the ability to neutralize instinctual energy will be impaired. The greater the impairment of neutralization, the greater the reliance on the primary process. Given, according to Bellak (1958), that thought disturbances are the most sensitive indicators of ego disturbances, and that the characteristics of schizophrenic thinking are identical with the characteristics of the primary process, the following hypothesis can be made:

> Hypothesis I. Schizophrenics will reveal a higher mean number of primary process responses to the Rorschach (to be defined in Chapter IV) than normals.

The above hypothesis refers to only one measure of primary process, total number of primary process responses. There are other means by which the primary process can be manifest in Rorschach responses. These would be: 1) the blatancy of the response, 2) the existence of content and formal thought deviations, and 3) departures from reality-oriented percepts as measured by form level. Although we will make no specific hypotheses regarding differences among the groups on these variables, they will be explored with the purpose of determining

the relationship among the groups and these indices of primary process manifestations.

A second hypothesis can be made regarding expected differences in levels of ego functioning between the two schizophrenic groups. The research mentioned in the previous chapter is suggestive that schizophrenics who have relatively good premorbid histories have achieved higher, more mature, levels of ego integration than patients with poor premorbid backgrounds. The second hypothesis can be stated as follows:

> Hypothesis II. Good premorbid schizophrenics will reveal a significantly lower mean number of primary process responses to the Rorschach than poor premorbid schizophrenics.

A third hypothesis can be made relative to the effectiveness of controls over primary process. The reasoning for this hypothesis is that the degree to which the ego is strong determines the ability to utilize and integrate the primary process for adaptive purposes, i.e., to enhance the secondary process. Hypothesis III can thus be stated:

> Hypothesis III. Normals will achieve a significantly higher mean Adaptive Regression Score (to be defined in Chapter IV) than schizophrenics.

It is presumed that poor premorbid schizophrenics differ from good premorbid schizophrenics in not having developed sufficient ego controls over the primary process. This expected difference in ability to effectively utilize the primary process can be stated as follows:

> Hypothesis IV. Good premorbid schizophrenics will achieve a significantly higher mean Adaptive Regression Score than poor premorbid schizophrenics.

CHAPTER IV

METHOD

Characteristics of the Samples

The present study used three samples: normals, and two schizophrenic groups (n = 40) consisting of "Good Premorbids" and "Poor Premorbids," dichotomized according to the scale devised by Phillips (1953, see Appendix B). The schizophrenic subjects, twenty in each group, were obtained from two sources. One of these was the Fort Custer Veterans' Administration Hospital, a neuropsychiatric hospital. The other source was the Ann Arbor Veterans' Administration Hospital, a general medical and surgical hospital with three psychiatric wards.

The normal sample (n = 20) was obtained from two sources. Fifteen subjects were obtained from the local United States Army Reserve Unit in Lansing, and five subjects came from the Veterans' Administration counseling service at Michigan State University. By necessity, all of the normal subjects were volunteers. Only white, male veterans were used in both groups, the limiting of subjects to white males being consistent with the sample on which the Phillips Scale was originally used. The criterion for being classed as a veteran was to have served a minimum of two years of active duty. The criterion for considering the control group as "normal" was that they never have been referred for or received any psychiatric care.

An attempt was made to match the three groups used in this study (Normals, Good, and Poor premorbid schizophrenics) on the variables of age, last school grade, and occupational level (Dictionary of Occupational Titles, 1949). Table 1 reports the means and standard deviations on these

variables for the three groups. Inspection of this table shows that, for the control variables of last school grade and occupational level, the means for the three groups are quite similar. On the factor of age, it was possible to match the Normal and Poor premorbid groups quite closely. However, the mean age for the Good premorbid group was higher than for the other two groups. The range in ages for the three groups was similar, the Normal group ranging from 25 to 41 years, the Good premorbid group ranged from 26 to 41, and the Poor premorbid group ranged in age from 23 to 42 years. It was felt that, although differences in means existed between the Normal and Poor premorbid group, and the Good Premorbid group, these differences were not sufficient to cause the results to deviate markedly due to this factor, particularly since the mean age for the two schizophrenic groups combined was not significantly different from the mean age for the Normal group.

The selection of subjects for the two schizophrenic groups varied somewhat depending upon the hospital from which they were obtained. At the Ann Arbor V. A. Hospital, a study was in progress using the Phillips Scale. All the clearly diagnosed schizophrenics who had already been rated as Good premorbid on the Phillips Scale, and whose age, last school grade and occupational level were within limits that the other groups could be expected to fit into, were used in the sample.

At the Fort Custer V. A. Hospital, records from several wards were screened for clearly diagnosed schizophrenics, who matched the sample from the Ann Arbor Hospital on the variables of age, last school grade and occupational level.

The two schizophrenic groups were obtained without regard for type of ward, open or closed. As it happened, the two groups came out with similar numbers of open and closed ward patients. The Good premorbid group had thirteen patients from open wards and seven from locked wards, while the Poor premorbid group had eleven patients from open wards and

Table 1. Comparison of the Groups on Age, Last School Grade, and Occupational Level

		Age	Grade	Occupational Level
Normal	$\bar{X}$	30.40	11.45	1.35
	SD	4.64	3.758	1.24
Good	$\bar{X}$	36.25	11.15	1.85
	SD	2.88	3.31	.745
Poor	$\bar{X}$	30.8	10.25	.85
	SD	5.278	1.65	.671
Total Schizophrenic	$\bar{X}$	33.525	10.70	1.35
	SD	10.30	1.7	1.01

nine from closed wards. However, this does not mean to imply that the wards, whether open or closed, can be considered comparable. The characteristics of the wards depended on the hospital from which the patients came. This is due to the nature of the two hospitals. The Ann Arbor Hospital is a general-medical installation with three psychiatric wards, an open, intermediate, and closed ward. They tend to select patients with relatively good prognoses, and their quota of patients is limited. This is further emphasized by the fact that more than two-thirds of the schizophrenic patients were rated as Good premorbids on the basis of the Phillips Scale as part of a study carried out at the Ann Arbor hospital. The Fort Custer installation, on the other hand, is a neuro-psychiatric hospital, primarily custodial in nature. The types of wards

from which subjects were obtained in this hospital could be described as intermediary open wards, where patients are housed with ground privileges, an "acute ward" for the more labile, overtly disturbed patients, and a "chronic ward" for the more withdrawn, regressed patients. The latter two were closed wards.

The two schizophrenic groups differed considerably in terms of length of hospitalization. The Poor premorbid group had a median time of 8 years in the hospital, while the Good premorbid group's median length of hospitalization was 2 months, 13 days. This degree of difference might be expected given the dichotomization of the groups according to their premorbid histories.

No data were obtained relative to the traditional diagnostic subcategories represented in the schizophrenic samples. Although studies have indicated that the problem of reliably establishing a diagnosis of "schizophrenia" is not serious, it is difficult to arrive at a reliable diagnoses of the schizophrenic subclassifications (Ash, 1949; Mehlman, 1952). The schizophrenic subjects used for this study were selected only when there was sufficient evidence that the diagnosis of schizophrenia was reliably made. Further, evidence exists that there is little relationship between the patients premorbid background and his diagnostic subclassification (Langfeldt, 1937; Schofield, 1954; Stalker, 1939; Wittman, 1948), and that it is not unusual for diagnoses to vary depending on the hospital making the diagnosis.

Methodology

Measuring Premorbid Adjustment

The original scale devised by Phillips (1953) was used to predict outcome of shock treatment. However, subsequent studies (Rodnick and Garmezy, 1957; Seidel, 1960; and Farina, 1960) have utilized this scale

with broader application and have found it to be a reliable discriminator between schizophrenics with good and poor premorbid adjustment.

The scale in its entirety consists of three areas: 1) premorbid history (Area I), 2) possible precipitating factors (Area II), 3) signs of the disorder (Area III). Although all areas contributed to the scale's overall significance in the outcome study by Phillips, Area I was more highly correlated with outcome than were scores from either of the other two areas. As a result, the studies by Rodnick and Garmezy (1957), Seidel (1960) and Farina (1960) have only used Area I. This study will follow suit.

Area I of the Phillips scale concerns itself with relatively recent and historical indices of premorbid adjustment. It consists of five sub-sections to be described below (see Appendix B for the complete listing of all categories).

A. Recent Sexual Adjustment. This section concerns itself with the subjects recent sexual adjustment and heterosexual or homosexual experiences. Its major interest is in how close a relationship has been formed just prior to hospitalization.

B. Social Aspects of Sexual Life During Adolescence and Immediately Beyond. This area is interested in determining the subjects interest in relating to members of the opposite sex and with peers.

C and D. Social Aspects of Recent Sexual Life. Only one of these areas is rated depending on the age of the subject. If he is over thirty years old, section C is rated, if younger, section D is rated. Both sections are concerned with similar problems as are covered in section B, only for more recent experiences.

E. Personal Relations: History. This section is concerned with the subjects interest and ability to form close friendships.

F. Recent Premorbid Adjustment in Personal Relations. Essentially the same as Area E, only for the period just prior to hospitalization.

In general, it would be fair to say that in great measure, the scale is concerned with an individual's interpersonal relationships in terms of forming close and intimate contacts with people or remaining aloof, seclusive, and withdrawn.

The method of scoring the scale is as follows. For each of the five areas a rating of from 0 to 6 is assigned. Ratings at the lower end of the scale indicate good adjustment, while the higher ratings suggest poor adjustment. The possible extreme ratings would therefore be from "0" to "30" for the five subscales for any one subject. Rodnick and Garmezy (1957) reliably established cutoff scores for poor and good adjustment at the midpoint of the scale; scores of 16 or above for poor adjustment and 15 or below for good premorbid adjustment. These cutoff scores were also used by Seidel (1960) and Farina (1960), and will also be used for this research. Thus, this study considered those S's who received scores of 16 or above on the Phillips scale to have poor premorbid adjustment and those who obtained scores of 15 or below to have established good premorbid adjustment.

A recent study at Duke (Garmezy et al., 1960) has established the reliability for rating the Phillips scale by direct interview with the patient. Their correlation coefficients were felt to be sufficiently high to justify the use of the structured interview as a reliable means of gaining information about the patient's history, rather than using case history material from hospital records.

The schizophrenic subjects from Fort Custer were rated as to their premorbid adjustment, the ratings being established by interview according to the scale devised by Phillips (1953). The reliability of these ratings was established by having the interview rated by two independent raters, the author being one rater. The rank order reliability coefficient was .95, indicating that the ratings were made in a highly consistent manner by the two raters. Of the ten subjects rated, five received

identical ratings, and no rating differed by more than three points. There were no category reversals, that is, no subject rated as Poor premorbid by one rater was rated as Good premorbid by the other rater, or vice versa. These reliability results are consistent with those generally obtained by other workers using the Phillips Scale (Farina, 1960; Garmezy, 1960; Rodnick and Garmezy, 1957).

Measuring Primary Process

The Rorschach scoring procedure used in this study was devised by Holt (1960). This system has as its essential purpose the measurement of the incursion of primary process modes of thought in Rorschach responses, the determination of defenses employed against its incursion, and a rating of the subject's ability or lack of ability to utilize primary process manifestations for adaptive purposes.

A brief description of the Holt system will be given here. The reader is referred to his manual for a more detailed examination of the system (Holt, 1960), or to his chapter in Rickers-Ovsienkina's volume (1960a).

Form Level

Each response is first scored for form-level following the system outlined by Mayman (1959). Essentially, this system breaks down form perceptions into eight categories: F+ (well elaborated and integrated perceptions), Fo (popular or near popular forms), Fw+ (plausible but not convincing), Fw- (forms that bear only a slight resemblance to the blot), F- (arbitrary forms), Fv (vague forms, e.g., clouds), Fa (amorphous responses, e.g., sky, night), Fs (spoiled form responses) (see Appendix E).

Primary Process

Not all responses are scorable for primary process. Primary process may become manifest in a response in two ways, either in the content of the response or in its formal qualities (see Appendix C).

There are twenty-five content categories which are divided up into ideational and affective drive derivatives. Under ideational drive representations are included libidinal (oral, anal, sexual, exhibitionistic-voyeuristic, and homosexual), aggressive, and "anxiety," which is a residual group presumed to be a reaction to instinctual threat. Each of these (ideational or affective) are further subdivided into Level 1 or Level 2, these referring to their position on the primary-secondary process continuum. This is established by the "primitive vs. civilized" dimension and refers to its appropriateness as a social communication in a professional setting. Thus, the socialized responses are scored Level 2; responses that are more "raw, direct, intense, or blatant," therefore closer to primary process, are scored Level 1.

Some examples of this are as follows:

Level 2 Oral: "Two people kissing"

Level 1 Oral: "A wide open mouth"

Level 2 Sexual: "Two people getting married"

Level 1 Sexual: "Reminds me of sexual intercourse"

(See appendix C for a full list of the content categories.)

The formal categories, of which there are thirty-four, attempt to measure deviations from logical, orderly thinking. The following are examples: autistic logic, fusion of percepts, internal-external view, impossible combinations (see Appendix C for a complete listing of the formal categories).

Control and Defense (CD)

The third aspect of the scoring has to do with controls and defense. Without going into the 40 categories under this heading, these are designed to determine, for those responses scorable for primary process, the nature of the controls or their absence. Some examples of the categories of Control and Defense are, 1) Remoteness of the percept, 2) the Context of the response (Cultural, Esthetic, etc.), 3) Sequence (whether the response follows or is preceded by a scorable primary process response). Appendix D gives the complete list of CD categories.

Over-all Scores From the System

There are four over-all scores derivable from this system: defense demand, defensive contribution, total adaptive regression score, and number of primary process responses.

1. Defense Demand (DD). Based on the "primitive vs. civilized" dimension, the manual sets the demand for each category scored, the DD ranging from 1-6. The higher the DD, the more blatant and extreme the response.

2. Defensive Contribution (DC). On the assumption that certain defensive operations are more effective in controlling drive representations than others, Holt has assigned numerical weights to each Control and Defense category. For example, a response with a human percept has a Defensive Contribution (DC) of 0, while animals have a DC of +1, plants +1.5, and inanimate objects have a DC of +2.0. Each response will have one or more Control and Defense (CD) categories appropriate, and each CD will have an assigned Defensive Contribution. The DC score is the algebraic sum of each weight assigned to the Control and Defense aspects of the response.

3. Total Adaptive Regression Score (ARS). The ARS for each response is the product of the total Defense Demand (DD) for each response, plus the Defensive Contribution (DC) assigned to that response, plus the Form Level rating (FL). Thus, $ARS = DD \times (DC_1 + DC_2 + \ldots DC_n + FL)$, and the total ARS is the sum of the right hand portion of the formula for all scorable primary process responses. High positive ARS scores are indicative of adaptive regression, and constitutes its operational definition, while high negative ARS scores are suggestive of maladaptive regression.

4. Primary Process Responses. All responses to which there can be assigned either a content or formal category, or both, will be defined as a response containing primary process elements.

Two hypotheses of this study are concerned with an over-all measure of primary process responses, which are expressed as the total number of scorable primary process responses. However, we will also be concerned with other indices of primary process manifestations such as the number of content and formal deviations, and the blatancy of primary process responses.

Two reliability measures were obtained, one pertaining to the reliability of scoring the Rorschach protocols according to the Holt method, the other concerning reliability of the adaptive regression score. The total ARS score was used to obtain information regarding the reliability of scoring the protocols. Ten records were randomly selected for scoring by an independent scorer, and the rank order reliability coefficient between the author and the independent scorer for ARS was .944. This suggests that the protocols were scored in a highly consistent manner. This degree of reliability is similar to that found in a study by Cohen (1960), and is further corroborating evidence that the Holt system can be reliably scored. Indirectly, the number of primary process responses can also be considered to be reliably scored, since an adaptive regression score can only be assigned to a scorable primary process response.

In the determination of the reliability of the ARS score itself, we were confronted with the general problem of the reliability of Rorschach scores. There are many difficulties inherent in the determination of the reliability of these scores, and there are flaws in any method (Klopfer, et al., 1954, pp. 441-461; Holzberg, 1960). However, it would seem that the split-half method, using odd-even cards, presents the least margin for error in establishing the reliability of Rorschach scores, and this method was used to determine the reliability of the ARS score. The product-moment correlation coefficient between the ARS score from odd numbered cards and those from even numbered cards is .648, which is significant beyond the .01 level. We may thus assume that the ARS score is a reliable measure.

Procedure

The procedure essentially consisted of individually administering the Rorschach test to each subject. Since at the Ann Arbor V. A. hospital the subjects had already been rated as to their premorbid status, a brief interview of a "rapport" building nature, and the gathering of some general information such as age, last school grade, occupation, marital status, and previous hospitalizations, preceded the administering of the Rorschach (see Appendix A for the General Information Sheet).

At the Fort Custer V. A. hospital, possible subjects were screened via their case histories, and each potential subject was interviewed so as to be able to rate the Phillips scale. For the first ten interviews, a graduate intern in clinical psychology sat in on the sessions so as to be able to establish the reliability of ratings. Following this, the author rated all other potential subjects himself until a total of twenty subjects rated as Poor Premorbid were obtained. Once a subject had satisfied the criterion of being rated as Poor Premorbid, and was matched on the

three control variables, he was then given a Rorschach. All Rorschachs were given according to the instructions for administration as outlined by Klopfer, et al. (1954). After each subject had been rated and tested, a code number was assigned to him by a person other than the author, and this code number was the only means of identifying any Rorschach protocol.

Treatment of Data

This section will describe the method of analyzing the data so that the reader can get a clear idea of the procedures followed and their rationale. The procedures to be described below apply to both the testing of the hypotheses as well as further explorations of the data.

For each variable analyzed, the means of the three groups (Normal, Good, and Poor) were tested by analysis of variance. If the F-test among these means was not significant, no further analysis of that variable was undertaken. However, if the analysis of variance showed differences among the groups, pairs of means were tested to determine where these differences lie. Since there are a number of possible comparisons of means via t-tests, the risk that some might turn out to be significant at the .05 level by chance alone is greater than .05. Therefore, the procedure using the "studentized range" distribution was used (Dixon and Massey, 1957). This procedure allows all possible comparisons, with a .05 risk of any of them being statistically significant if no true differences exist. For three groups of 20 sugjects each, the t-ratio required for significance at the .05 level using the studentized range distribution is 2.43, while for the standard t-test a value of 2.025 is required. Although this procedure assumes homogeneity of variance, and it was found that for some of the variables explored the variances were not homogeneous, it was felt that since there were no extreme departures from homogeneity

the added risk of bias was not sufficient to cause the results to be seriously in error. However, where the variances are heterogeneous a more conservative interpretation of significance levels is required.

CHAPTER V

RESULTS

Analysis of Results

Before testing the hypotheses it was necessary to determine whether the groups differed on the total number of responses to the Rorschach (R). The non-significant F-ratio gives no indication of differences in total responses (see Table 2). It can thus be assumed that any differences between the groups cannot be attributed to the factor of responsivity.

Table 2. Comparison of the Groups on Total Number of Rorschach Responses (R)

Group	Mean	SD	F	
Normal	23.9	9.136		
*Good	28.6	11.887	1.116	N.S.
Poor	28.15	11.604		

*"Good" and "poor" refer to good and poor premorbid schizophrenics.

Primary Process Responses

Hypothesis I stated that the Total schizophrenic group would reveal a significantly higher mean number of primary process responses to the Rorschach than the Normal group. The non-significant F-ratio gives no indication that the groups differ (see Table 3). Although the schizophrenic groups had higher means than the Normals, the failure to find statistically

significant results gives no support to the hypothesis as stated. As a result of this analysis Hypothesis II also is not supported; Good premorbid schizophrenics would have fewer primary process responses than Poor premorbids. In fact, the Good premorbid group had a slightly higher mean number of primary process responses than the Poor premorbid group (see also Table 3).

Table 3. Comparison of the Groups on Number of Primary Process Responses

Group	Mean	SD	F
Normal	11.95	4.879	
Good	16.4	9.417	1.866 N.S.
Poor	14.8	7.128	

Since the over-all number of primary process responses did not discriminate among the groups, other indices of primary process manifestations were explored.

Level 1 Primary Process Responses

For each scorable primary process response the system provides for its position on the primary-secondary process continuum by assigning either a Level 1 or a Level 2 weight. A Level 1 weight indicates that the response is closer to the primary process pole, while a Level 2 weight places the response closer to the secondary process pole. As will be recalled (see Chapter IV), the determination of the place along the primary-secondary process continuum for each response is dependent on how blatant, raw, or intense the response. By taking an over-all measure of the total number of Level 1 responses for each group it is possible to

determine whether or not the groups differ on the variable of "blatancy." The total number of Level 1 responses was obtained by counting all primary process responses containing a Level 1 weight, regardless of whether or not the response had a content or a formal deviation associated with it. The occurrence of at least one score with a Level 1 weight was counted as one Level 1 response. The F-ratio was found to be significant at the .01 level, revealing that the groups differ with respect to number of Level 1 primary process responses (see Table 4). The comparisons of the groups indicate that the Normal group differs significantly from the Total schizophrenic group in the expected direction, Normal having fewer Level 1 responses than the two schizophrenic groups combined. Although there were no statistically significant differences between the Normal and the Good Premorbid groups, the data are highly suggestive of differences, the means for the two groups differing in the expected direction. There are clear differences between the Normal and the Poor Premorbid groups, also in the expected direction. In general then, Normals in this sample had significantly fewer Level 1 responses than the Total schizophrenic group and the Poor Premorbid group, with strong indications that the Normals might differ from the Good Premorbid schizophrenics given a larger sampling of the population. Thus, in relation to Hypotheses I and II, on the variable of the intensity of primary process expression, the results indicate that schizophrenics manifest primary process more blatantly than Normals, although they do not differ on absolute numbers of primary process responses.

Content Deviations

As described earlier (see Chapter IV), Holt has divided primary process responses into two categories, Content Deviations and Formal Deviations. To be scorable as a primary process response, a response must contain either a content deviation and/or a formal deviation. The question can be raised as to whether or not the three groups differ on number of content or formal deviations. The purpose of these analyses

Table 4. Comparison of the Groups on Total Level 1 Primary Process Responses

	Groups			
	Normal	Good	Poor	Total
Mean	1.8	4.3	5.8	5.05
SD	1.824	4.0	3.887	5.684
F	7.11**			

Comparison	t
Normal vs Total	3.03*
Normal vs Good	2.336
Normal vs Poor	3.74*
Good vs Poor	1.40

*Significant at the .05 level

**Significant at the .01 level

was to determine, by an over-all measure, if the manner in which the primary process is expressed is different for the three groups.

To get an over-all measure of the number of content deviations, all responses containing at least one content deviation, regardless of whether or not is was also associated with a formal deviation, were tabulated. Any response containing at least one content deviation was counted as one such deviation. All such deviations were counted regardless of whether they were Level 1 or Level 2 on the primary-secondary continuum. The results are reported in Table 5. The analysis, plus inspection of the means for the three groups, offers no evidence that the groups are different with regard to over-all numbers of content deviations.

Table 5. Comparison of the Groups on Total Number of Content Deviations (CD)

Group	CD Mean	CD SD	F
Normal	10.25	4.216	.565 N.S.
Good	11.4	6.668	
Poor	9.65	4.671	

Formal Deviations

Following the same procedure as with the content deviations, the over-all number of formal deviations was also obtained. The F-ratio which was significant at the .01 level (see Table 6), indicated real differences between the groups on this factor. The comparisons of group means is also reported in Table 6. They give significant evidence that the Normal group differs from each of the schizophrenic subgroups on number of formal deviations in the expected direction, but no significant differences between the two schizophrenic groups on this variable were found. Thus, the Normal sample gave fewer numbers of formal deviations, while the two schizophrenic groups, regardless of premorbid status, gave no evidence of differing on this factor.

Level 1 Content and Formal Deviations

Further analyses of Level 1 responses were made to see if there were any differences in Level 1 content or Level 1 formal deviations between the groups, to determine if there are differences in the manner in which these more blatant primary process responses are expressed. The occurrence of at least one Level 1 content deviation, even though it

Table 6. Comparison of the Groups on Total Number of Formal Deviations (FD)

	Groups			
	Normal	Good	Poor	Total
Mean	3.85	8.85	8.6	8.725
SD	2.96†	7.24	9.232	9.234
F	5.066**			

Comparison	t
Normal vs Total	2.75*
Normal vs Good	2.82*
Normal vs Poor	2.68*
Good vs Poor	.141

†Variances are heterogeneous
*Significant at .05 level
**Significant at .01 level

might be associated with a formal deviation, was counted as one Level 1 content deviation for that response. The same procedure was used for obtaining a measure of Level 1 formal deviations, each occurrence being summed to give a total sum of Level 1 content or formal deviations.

The F-ratios for both the Level 1 content deviations and formal deviations were significant at the .01 level, indicating real differences between the groups (see Table 7 and 8). Comparisons of the group means on these variables indicated significant differences between the Normal and Total schizophrenic groups, and the Normal and Poor Premorbid groups, both in the expected direction. There was no suggestion of any differences between the two schizophrenic subgroups, pointing to a lack of relationship between blatant content and formal deviations, and premorbid status. Despite there being no statistically significant differences

Table 7. Comparison of the Groups on Level 1 Content Deviations

	Groups			
	Normal	Good	Poor	Total
Mean	.4	1.25	2.4	1.825
SD	.598†	1.618	2.521	3.11
F	6.479**			

Comparison	t
Normal vs Total	2.54*
Normal vs Good	1.52
Normal vs Poor	3.58*
Good vs Poor	2.06

†Variances are heterogeneous
*Significant at the .05 level
**Significant at the .01 level

Table 8. Comparison of the Groups on Level 1 Formal Deviations

	Groups			
	Normal	Good	Poor	Total
Mean	1.5	3.65	5.1	4.375
SD	1.468†	3.99	3.998	5.746
F	5.777**			

Comparison	t
Normal vs Total	2.69*
Normal vs Good	2.018
Normal vs Poor	3.38*
Good vs Poor	1.36

†Variances are heterogeneous
*Significant at the .05 level
**Significant at the .01 level

between the Normals and the Good Premorbid groups on these two variables, the data are highly suggestive that differences between these two groups would likely have been found with larger sample sizes. Thus, in general, the schizophrenics in this sample tend to give more blatant content and formal deviations than Normal subjects.

Adaptive Regression Score

The third hypothesis of this study stated that Normals would achieve a significantly higher mean adaptive regression score than the Total schizophrenic group. Table 9 reports the means, standard deviations, and F for the three groups. The significant F-ratio indicates that there are differences between the groups. Although the differences between the means for the Normal and Total schizophrenic groups were in the expected direction, the difference for these two groups was not statistically significant (see Table 9). Despite this lack of support for Hypothesis III, further comparisons between the groups reveal differences. The comparison between the Normal and the Poor premorbid groups on ARS indicates that the Normals have higher mean ARS scores than the Poor Premorbid group. The difference between the Normals and the Good premorbid group was not significant, and there is no evidence from inspection of the means for those two groups that differences exist. Concerning Hypothesis IV, although there were no statistically significant differences found between the Good and the Poor premorbid groups, the t value missed significance at the .05 level by a narrow margin, and observation of the means for these two groups is strongly suggestive that differences exist. Despite the fact that there were no statistically significant differences between the two schizophrenic groups, on adaptive regression scores, the nearly significant results raises the question of whether or not differences in length of hospitalization between the two groups may have contributed to these results. In other words, we cannot be certain that the results are

Table 9. Comparison of the Groups on Total Adaptive Regression Score (ARS)

	Groups			
	Normal	Good	Poor	Total
Mean	56.88	55.95	26.41	41.18
SD	37.87	46.63	27.13	56.67
F	3.973*			
Comparison	t			
Normal vs Total	1.277			
Normal vs Good	.075			
Normal vs Poor	2.479*			
Good vs Poor	2.403			

*Significant at .05 level

due to actual differences in ARS, or to prolonged hospitalization. To test this, an analysis of covariance on ARS, with length of hospitalization covaried out was made. The F-ratio of 10.56 was significant beyond the .01 level giving support to the contention that the differences between the two schizophrenic groups was a result of differences in ARS rather than length of hospitalization.

To summarize, Hypothesis III found partially supporting evidence from the over-all measure of ARS, and there is some suggestion that, perhaps with larger sample sizes the hypothesis might be fully supported. The means for Normals and Good premorbid schizophrenics in this sample were almost the same on ARS, but differences between the Normals and the Poor premorbid groups were statistically significant in the expected direction. There is a strong suggestion that, with further testing on larger samples, differences would be found between the Good and Poor premorbid groups on ARS, giving support to Hypothesis IV.

Total Form Level

Since previous studies (Becker, 1955; Friedman, 1953; Hemmendinger, 1953; and Seigal, 1953) have shown that the ability to perceptually integrate responses to the Rorschach play a part in discriminating schizophrenics from other groups, an analysis of the total form level score was made. Form Level and ARS are related in that they both are measures of ego control. In this sense the analysis of form level scores will have a bearing on Hypotheses III and IV. The total form level score was obtained by taking the form level on all responses, regardless of whether or not they had any primary process elements. The non-significant F-ratio gives no evidence that there are any differences between the groups on this factor, although there are differences between the means in the expected direction (see Table 10).

Table 10. Comparison of the Groups on Total Form Level Score (T F-L)

Group	T F-L Mean	T F-L SD	F
Normal	15.0	12.63	.585 N.S.
Good	11.55	15.316	
Poor	9.8	17.978	

Primary Process Form Level

Since no differences were evident for total form level, the question is raised as to whether or not form level scores are different for the three groups on only those responses scorable for primary process. The F-ratio comparing the three groups on primary process form level was significant beyond the .01 level of significance, giving clear evidence of

differences among the three groups (see Table 11). The comparisons between the groups, also reported in Table 11, showed that the Normal and Good premorbid groups, although not differing significantly between each other, both differed significantly from the Poor premorbid group. Thus, while the Normals and the Good premorbid schizophrenics in this sample were about the same on their level of perceptual differentiation on primary process responses, the Poor premorbid group had a significantly lower level of perceptual differentiation than either the Normal or Good premorbid groups. Since form level also measures the degree of ego controls over primary process productions, these results are in support of Hypothesis IV.

Table 11. Comparison of the Groups on Primary Process Form Level Scores (PP F-L)

	Groups			
	Normal	Good	Poor	Total
Mean	5.9	5.6	.65	3.125
SD	3.267†	7.387	1.268	6.965
F	7.801**			

Comparison	t
Normal vs Total	1.858
Normal vs Good	.20
Normal vs Poor	3.516*
Good vs Poor	3.315*

†Variances are heterogeneous
*Significant at .05 level
**Significant at .01 level

Summary of Results

The two hypotheses concerning differences in number of primary process responses to the Rorschach between normals and the combined schizophrenic groups (Hypothesis I), and between the two schizophrenic groups (Hypothesis II), were not directly supported. There was no evidence that these hypotheses would be supported even with larger samples. We can say then, that this study gives no indication that the over-all number of primary process responses is related to level of ego integration.

With regards to Hypotheses III and IV, which were concerned with the adaptive use of the primary process by the three groups, we found no statistically supporting evidence for the ARS score. However, the data is strongly suggestive that with further testing on larger samples both these hypotheses would likely be supported. Thus, we can say that the data of this study revealed differences in the predicted direction on adaptive regression scores between the normal and combined schizophrenic group, and between the good and poor premorbid groups.

Further explorations of the data lead to the finding of differences between the groups on several important variables.

The data suggests that, in general, the schizophrenics in this sample give more over-all blatant responses, as measured along the primary-secondary process continuum, than the normal subjects. The manner in which these more blatant responses are expressed show no differences between the two schizophrenic groups, that is, they both tend to give more blatant content and formal deviations than normal subjects, but do not themselves differ on these variables.

In terms of the over-all manner in which the primary process is expressed, via content or formal deviations, the data gave no evidence of differences on total number of content deviations for the three groups.

However, there were clear differences in the number of formal deviations, the normals having significantly fewer than the schizophrenic subjects. There was no relationship on this factor to premorbid status, as there was no evidence of any differences between the two schizophrenic groups. Thus, the schizophrenics in this sample gave, regardless of premorbid status, greater numbers of formal thought deviations than normals.

In terms of level of perceptual differentiation, as measured by the form level score, though there were no differences between the three groups on total form level score, significant differences became apparent when only the form level for primary process responses were measured. In this instance, there was clear evidence of a relationship between premorbid status and degree of perceptual differentiation, the normal and the good premorbid groups having significantly higher primary process form level scores than the poor premorbid group.

For the convenience of the reader, the results of this study are summarized in Tables 12 and 13.

Table 12. Summary of Results (Significance Tests)

	P-P	Level 1 P-P	CD	Level 1 CD	FD	Level 1 FD	ARS	TFL	P-P FL
F	1.866	7.11**	.56	6.479**	5.066**	5.777**	3.97*	.585	7.8**
t-tests									
Normal vs Total		3.03*		2.54*	2.75*	2.69*	1.277		1.86
Normal vs Good		2.336		1.52	2.75*	2.02	.075		.20
Normal vs Poor		3.74*		3.58*	2.68*	3.38*	2.479*		3.52*
Good vs Poor		1.4		2.06	.14	1.36	2.403		3.73*

P-P = Primary Process Responses
CD = Content Deviations
FD = Formal Deviations
ARS = Adaptive Regression Score
TFL = Total Form Level
P-P FL = Primary Process Form Level

*Significant at .05 level
**Significant at .01 level

Table 13. Summary of Results (Means and Standard Deviations)

		P-P	Level 1 P-P	CD	Level 1 CD	FD	Level 1 FD	ARS	TFL	P-P FL
Normal	M	11.95	1.8	10.25	.4	3.85	1.5	56.88	15.0	5.9
	SD	4.88	1.824	4.216	.598	2.96	1.47	37.87	12.63	3.269
Good	M	16.4	4.3	11.4	1.25	8.85	3.65	55.95	11.55	5.6
	SD	9.42	4.0	6.668	1.62	7.24	3.99	46.63	15.32	7.387
Poor	M	14.8	5.8	9.65	2.4	8.6	5.1	26.41	9.8	.65
	SD	7.13	3.887	4.67	2.52	9.23	3.998	27.14	17.978	1.27
Total	M	15.6	5.05	10.52	1.83	8.73	4.375	41.18	10.675	3.125
	SD	11.866	5.68	17.0	3.11	9.23	5.746	56.668	5.75	6.965

CD = Content Deviations
FD = Formal Deviations
P-P = Primary Process Responses
TFL = Total Form Level
P-P FL = Primary Process Form Level

CHAPTER VI

DISCUSSION

The purpose of this study was twofold. On the one hand, we were concerned with the psychoanalytic constructs of primary process and adaptive regression, as they relate to schizophrenic ideation and thought. Secondly, we were interested in the measurement of these constructs via the Holt method for the gauging of primary process responses on the Rorschach. The ensuing discussion of the results will therefore pertain to both the theory and the method underlying this study. We shall also attempt to point to follow-up research along these lines.

The four hypotheses of this study are based on psychoanalytic theorizing concerning levels of ego functioning. Two of the hypotheses relate to previous research findings of differences between schizophrenics as a function of premorbid adjustment and, therefore, of levels of ego integration. It was presumed that, given lower levels of ego integration, as in schizophrenia, there would be a greater reliance on more primitive, i.e., genetically earlier, mechanisms, particularly the mechanisms of the primary process. It was thus hypothesized that there would be greater "amounts" of primary process manifestations on the Rorschach in schizophrenics than normals (Hypothesis I). Since we can assume differences in ego status between schizophrenics based on their premorbid adjustment, we hypothesized that there would be differences in amounts of primary process expression related to degree of ego maturity. We therefore predicted that good premorbid schizophrenics would reveal fewer primary process responses on the Rorschach than poor premorbid schizophrenics (Hypothesis II). The data of this study offers no support

to either of these hypotheses. However, subsequent support may be found below.

Level 1 Primary Process Responses

Since there was no evidence of differences among the groups on number, i.e., degree, of primary process incursions, we investigated the possibility that the primary process would be revealed in the manner in which it is expressed. Thus, the primary process may be revealed by its intensity, deviations in thought and/or drive-dominated content. The "manner" refers to the more qualitative aspects of primary process expression.

In the recognition that in every response process containing a scorable primary process element there are always aspects of ego functioning, and, therefore, secondary process elements, Holt has included the factor of the blatancy of the response. How blatant a response is depends upon its acceptability as a social communication in a professional setting, both in terms of content, i.e., how directly the impulse is expressed, and formal qualities, i.e., the extent and degree the response deviates from logical considerations. It is assumed that the more direct and blatant the response the closer it is to the primary process. Thus, a Level 2 response is closer to the secondary process, and assumes greater ego control and flexibility over drive-laden material. A response that is closer to the primary process end of the continuum may come about in two ways, following the theorizing of Hartmann (1953). It may be as a result of weak counter-cathexes, or the relative inability of the ego to have neutralized the drive. Both are interrelated in that the weakness of the ego defense results in its inability to neutralize the impulse, and the ego's ineffective neutralization of the drive may result in its inability to form strong counter-cathexes. (Hartmann has posited a possible somatic deficiency in the ego's inability to neutralize impulses in schizophrenia.)

In our over-all measure of Level 1 responses we have found that, in general, the schizophrenic groups, regardless of premorbid background, give more blatant responses to the Rorschach than do normals. Thus, the schizophrenics tested gave greater numbers of responses to the Rorschach which can be said to be closer to the primary process end of the continuum than normals. We can say then, that our samples of schizophrenics have shown that their ability to neutralize drives is impaired, resulting in their more blatant expression.

Content Deviations

Before embarking on the task of interpreting the results of this section, it will be necessary to elucidate the meaning of a content deviation. A response containing a scorable content element is one in which there is an observable impulse derivative. That is, any such response is assumed to be either a sexualized or aggressivized response, or both. In this sense, it is a relatively direct expression of the underlying drive, and can be so labeled (Oral, Anal, Sexual, Aggressive, etc.). It is from this sexualization or aggressivization of a response that we can, in part, infer the operation of the primary process.

The finding that the groups did not differ on number of over-all content deviations would seem to carry the following meaning. On the surface, it implies that the expression of libidinal drives on the Rorschach is independent of the status of the ego. The groups seem to express drives directly, via content deviations, in the same manner. However, it must be kept in mind that this was a measure of total number of content deviations without regard for their position on the primary-secondary process continuum. To get a fuller answer to the meaning of this finding it is necessary to explore the variable of blatancy, which refers to the position of the response along the primary-secondary continuum.

Although there were no differences among the groups on over-all numbers of content deviations, the results indicate that both schizophrenic groups, particularly the poor premorbid group, tended to give more blatant content deviations than the normals. Thus, the schizophrenics in this sample, in giving a response scorable for primary process, will more likely have given a raw, intense, or blatant expression of an impulse. It is now possible to more accurately interpret the absence of differences on the over-all measure of content deviations. It does not seem tenable to state that the lack of any differences on the over-all measure is independent of the level of ego integration, as was previously mentioned. Rather, the reverse would now seem to be true. Although, when expressed in total numbers, both groups gave similar numbers of content deviations, it can be seen that the content deviations of the schizophrenic groups were closer to the primary process pole than those given by the normal subjects. There is, therefore, a distinct relationship between the status of the ego and the giving of content deviations, the healthier the ego, the more these content deviations will be expressed in responses closer to the secondary process pole.

Formal Deviations

The libidinization of a response via content deviations is only one way the primary process can manifest itself. We can also view the operations of the primary process by means of departures from logical, reality-oriented thinking. This latter means of inferring the work of the primary process by the Holt method is by the occurrence of formal thought deviations. A scanning of the scorable categories of formal deviations reveals that their mechanisms are similar, and closely related, to dream processes as Freud described them (Freud, 1938). In the sense that there is no categorizable drive associated with a formal deviation, these deviations may be thought of as relatively indirect

expressions of drives and/or an attempt at their concealment. Thus, the existence of a formal deviation is an instance of a noncommunicative response, both in the sense that it does not reveal the underlying drive, and that it calls for a relatively gross distortion of reality and the logic that reality assumes. With this in mind, we can proceed to interpret the obtained results.

The findings indicated that both schizophrenic groups, regardless of premorbid status, gave greater numbers of formal deviations than normals. Taking the meaning of a formal thought deviation as suggesting the presence of a drive, but the distortion inherent in the response as precluding its direct knowledge, it then becomes clear that both schizophrenic groups have given greater numbers of responses that were, by their nature, noncommunicative. In terms of these responses being similar to dream processes, it is also appropriate to speak about a regression to genetically earlier psychic mechanisms as a means of dealing with reality. Given that primary process thinking is a more primitive, or genetically earlier mechanism, and that the formal thought deviations as measured here are the observable referents to these earlier processes, then it follows that both schizophrenic groups have revealed a greater reliance on these more primitive modes than do normals.

The finding that both schizophrenic groups have also given a greater abundance of blatant formal thought deviations adds to the interpretive significance of this variable, and strengthens its meaning. Since the two schizophrenic subgroups did not differ significantly on number of blatant formal deviations this is of importance with regards to previous speculations on differences between schizophrenics relative to premorbid background. Our findings indicate that, regardless of premorbid status, this sample of schizophrenics rely more heavily on non-communicative, genetically earlier thought processes.

Summary of Findings on Primary Process

Since the first two hypotheses as stated in Chapter III received no support, investigation was made as to whether other means of gauging primary process manifestations on the Rorschach would discriminate between the three groups. The two hypotheses concerning primary process were tested by evaluating the over-all amount, or number of primary process responses. It is evident, from this study, that this over-all measure of primary process is too gross and, perhaps, irrelevant. The data are strongly suggestive that the manner in which the primary process is expressed is a more important factor than the absolute number of such responses. There were clear differences when the manner in which primary process material manifests itself was calculated. The schizophrenic groups, regardless of premorbid background, utilized more verbalizations that were indicative of the breakthrough of relatively blatant primary process material, either of a libidinized or illogical nature. Thus both pathological groups tested operated at a level closer to the primary process pole, while the normal subjects, not differing in the degree (amount) of impulse expression, functioned at a point closer to the secondary process pole.

It is with these results in mind that we can answer the question as to whether or not our data are in support of psychoanalytic theory regarding schizophrenia. The answer would have to be in the affirmative. The schizophrenic groups, regardless of premorbid status, revealed, in the manner in which they responded to the Rorschach, characteristics of ideation and thought that were closer to genetically earlier mechanisms, and a general inability of the ego to bind impulse expression, or to prevent its occurrence. Thus, we may speak of the manner in which the primary process is expressed in schizophrenia as a result of faulty repressions, or the ego's inability to maintain strong counter-cathexes over impulse breakthrough. The manner in which the normal subjects

have revealed the work of the primary process has been in the direction of a greater degree of ego autonomy, and a more socialized expression of drives, indicating that drives have been relatively neutralized. Therefore, our data indicate that schizophrenics do not differ in having regressed to the utilization of more primitive modes of representing reality, in the degree that their responses are non-communicative, nor, therefore, in the manner in which they deal with reality. In this respect, the data of this study are in support of psychoanalytic theorizing concerning schizophrenia.

Adaptive Regression

The assumption underlying the ARS score related to the degree to which ego controls are maintained over primary process material. The higher the ARS, the higher the level of ego functioning. Following theory, it was predicted that a group of people with known ego weakness would score lower than a comparable group with presumedly higher ego strength (Hypothesis III). This prediction received partial support, and the data supported the prediction that there is a relationship between this variable and premorbid status (Hypothesis IV). The finding that schizophrenics with good premorbid histories do not differ from normals, and that both these groups tend to differ from the sample of schizophrenics with poor premorbid backgrounds has some empirical precedent. Several studies (Kantor, et al., 1953; Becker, 1955, 1956; and Fine and Zimet, 1959) have, if not directly then by inference, shown the relationship between level of ego functioning and premorbid status. Since the ARS score is presumed to be a measure of the ego's ability to maintain realistic controls while under the sway of primary process material, the data of this study suggest that both the Normals and Good premorbid schizophrenics operate at similar levels of ego functioning, these levels being higher than the level of ego functioning displayed by

the poor premorbid group. These results appear to lend further weight to the findings of the investigators mentioned above, as they related these variables to the process-reactive continuum.

Form Level

As pointed out earlier (Rieman, 1953) form level has been used successfully to descriminate between normals and schizophrenics, and this Rorschach factor has long been held to be a reliable estimate of ego functioning (Schafer, 1954; Korchin, 1960). The degree to which good form quality can be maintained on the Rorschach is said to be an indication of the ego's ability, through the perceptual mode, to maintain reality contact. More specifically, a response to the Rorschach containing a primary process element can be considered to be, in large measure, a "good" response if the form level of that response is accurate. In this sense, form level is closely related, theoretically, to the concept of adaptive regression and its operational definition, the ARS score in Holt's system.

To be considered adaptive, the ego must maintain a degree of control over primary process incursions, and there are a variety of ways that the ego can achieve this control. One such way is by means of perceiving accurately. The results of this study indicate that there is a relationship between the ability to perceive accurately, as measured by the form level score, and premorbid adjustment. There were no differences between the groups on total form level score. This would be explained in terms of the lack of threat to responses without primary process elements. Where little threat exists, the ego can function smoothly. However, on responses scorable for primary process, there is a sharp relationship between ego status and accurate perceptions. The finding that normals and schizophrenics with good premorbid adjustment achieve higher levels of ego functioning as measured by form level

than poor premorbid schizophrenics, lends supporting weight to previous research using similar dichotomizations. This also gives support to the notion that schizophrenics can be classed according to their ego strength. However, it is necessary to restrict the use of the term "ego" in this instance, as we are only viewing one aspect of ego functioning, the perceptual, when referring to form level.

Summary and Integration of Findings

The results of this study seem to present what may appear to be a contradiction. On the one hand, we have shown that our samples of schizophrenics have less of an ability to maintain control over primary process incursions, and give more blatant expression of primary process material. The schizophrenic subjects tested tend to operate at a level closer to the primary process pole, and these relationships hold regardless of premorbid status. On the other hand, we have found that normals and good premorbid schizophrenics achieve higher levels of ego functioning, as measured by ARS score and form level, than poor premorbid subjects. In short, we have found that in one instance, the level of ego functioning was high for some schizophrenic subjects, while, for these same subjects, other responses indicated poor ego functioning.

Since the data indicated that, for ARS, the effects of length of hospitalization were minimal, this contradiction will have to be explained by other means. It will be proposed that ARS and form level, as opposed to other indices of primary process manifestations, measure different aspects of ego functioning. A previous study using the Holt system (Cohen, 1960) has found that form level is the major contributing factor to the ARS score. We can therefore speak of these factors together when discussing their relationship to ego functioning.

As Schafer (1954) has pointed out, the processes inherent in the giving of a Rorschach response involve differing "levels" of ego functioning,

and these levels are not mutually exclusive. That is, in one response process it is possible to view several facets of ego organization simultaneously. The relationship between ego functioning and the perceiving of accurate forms relates to a level different from that of the content and/or elaboration of that response. The former reflects the ego's ability to maintain reality contact and can therefore be taken as a measure of the strength of the ego. However, a response may contain a clear perception of the form of the object, but may also present a distorted idea or thought of that object. Or, as in the case of many complex percepts, the objects seen may be accurate, but their relationship to each other may be distorted. It is in this latter sense that the relationship between ego integration and primary process can be seen. In other words, what a person "sees," and how he elaborates his percept, what he does with impulse derivatives, and how he handles the relationship between his percept and reality, offers an excellent opportunity to view these differing facets of the ego in operation.

The findings of this study indicate that normal subjects and good premorbid schizophrenics function at similar levels of ego integration, and may therefore be said to have a similar degree of ego strength. In this respect, the findings of the present study are not at variance with previous research. However, both good and poor premorbid schizophrenic subjects differ from normals in the way that they deal with their percepts, schizophrenics relying more on primitive, regressive, noncommunicative modes of representing reality than normal subjects. Thus, in the psychological aspects of the Rorschach response process, the schizophrenics exhibit a similar phenomenology, but different from normals, even though some schizophrenics have achieved a good deal of ego strength. The findings then, are in direct support of psychoanalytic theory.

At this point a word is in order regarding the methodology of this research, the Holt system for the measurement of primary process in the Rorschach. We have found that this system can be reliably scored, and that the ARS score is reliable, even with a psychotic population. This alone lends heavy weight to its potential as a research tool. However, the major criterion of its efficacy as a research instrument lies in its ability to test theory. One of the major purposes of this study was to attempt to give some construct validity to the Holt system. If the results of this study are valid, then the scoring system devised by Holt is strengthened in its validity. In fact, the results of this study suggest that the scoring system may be more sensitive than anticipated. Although it would appear that the over-all measures of numbers of primary process responses, and, to some extent, the total ARS score are too gross and ill defined, the categories which reveal the manner in which primary process is expressed, the content and formal deviations, and the Level 1, Level 2 distinction, may be valuable for further clinical research.

Implications for Future Research

Research attempts utilizing this instrument for measuring primary process can follow several paths. A most urgent need for future work with this system would be in the area of clinical diagnosis. The separating of pathological groups according to the traditional methods of symptomatology are far from adequate. Perhaps a differentiation can be made in terms of ego functioning, particularly as it pertains to the handling of drives and the need for distortions of reality as can be seen via the operations of the primary process and the manner in which it is handled.

It would appear to this writer that the Holt system can be readily applied in the area of personality research. It would be enlightening to see if any relationships existed between personality types (character structure)

and the manner of utilizing the primary process. It might be predicted that, for example, compulsive characters would utilize the primary process to a lesser degree than hysterical personalities.

Another possible area for future work with this method is in the field of psychotherapy research. For example, it would be of importance to learn if there were any differences in the manner in which the primary process was dealt with by patients before and after psychotherapy, and whether or not successful and unsuccessful patients would be differentiated by this method. It might also prove fruitful to see if any relationships existed between the patient's and the therapist's mode of utilizing the primary process.

Lastly, but not of least importance, would be a replication of the present study with larger sample sizes and more finely discriminating hypotheses.

CHAPTER VII

SUMMARY

The present study was undertaken for the purpose of testing the psychoanalytic constructs of primary process and adaptive regression as they apply to schizophrenia. Measures of primary process and adaptive regression were provided by the Holt (1960) scoring system for responses to the Rorschach, and the results provided a test of these measures. Four hypotheses, based on psychoanalytic theory regarding ego functioning, were proposed.

The subjects of this study consisted of twenty normal, twenty good premorbid schizophrenics and twenty poor premorbid schizophrenics. The Rorschach test was individually administered to all subjects by the author, following the procedure outlined by Klopfer (Klopfer, et al, 1954). All subjects were reasonably matched on age, last grade of school, and occupational level.

The Rorschach scoring followed the manual provided by Holt (1960). This manual contains specific directions for evaluating the degree to which primary process is manifest in Rorschach responses and the extent of controls over primary process productions. To provide a measure of reliability for scoring the protocols, the author and another scorer independently scored 10 records, using the overall measure of adaptive regression for this correlation. The inter-scorer reliability was .944. Intra-subject reliability for the same measure was also demonstrated, using the split-half method. The split-half reliability coefficient was .648, significant beyond the .01 level.

A primary process response was defined as any response containing a scorable content and/or formal deviation. The operational measure of adaptive regression is given by the formula

$$ARS = DD \times (FL + DC_1 + DC_2 \ldots . DC_n)$$

where ARS is the adaptive regression score, DD is the defense demand for each response, FL is the form level, and DC is the defensive contribution for each response.

Measures of primary process were also obtained by calculating the number of content and formal deviations, and number of Level 1 responses, for the purpose of determining if the manner in which primary process was expressed was different for the three groups.

The data were analyzed by using analysis of variance first, to determine if differences existed. If differences were found, comparisons of group means were obtained with the t-ratio using the studentized range distribution. This procedure was followed to reduce the risk of error in making several comparisons between means.

Four hypotheses were tested. The first two were concerned with number of primary process responses. It was hypothesized that the schizophrenic groups would have significantly greater numbers of primary process responses than normals, and that the poor premorbid group would have more primary process responses than the good premorbid group. These hypotheses were not confirmed. It was found, however, that the manner in which the primary process is expressed differentiated the groups. The schizophrenic groups, regardless of premorbid status, were found to give responses which were closer to the primary process pole, as measured by content and formal deviations and the blatancy of responses. It was proposed that the primary process is revealed more clearly when expressed as the manner of responding, i.e., the more qualitative expressions of primary process, than by

absolute number of primary process responses. When interpreted in this way, the data were found to be in support of psychoanalytic theory.

Two hypotheses dealt with the factor of adaptive regression. It was predicted that normals would have a higher mean adaptive regression score (ARS) than schizophrenics, and that the good premorbid group would have higher ARS scores than the poor premorbid group. Although neither hypothesis received statistical substantiation, the data were strongly suggestive that these hypotheses would be confirmed with further testing on larger sample sizes. Further analysis of the data lead to the finding that normals and good premorbid schizophrenics achieved higher form level scores on primary process responses than the poor premorbid group. There were no differences among the groups on total form level score. These findings were interpreted to mean that normals and good premorbid schizophrenics have similar levels of ego strength, as measured by degree of perceptual accuracy, than poor premorbid schizophrenics. However, the two schizophrenic groups were judged to manifest primary process in similar ways in that they operated at levels closer to the primary process than did normal subjects.

It was concluded that the Holt method for the assessment of primary process on the Rorschach is a valid one. However, it was suggested that the over-all measures of number of primary process responses and, to some extent, the adaptive regression score, are too gross. The method was felt to be a potentially valid tool in both future research and clinical diagnosis, and suggestions for future research along these lines were made.

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APPENDICES

APPENDIX A

INFORMATION SHEET

Code:_____

Name:_____ Age:_____ Mos:_____ Year:_____

Last School Grade:_____

Occupation:_____

Job Description:_____

_____

Job Level (rate)

3. Managerial-professional
2. Skilled (D.O.T., 1, 4 and 5)
1. Semiskilled (D.O.T. 6 and 7)
0. Unskilled (D.O.T. 8 and 9)

Marital Status: Married:_____ Separated:_____ Divorced:_____

How long married:_____ Previous Marriages:_____ Children:__

Previous Hospitalizations:

Where?_____

How Long?_____

Previous Outpatient Treatment:_____

_____

Current Admission Date:_____

Date Tested:_____

Diagnosis:_____

Rating:_____

Remarks:_____

_____

_____

_____

APPENDIX B

Patient's Name_____ Date_____ Rater_____

Phillips Scale
Section 1 Premorbid History

A. Recent Sexual Adjustment

1-0 Stable marriage
2-1 Marriage but unable to establish home
3-2 Marriage broken by permanent separation
4-3(a) Marriage but with low sex drive
(b) Deep heterosexual relation, but unable to develop it into marriage
5-4(a) Casual but continued heterosexual "affairs"
(b) Homosexual contacts, with lack or failure in heterosex
6-5(a) Occasional casual homo- or heterosex
(b) Solitary masturbation, no attempt at homosex or heterosex experiences
7-6 No sexual interest in men or women

B. Social Aspects of Sexual Life During Adolescence and Immediately Beyond

1-0 Always healthy interest in girls, with steady girl during adolescence
2-1 Started dating regularly in adolescence
3-2 Always mixed closely with boys and girls
4-3 Consistent deep interest in male attachments, restricted or no interest in girls
5-4(a) Casual male attachments, with inadequate attempts at dating girls
(b) Casual contacts with boys and girls
6-5(a) Casual contacts, lack interest girls
(b) Occasional contacts with girls
7-6 No desire to be with boys and girls; never went out with girls

C. Social Aspects of Recent Sexual Life; 30 years of age and above

1-0 Married with children, living as family unit
2-1 Married and children but unable to establish or maintain a family home
3-2 Has been married and children but perm. septd.
4-3(a) Married but considerable marital discord
(b) Single, has had engagement or deep heterosex relationship but unable to develop into marriage

5-4 Single, with emotionally shallow "affairs"
6-5(a) Single, has dated a few girls but a generally discontinuous interest in girls
(b) Single, consistent deep interest in male attachments but no interest in women
7-6(a) Single, occasional male contacts, no interest in women
(b) Single, interested in neither men nor women

D. Social Aspects of Recent Sexual Life; below 30 years of age

1-0 Married, living as a family, with or without kids
2-1(a) Married, with or without kids, but unable to establish or maintain a family home
(b) Single, engaged or in a deep relationship which is presumably leading to marriage
3-2 Single, has had engagement or deep relationship but unable to develop into marriage
4-3 Single, consistent deep interest in male attachments with restricted or no interest in women
5-4 Single, casual male relationships with restricted or no interest in women
6-5 Single, has dated a few girls casually but generally discontinuous interest in women
7-6(a) Single, never interested in or associated with men or women
(b) Antisocial

E. Personal Relations: History

1-1 Always had a number of close friends
2-3 From adolescence on had a few close friends
3-3 From adolescence on had a few casual friends
4-4 From adolescence on stopped having friends
5-5(a) No intimate friends after childhood
(b) Casual but never any deep intimate friends
6-6 Never worried about boys or girls; no desire to be with boys and girls

F. Recent Premorbid Adjustment in Personal Relations

1-1 Habitually mixed with others (though not a leader)
2-3 Mixed with only a close friend or group of friends
3-4 No close friends; very few friends; had friends but never quite accepted by them
4-5 Quiet, aloof, seclusive, preferred to be by self
5-6 Antisocial

Total:
Disagreement:

APPENDIX C

Primary Process Categories Used for Scoring the Rorschach Protocols, and the Defense Demand (DD) Associated with Each

	Content	(DD*)
L. Libidinal		
L 1 O.	Oral 1	(2-4)
L 1 O.	Anal 1	(3, 4)
L 1 S.	Sexual 1	(4)
L 1 E-V.	Exhibitionistic-voyeuristic 1	(3)
L 1 H.	Homosexual 1	(4)
L 1 M.	Miscellaneous libidinal 1	(3, 4)
L 2 O.	Oral 2	(1-3)
L 2 A.	Anal 2	(1-3)
L 2 S.	Sexual 2	(1)
L 2 E-V.	Exhibitionistic-voyeuristic 2	(1-3)
L 2 H.	Homosexual 2	(1-3)
L 2 M.	Miscellaneous libidinal 2	(2, 3)
Ag. Aggressive		
Ag 1 P-S.	Potential--subject 1	(4, 5)
Ag 1 P-O.	Potential--object 1	(3, 4)
Ag 1 A-S.	Active--subject 1	(4, 5)
Ag 1 A-O.	Active--object 1	(4, 5)
Ag 1 R.	Results 1	(4, 5)
Ag 2 P-S.	Potential--subject 2	(2, 3)
Ag 2 P-O.	Potential--object 2	(1, 2)
Ag 2 A-S.	Active--subject 2	(2)
Ag 2 A-O.	Active--object 2	(2)
Ag 2 R.	Results 2	(1-3)
Aff 2.	Affective drive-derivatives 2	(3)

*DD = Defense Demand

Formal (DD)

C. Condensation

C f-p 1. Fusion of percepts . . . . . (4)

C i-e 1. Internal-external view . . . . . (4)

C p-f 1. Partial fusion . . . . . (3)

C u-p 1. Unrelinquished percepts . . . . . (2)

C-co 1. Composition 1 . . . . . (3, 4)

C-co 2. Composition 2 . . . . . (2)

C a-l 2. Arbitrary linkage of percepts . . . . . (2, 3)

C a-c i2. Arbitrary impossible combinations . . . . . (3)

C a-c u2. Arbitrary unlikely combinations . . . . . (2)

Arbitrary combinations of color and form . . . . . .

FC arb 1. FC arb . . . . . (3)

F$\not C$ 2. F$\bar{C}$ or F/C . . . . . (2)

Do 2. Fragmentation . . . . . (1)

Imp 2. Impressionistic response . . . . . (2, 3)

Trans 1. Fluid transformation of percept . . . . . (3)

C-sym 1. Color symbolism . . . . . (3)

C-sym 2. Color symbolism . . . . . (1)

S-sym 1. Spatial symbolism . . . . . (3)

I-sym 1. Concrete image symbolism . . . . . (3)

I-sym 2. Concrete image symbolism . . . . . (1)

Au Lg 1. Autistic Logic . . . . . (5)

DW 1. DW . . . . . (4)

Ctr A 1. Affective contradiction . . . . . (4)

Ctr L 1. Logical contradiction . . . . . (3, 4)

Ctr In. Inappropriate activity . . . . . (3, 4)

VS 2. Verbal slips . . . . . (2)

VP 2. Peculiar verbalizations . . . . . (3)

VQ 1. Queer verbalizations . . . . . (4)

VC 1. Verbal condensation . . . . . (4)

Formal (DD)

VI 1.	Verbal incoherence, confusion	(5)
Au El 1.	Autistic elaboration, Level 1	(5)
Au El 2.	Autistic elaboration, Level 2	(3)
S-R 1.	Self-reference	(2, 3)
F-Msc 1 or 2.	Miscellaneous formal aspects	(3, 4)
ML 1.	Loosening of memory	(4)
Ii.	Intrusion of irrelevancy	

APPENDIX D

Control and Defense Categories Used to Score the Rorschach Protocols, and the Defense Contribution (DC) Associated with Each

Sequence		(DC)*
Recovery, modifying percept		
S M 1-O.	Level 1 - unscorable	(+1.5)
S M 2-O.	Level 2 - unscorable	(+1)
S M 1-2.	Level 1 - Level 2	(+.5)
S M R+.	Rationalization of percept	(+2)
S M R-.	Rationalization of percept	(-2)
Recovery, changing percept		
S C 1-O.	Level 1 - unscorable	(+1)
S C 2-O.	Level 2 - unscorable	(+1)
S C 1-2.	Level 1 - Level 2	(+.5)
Regression, modifying percept		
S M O-1.	Unscorable - Level 1	(-1)
S M O-2.	Unscorable - Level 2	(-1)
S M 2-1.	Level 2 - Level 1	(-.5)
Regression, changing percept		
S C 2-1.	Level 2 - Level 1	(-.5)
Delay		
Inh.	Inhibition	(+1;+1.5)
Reflection on Response		
Isp+, -.	Introspection	(+2;-1)
Crt+, -.	Criticism of response	(+2;-2)

*DC = Defensive Contribution; X = No control

Remoteness		(DC)*
R-min.	Minimal remoteness	(0)
R-eth.	Ethically remote from S	(+.5)
R-an.	Animals	(+1)
R-pl.	Plants	(+1.5)
R-ia.	Inanimate	(+2)
R-dep.	Depictions	(+1)
R-geo.	Geographical remoteness	(+2)
R-tm.	Remoteness in time	(+2)
Remoteness in level of reality		
R-fic s+, -.	Specific fictional	(+2;-1)
R-fic n+, -.	Non-specific fictional	(+2;-1)
R-rel +, -.	Religious character or context	(+2;-1)
R-fan +, -1.	Explicit fantasy or dream	(+2;-1)
R-fig+.	Figures of speech	(+2)

Context of response		(DC)
Cx C+, -.	Cultural context	(+2;-1)
Cx E+, -.	Esthetic context	(+2;-1)
Cx I+, -.	Intellectual context.	(+2;-1)
Cx H+, -.	Humorous context	(+2;-1)

Pathological defenses		
Va-.	Vagueness of percept	(-3)
Prj-.	Projection of responsibility	(-3)
Neg+, -.	Negation and undoing	(+1; -2)
Eu-.	Euphemism	(-1)
Minz-.	Minimization	(-1)
Obs-.	Obsessional defense	(-1)
Den-.	Attempted denial	(-2)
Ev-.	Evasion	(-2)
Imp-.	Impotence	(-2)

APPENDIX E

Form Level Scores (FL) and Examples for Scoring From Holt (1960)

Form Level Score	Category	Explanation
+3	F+	Sharp, convincing forms, easily seen by E.
+2	Fo	Popular and near popular forms, Fixed list in manual (Mayman, 1959).
+1	Fw+	Reasonably plausible, but not terriby convincing forms; takes a little stretching to see.
-1	Fw-	Forms that bear only a slight resemblance to the blot area; not very plausible, or based on one point of resemblance.
-2	Fv	Vague, non-definitive forms--things that intrinsically do not have specific shapes. "Clouds"; "blood stain"; "piece of dough".
-3	Fa	Amorphous responses, in which form plays no role (and could not, by the nature of the concept). Usually pure C. "Sky"; "water"; "night" "spring"; (and other abstract concepts).
-3	Fs	Spoiled form responses, to be given where the subject gives what is basically a familiar and good response (which could have been scored Fo or F+) but introduces some specification that has the effect of markedly lowering the acceptability of the response as a whole.
-4	F-	Arbitrary forms, bearing very little or no resemblance to the blot.

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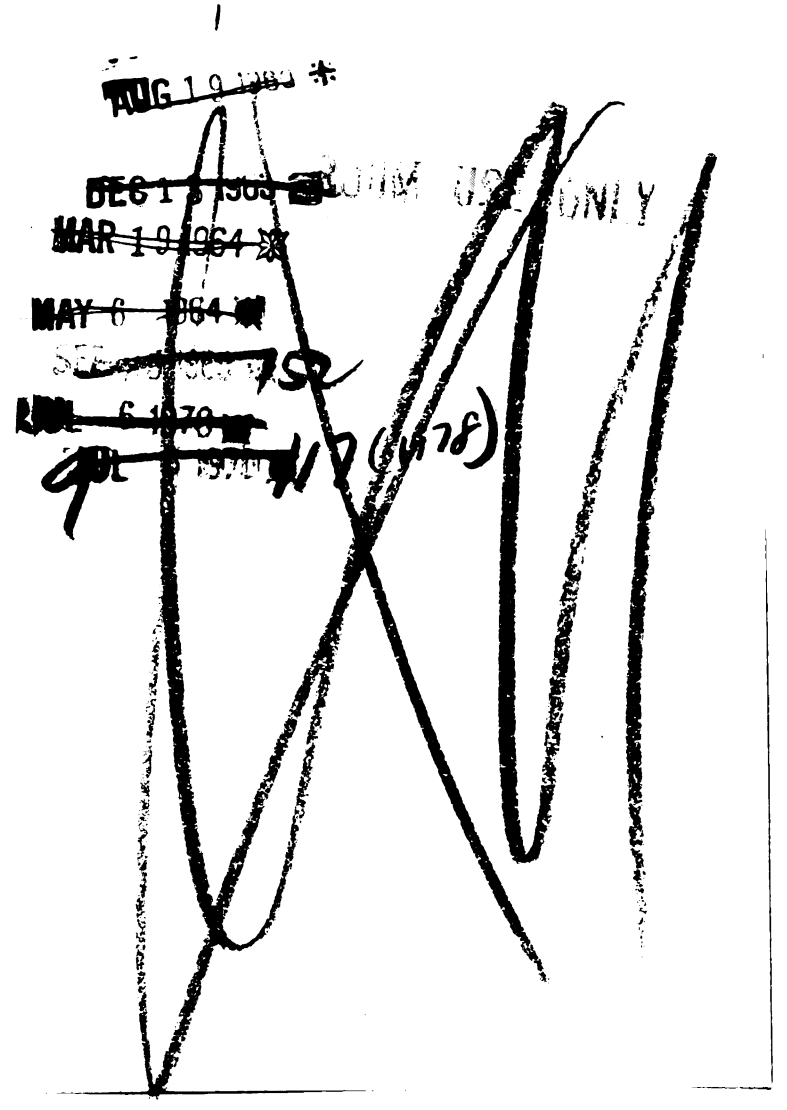

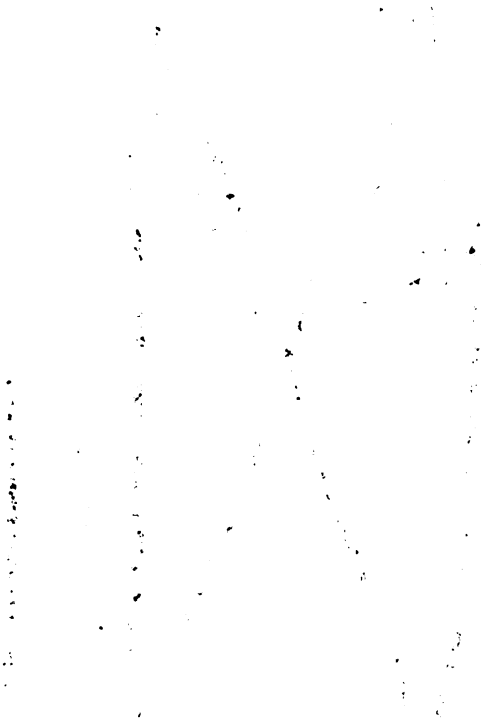


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