A COMPARATIVE RORSCHACH STUDY OF SOME RESPONSES OF SCHIZOPHRENIC AND NON-SCHIZOPHRENIC NGUNI FEMALE SUBJECTS

by

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SCHIZOPHRENIA

The most important concepts that will be dealt with in this study are Schizophrenia and the Rorschach. Clarity concerning these two concepts is thus essential to facili= tate the understanding of the development of this under= taking. This chapter will deal with Schizophrenia.

THE HISTORICAL BACKGROUND OF SCHIZOPHRENIA

A brief survey of the historical background of Schizophrenia will give an idea of the development of the systematization of knowledge on this condition.

According to Freedman and Kaplan (1974 p.593) evidence of the first primitive recognition of Schizophrenia surfaced as early as 1400 B.C. This was when a Hindu fragment from Ayur Veda described a condition brought on by devils in which the afflicted is

> "gluttinous, filthy, walks naked, has lost his memory and moves about in an uneasy manner"

Artaeus of Cappadocia added another dimension to insight into this pathology by differentiating between patients who suffered from the then traditional catch-all called mania and those patients he described in a fashion possibly equivalent to the modern terminology applied to Schizophrenia of stuporous, preoccupied and in poor contact with reality.

The earliest indication of the identification of paranoid Schizophrenia is traceable to Soranus in the Second Century A.D. who described delusions of grandeur in patients who be= lieved themselves to be "God" or who refused to urinate for fear of causing a new deluge.

Scrutiny into these three earliest signs of recognition of the Schizophrenic condition shows that in the beginning work= ers in this field recognized certain symptoms which indicated

the existence of a separate or different kind of patient from the ones they had dealt with. It is significant to note that these workers did not go further than stating their recognition of certain different features of dis= turbance.

The development from recognition of certain features to a deeper study of this condition was influenced by the emergence of changes in attitudes towards those patients who were considered to be "mentally ill" in the 18th century. These changes were effected as a result of the work of prominent physicians like Pinel (1745 - 1826) who believed in a reformation of attitudes and in the abolition of the then prevalent practice of treating patients as a group of people who were possessed by the devil and who ought to be locked up to save society from their "wild" and "arrogant" ideas and actions.

According to White (1965 p.13) with the advent of the change of attitudes suggested by Pinel, came the intro= duction of proper hospitalization, the psychiatric case history, and the systematic keeping of records. As a re= sult of all these a wealth of facts began to accumulate.

It was as a result of this systematization and accumulation of facts that the next stage and approach was made by work= ers like Esquirol and Morel.

Esquirol (1772 - 1840) described children who passed into obtuseness and hebetude during adolescence and gave the cause of this 'acquired idiocy' as masturbation, head in= jury etc. (Wolman 1965 p.976).

Morel in 1857 made his contribution by giving this condition a name - "demence precoce" which emphasized the arrest in mental development and degeneration that inevitably led to a state of dementia.

It is to be noted then that from the stage of just identifying symptoms Pinel's reforms set the stage for the development of another approach to the study of Schizophrenia. This was now preoccupation with symptoms and also causes. Apart from this stress was laid on the nature of the outcome of the condition as such which was identified as degeneration.

The third stage in the systematization of knowledge on Schizophrenia was marked by the work of Kraepelin (1856 - 1926). He introduced a new dimension to the study of this condition by stating that dementia praecox's varied manifestations all resulted from the same underlying physical disorder. His standpoint was that it originated either from a degenerative disease of the brain or in a metabolic disturbance causing autointoxication.

What was different in Kraepelin's viewpoint was his treatment of dementia praecox as consisting of a group of symptoms that occurred with sufficient regularity to be regarded as a specific type of mental disease in the same way as one would think of measles or small pox. It was as a result of the generation of this new parallel between dementia praecox and such physical conditions that Kraepelin has been identified as the man who played "a dominant role in the establishment of the organic viewpoint" according to Coleman and Broen (1972 p.45).

Kraepelin's synthesis of facts and ideas prevalent in his time resulted also in him distinguishing 3 types of Schizophrenia which were the hebephrenic, the paranoid, and the catatonic according to the predominance of certain symptoms over others. It was as a result of Bleuler's suggestion that he later on added the simple type. The fact that these categories are still used up to this day bears testimony to the truth in Arieti's (1969 p.9) declaration

> "His outstanding contributions have held a central position in psychiatric thought and practice from the time they were first introduced to the present day."

White (1964 p.20) however, identified the Achilles heel of Kraepelin's ideas by pointing out the onesidedness of his commitment to the somatogenic point of view. He gave little heed to those personal strivings and frustrations which have since been recognized as often important for the full comprehension of disordered conditions.

White (1964 p.20) explained Kraepelin's one sided approach

as probably the result of his field of observation being the hospitalized insane, where the somatogenic hypothesis was most likely to be appropriate. Apart from this however Kraepelin's work is understood better if one considers the time context in which it was generated especially in connection with the identification of the physical condition underlying general paresis.

Arieti (1969 p.9) on the other hand makes his criticism from another angle by identifying Kraepelin's descriptive approach as outdated today as it concentrates on classifi= cation and does not indicate psychotherapeutic strategies. Apart from that Arieti maintains it lacks psychodynamic sociocultural and formal possibilities.

Kraepelin's disease concept has been subjected to vehement criticism by T.S. Szasz and other members of the anti= psychiatric movement like Cooper and Laing.

Another step forward in the understanding of the etiology of schizophrenia was marked by the ideas of Adolf Meyer (1866 - 1950) who registered his disagreement with Morel's theory. He maintained that schizophrenia should be seen as largely dependent upon social psychological stresses that the individual meets in his life resulting in a withdrawal from the outside world into himself. He attributed schizophrenic reactions to maladaptive learning emphasizing the anatomic and chemical integrity of the sufferer while affirming that such functions as learning were not to be separated from physical structures, a view called psychobio= logical. (Macropedia Vol 15 p.175)

Kraepelin having established the disease concept and Morel having introduced the social model, Bleuler came with yet another rung of development in the endeavour to understand dementia praecox. It was Bleuler (1911) who emphasized impairment of thinking as the primary source of schizophrenic symptoms although he did not deny the possibility of a coexisting toxic basis as well. Bleuler coined the word schizophrenia - splitting of the personality. By this he indicated his belief that the disorder was "characterized primarily by disorganization of thought processes, a lack of co= herence between thought and emotion and an inward orientation away from reality" (Coleman and Broen 1972 p.268)

As an improvement on the work that had already been done

Bleuler established two sets of symptoms which were the primary and the secondary symptoms. Primary symptoms were disturbances of thought, disturbances of affect and ambivalence, a term which Bleuler invented. Secondary symptoms were those symptoms which frequently appeared even in other mental disorders like general paresis, alcoholic psychosis, and toxic exhaustive psychosis. These were enumerated as delusions, hallucinations, and ideas of depersonalization.

Apart from this distinction between primary and secondary symptoms Bleuler made another contribution by his introduction of the concept of autism. Arieti (1969 p.457) describes Bleuler's autism as meaning a way of turning away from reality, a special way of behaving, but predominantly a special way of thinking which is opposed to logical thinking. Autistic thinking is further described as reproducing or interpreting not external reality but a world of fantasy, dominated by wishes and fears and mediated by Freudian symbolism. Bleuler felt that although autistic thinking might occur in many situations, such as when emotions are very strong or in artistic productions or in the play of children it's most pronounced form appears in schizophrenia.

Finally Freud (1856 - 1939) provided yet another orientation towards the understanding of schizophrenia. Freud's orientation was evolved primarily from preoccupation with neurosis rather than schizophrenia in particular. It is therefore not surprising that his exposition on schizophrenia is presented as a comparison between neurosis and schizophrenia.

Zax and Cowen (1972 p.134 - 135) give an account of Freud's comparison of the neurotic and schizophrenic conditions in his paper on narcissism which he describes as a state wherein one treats his own body as a sexual object and experiences complete gratification in looking at it caressing and fondling it. Freud's contention then was that both the schizophrenic and the neurotic withdrew libido from external objects because of frustrated impulse gratification experienced with such objects.

The difference between the neurotic and the schizophrenic

is pointed out when he describes the neurotic as redirecting the libido onto objects that are held internally in fantasy whereas the schizophrenic rejects objects entirely. He further elaborates on this by presenting the neurotic as a person in whom eventually the libido returns to the ego which effects a relationship with external objects through the use of defense mechanisms that divert id aims and come to represent the symptoms of psychoneurosis. On the other hand with the schizophrenic person objects are renounced and libido is focused on the self as in an infant state. The effect of the libido being focused on the self is that in the schizophrenic perceptions stimulated from outside the person are limited and the inner world is altered so that rather than reflecting what is outside, it conforms primarily with the pattern of the id impulses.

Zax and Cowen (1972 p.135) maintain that according to Freud the frustration that leads either to neurosis or psychosis involves the failure to fulfil some insistent impulse of the id. This frustration inevitably derives from the external world, although in some cases it may result from action of the superego. Whether a neurosis or a psychosis results from such frustration depends upon the state of the ego. If the ego is strong enough, it masters the id if it is not, it is overwhelmed by the id and fails in its task of coping with the demands of reality.

The importance from the psychoanalytic viewpoint of conditions of early life that make for the development of a weak ego, and biological states responsible for the intensity of the drives that cannot be fulfilled as factors that predispose to schizophrenia cannot be overemphasized.

Further insight into Freud's theory of a disturbance of object relations as fundamental to the schizophrenic condition is provided by Wolman. (1965 p.987). He maintains that Freud assumed that the fixation point of schizophrenia lies in the transition from the autoerotic stage toward the beginning of object relations. To illustrate the significance and emergence of symptoms, schizophrenia is seen on the one hand as a process of regression and withdrawal

of libido from objects but at the same time being a restitutive struggle to repair object relations. It is this restitutive struggle that is identified as the symptoms of schizophrenia.

Viewing Freud's theory as a whole one comes to the conclusion that whereas before him the tendency was to point to either organic or social factors he strikes a union of these two by establishing schizophrenia as originating from conflict between organic and social interaction factors.

CONCEPTUAL FRAMEWORKS OF SCHIZOPHRENIA

A general view of the literature on schizophrenia shows that there is a lack of agreement on the etiology of this condition. To facilitate a study of the different views on schizophrenia then a conceptual framework using Freedman and Kaplan's (1974 p.597) Framework as a basis will be used.

PHYSICO - BIOLOGICAL MODELS

These models are oriented towards explaining the manifestations of schizophrenia in terms of its causes.

Hinsie and Campbell (1970 p.679) make a nearly exhaustive summary of the somatogenic causative factors of schizophrenia. They maintain that while specific etiology remains unknown mounting evidence favours the conception of the schizophrenias, as a heredogenetic disease involving certain enzyme systems of the body.

In the same work Kallman adds to this by expressing his belief in schizophrenia being a metabolic deficiency that is transmitted through heredity which manifests itself as a lack of ability to respond to certain environmental stimuli.

Although the genetic approach has been supported by a lot of research and promising results it is a fact that there are studies which throw doubt on the validity of the interpretation of these results. The doubt here has been expressed by those with a leaning toward more environmentalistic explanations of the etiology of schizophrenia.

They have raised other issues not fully resolved by current genetic studies.

Zax and Cowen (1972 p.164) for example maintain that if schizophrenia is a hereditary disorder, its mode of transmission is unclear. Much current opinion on this matter suggests that transmission occurs through recessive genes. If so schizophrenia should appear less often in the children of index cases than in their own siblings. In fact the reverse is usually found. Furthermore, it should appear in all the children of cases where both parents are schizophrenic, and nothing approaching a 100% rate for such a group has ever been reported.

Several other factors argue against a strict genetic transmission of schizophrenia. These include the hypothesized tendency of schizophrenics or those from schizophrenic families to mate selectively with others from similar backgrounds; higher mortality rates among schizophrenics than in the general population; and the fact that schizophrenics are less likely than normals to marry and have children. The overall effect of these factors would be to reduce the number of offspring of schizophrenic parents and ultimately the total percentage of schizophrenics from generation to generation if genetic factors are all important. That such a reduction in the number of these patients has not occurred argues against a strictly genetic theory.

Bonartsev (1974 p.1433) recently studied the blood of schizophrenics and that of a control group. In his study he found that the blood of the schizophrenics showed increased physiological activity in the lympocytes of the schizophrenic subjects thus pointing to a basic physiological difference which could be considered a pointer towards the etiological factors of this condition.

Caution is sounded by Arieti's (1969 p.491) quotation of Horwitt's standpoint on the issue of blood studies in schizophrenia. He maintains that comparing data from blood samples of these patients and normal people is like comparing samples from soldiers on the battlefields and people in a relaxed basal condition. To add on to this Horwitt also stresses that the vagaries of psychotic behaviour are such

as to affect food intake. In many cases this ab= normal food intake is responsible for nutritional dis= orders and metabolic changes.

Hallucinogenic drugs like bulbocapnine mescaline and lysurgic acid have been studied in an attempt to trace the possibility of schizophrenia being resultant from biochemical factors. Wolman (1965 p.988) however registers a strong protest against this pointing out the symptoms produced by these substances are not specific, non-schizophrenics may display some of these symptoms and schizophrenia may occur without most of them. These studies can only be recognized then as demonstrating the possibility of inducing transient mental confusion.

A neurophysiological involvement has been suggested by Pavlov which hypothesizes that schizophrenia is a pro= tective reaction of weak cortical centers. Outbursts of violence have been interpreted by Pavlov as a lack of control of the weak cortex over subcortical centers. Wolman (1965 p.989).

THE PSYCHODYNAMIC MODEL

The main champion for this model is Freud who as has been shown earlier in the historical background emphasizes dis= turbances in object relations as the main feature in the etiology of schizophrenia. The different symptomatic manifestations were explained as an interaction of various defense mechanisms against anxiety arising from early psychic traumas.

There are others in this field like the non-Freudian analyst Jung. One of his most striking assertions on schizophrenia is his stressing emotional overinvolvement which leaves little energy for facing real problems as being the root problem of schizophrenia.

Sullivan on the other hand introduced a new point of view in psychiatry by shifting the attention from the intra= psychic or intrapersonal to the interpersonal. He main= tained that schizophrenia is an indirect outcome of un= healthy interpersonal relations between the child and his

parents and or other significant adults. These faulty interpersonal relations do not permit the establishment of enduring patterns of response which eliminate anxiety. The patient resorts throughout his life to distorted interpretations of interpersonal situations and finally may lose "consensual validation" that is recognition from others of the validity of his statements.

Frazier and Carr (1964 p.121) perceive schizophrenic symptoms as a manifestation of regression. This regression in the schizophrenic is seen by them as pervasive and often to the preverbal period of development when ego boundaries were not clearly differentiated, reality testing ability was not well established and thinking was primitive and prelogical.

Roy Schafer (1967 p.173) elaborates on this regression and sees it as one to a level of organisation where the differences between inner and outer perception of objects that are important on higher levels of organisation have no certain meaning any longer. Schafer emphasizes the level of organization and sees the disturbed experiences of one's own body in schizophrenia and of other bodies as concomitant manifestations of this level.

THE INTERACTIONS MODEL

The importance of interactions within families has not escaped the notice of scientists in an endeavour to establish the etiology of schizophrenia. Lidz and his coworkers are reported by Zax and Cowen (1972 p.174) to have observed a high degree of instability within such families. They noted that large percentages of schizophrenic patients came from homes in which a parent had been lost early in life through death or divorce. In cases when both parents had been in the house the marriage was often marked by serious discord and many of the parents themselves were either psychotic, seriously neurotic or psychopathic.

As a result of the conditions expressed above, Lidz and Fleck conceptualized schizophrenia as a "deficiency disease". They believed three groups of developmental

needs of the child remained essentially unmet in such families and that the deficiencies were predisposing to schizophrenia.

Firstly the child failed to grow up to be independent or to feel secure about his personal boundaries. Secondly the families failed to help the child direct his drives into conflict free areas so that he can acquire age and sex appropriate social roles needed to facilitate interaction with people outside the family. Finally these families were found to be de= ficient in transmitting communicative and other funda= mental techniques of the culture to the child.

To give insight into the ingredients of the marital discord encountered in the schizophrenogenic family Lidz (1973 p.24 - 47) discusses two features which characterize these families. These are marital skew and marital schism.

Marital schism is the condition where each partner is disillusioned in the other and the children belong to one side of the opposing camps. In the marital skew the serious psychopathology of the dominant parent is accepted or shared by the other - a frequent combination is that of a domineering nagging and hostile mother, who gives the child no chance to assert himself married to a dependent weak man too weak to help the child. Or it may happen that a tyrannical father is married to a weak mother who has solved her problems by unconditionally accepting her husband's rules. These rules do not permit her to give enough love or feeling of acceptance to the child.

The parents of the schizophrenic have also been studied as individuals in their interactions with the child. Scrutiny into the motherled to the emergence of the concept of the schizophrenogenic mother, who was seen as essentially a rejecting mother. Zax and Cowen (1972 p.176) however maintain that this hypothesis is an oversimplification. They point out that it is not simply a lack of interest in the child that produces deficiencies in nurturance. The more fundamental difficulties were typically those of the

mother's own developmental deficiences leading to profound insecurity in rearing her own child. This resulted in the mother making unhealthy detri= mental interferencies in all the developmental stages of the child resulting in a general incapacity of the patient to be adequate in any sphere of life.

Arieti (1969 p.468) points out an important factor in the study of the father of the schizophrenic. He indicates that whereas previous authors had emphasized the weakness, aloofness and ineffectiveness of the father in the paternal role Lidz and his associates describe him as insecure in his masculinity in need of great admiration in order to bolster his shaky self- esteem, not infrequently paranoid or given to paranoid= like irrationality.

Zax and Cowen (1972 p. 183) after reviewing the studies made on the families of schizophrenics make two interest= ing comments. They point out the unfortunate position that control groups have rarely been used in these studies thus making it difficult to know whether the so-called characteristic interaction patterns of families that produce schizophrenics are non-existent in other families. They also suggest that an equally plausible interpretation is that the occurrence of schizophrenia in a child has caused the particular interaction patterns that are ob= served. They suggest that to differentiate among such possibilities schizophrenic families should be compared to families in which there is a severely ill but not schizophrenic child.

The interactions model is further elaborated upon in an interesting fashion by Haley (1963 p.87 - 102) who deals with communication in schizophrenia. He notes that the normal individual takes full responsibility for his communications. He gives this model

" (a) I
(b) am saying something
(c) to you
(d) in this situation "

The schizophrenic characterises himself by avoiding de=

fining his relationships altogether by negating any or all the four elements stated above. Haley maintains the ways of avoiding defining a relationship are the schizophrenic symptoms.

He also states that the avoidance of defining a relation= ship does occur in normals. The point of difference with schizophrenia however lies in the consistency of the schizophrenic's behaviour and the extremes to which he goes. He illustrates the extremes thus:-

> "He will not only deny that he is saying something but will also deny it in such a way that his denial is denied. He does not merely use a name other than his own, he uses one which is clearly not his, such as Stalin or in some other way negates his denial"

Incongruence even at this level of denial is pointed out as characteristic of the schizophrenic disorder.

Apart from the disorder manifesting itself in disturbed interpersonal relationships in the context of communication, another level of relationship disturbance is noted in the schizophrenic's demands such as taking orders and carrying them out effectively.

Yet another angle which illustrates the schizophrenic's in= ability to maintain effective interpersonal relationships is his failure to maintain relationships where he is accepted as an equal, neither can he adequately engage in a competitive relationship.

Finally the study of family interactions has attracted the interest of some phenomenologists like Laing and Esterson (1970). They are characterized by rejection of the assumptions made by the medical model in psychiatry and also the psychoanalytic approach with its emphasis on the realm of the unconscious and that of defense mechanisms. The practice of the identification of the family as the source of the disorder that results in a patient developing schizophrenia is shown by these to be simple labelling that

is misguided. What Laing and Esterson hope to establish is that the experience and behaviour of schizophrenics is much more socially intelligible than has come to be supposed by most psychiatrists. These however, do not present a theory as such but put forward a method for investigating this problem.

THE CONDITIONING - BEHAVIOURAL MODELS

Current models of this school of thought consider schizophrenia as a chronic condition of nonadaptive responding due to disturbed reinforcement patterns of early experiences. These maladaptive experience - response - reinforcement configurations lead to faulty generalizations of responses and in this manner interfere with perceptual and cognitive discrimination.

To expatiate on this model Ullman and Krasner (Zax and Cowen 1972 p.150) indicate that one who manifests schizophrenic behaviour is seen not to have been reinforced for attending to cues most people find significant. As a result the schizophrenic's attention to the social stimuli to which "normals" generally respond has been extinguished. The frequent development according to Ullman and Krasner then of somatic complaints in the early stages of a schizophrenic break is explained as a new attempt to win reinforcement stemming from the recognition that one is not well regarded by others. If ordinary symptomatic complaints fail more bizarre symptoms may be used.

PHENOMENOLOGICAL - EXISTENTIAL MODELS

A characteristic feature of these models is the perception of schizophrenia as manifesting itself in a disturbance of the sense of reality. Frankl is quotated by Freedman and Kaplan (1974 p.597) to have maintained that the schizophrenic experiences himself as so limited in his full humanity that he can no longer feel himself as really existent.

Arieti (1969 p.458) suggests that Binswager is perhaps the best known psychiatrist of this school. Binswager's interest is not directed towards constitutional or psychody-

namic or symbolic or characterologic studies of the patient but in the underlying structure that existed prior to the illness and that explains the way of being - in - the - world of the patient, his pathologic potentialities and the uniqueness of his experiences.

Another contributer to this model is Minkowska a pupil of Bleuler who added to Bleuler's conceptions the flavour of Husserl's and Bergson's philosophies. In his work La Schizophrenie he states that the crucial point of the schizophrenic syndrome is the loss of vital contact with reality (Arieti 1969 p.459).

It is interesting to note that whereas Minkowska advocates vital contact being established through psychotherapy he does not give instructions on how to re-establish such contact. Characteristically contributors to this model only point to possible solutions but do not involve themselves in actually saying how these are to be carried out. Hence Arieti maintains that the studies in this model will be useful provided they are complemented by the psychodynamic formal and psychosomatic studies.

COGNITIVE MODELS

The study of schizophrenia has also been approached from the cognitive angle. Buss (1966 p.187) refers to the most important and most salient symptoms of schizophrenia as being those in the cognitive sphere.

The interference theory of Shakow impresses the fact that the schizophrenic lacks the cognitive ability required to process information meaningfully and adequately. This Shakow maintains should affect the entire range of cognitive behaviour from simple to complex perception association and conceptual thinking.

The inefficient information processing which affects cognitive behaviour manifests itself in schizophrenics for example in their being perceptually unable to adhere to the major set disregarding minor sets and as a result their being easily disturbed.

Finally there are 3 theories concerning the con= ceptual thinking of schizophrenics. One maintains they are unable to do abstract thinking or attain concepts. another says there is a difficulty in communicating concepts not that there is a disturbance in conceptual thinking. In conclusion there is con= ceptual interference. This manifests itself in overinclusion and what Cameron labelled as inter= penetration, being the tendency for personal and idiosyncratic themes intruding upon schizophrenics' speech.

MOTIVATIONAL MODEL

Two approaches to the understanding of schizophrenia are enumerated by Buss. The cognitive approach assumes that cognitive symptoms occur first and then lead to social withdrawal. The motivational approach assumes that motivational variables such as rewards, punishments and drives account for the subsequent develop= ment of cognitive symptoms.

Experiments quoted by Buss demonstrate that physical noxious stimuli motivated schizophrenics to perform better and that their improvement exceeded the improve= ment of normal subjects. These results constitute strong evidence for the theory that schizophrenics are undermotivated.

SUBDIVISIONS OF SCHIZOPHRENIA

The classification of schizophrenia is not uniform. Some psychiatrists see the major division in terms of process and reactive schizophrenia while others stick to the original grouping of simple, hebephrenic, cata= tonic and paranoid schizophrenia.

Kantor, Wallner and Winder according to Jackson (1960 p. 215 - 216) formulated a preliminary scheme for differentiation of reactive schizophrenics and process schizophrenics. This was a Rorschach study. Interest in this in the present chapter however is in the fact of the differentiation because reactive cases were charac=

terized by good premorbid adjustment, sudden onset and adequate precipitating events. Process cases on the other hand were those with poor, premorbid adjustment, gradual onset and abscence of adequate precipitating factors.

With the accumulation of the literature on schizophrenia it is noted that the forms of schizophrenia are not only the four formal forms of paranoid, catatonic, hebephrenic and simple but also childhood, ambulatory, pseudoneurotic, acute episode, chronic undifferentiated, schizo-affective, pseudo psychopathic, residual and other forms. Almost all psychopathology books give full descriptions of what is involved in each one of these forms.

Although there are these many forms in reality the patients themselves do not experience one form at a time but a dominant form and another to a lesser extent. Also the various forms of schizophrenia have been considered as having common characteristics. White (1964 p. 515) attempted a unification of the schizophrenias by stating that

> "One thing that can be said about all of them is that they show a disturbance of relationship with people."

Time is another dimension that deserves consideration in the subdivisions of this condition. There are sharp differences that characterise schizophrenics in the acute or anxiety stage and those in the chronic advanced stage. The patients in the acute stage are characterized by their fearfulness when they first recognize their own bizarre cognitive symptoms. They have rudimentary and vague delusions.

With time and chronicity the picture changes because intense anxiety is lost. The patient's delusions then crystallize into a definite form that remains unchanging for years. Disturbances of thought also proliferate over time and there is marked evidence to the effect that the patient has settled for a psychotic existence without any motivation for social conformity and social validation of reality showing little affect, anxiety or confusion.

THE ANTI-PSYCHIATRIC SCHOOL

A discussion of schizophrenia and its subdivisions would be incomplete without mentioning the anti-psychiatric camp which voices its protest against the practice of labelling certain individuals as "mentally ill".

To understand this school one has to turn to such authors as Szasz who in an article on the Myth of Mental Illness (Shean 1971 p.25) declared:

> "My aim in this essay is to raise the question 'Is there such a thing as mental illness?' and to argue that there is not."

Szasz advances the suggestion that the phenomena called mental illnesses be looked at afresh and more simply that they be removed from the category of illnesses, and that they be regarded as the expressions of man's struggle with the problem of how he should live.

Further developments along this line of thought are exhibited in the writings of people like Cooper who maintain that the practice of putting these individuals whose condition indicates problems in living in psychiatric hospitals is illogical and unwarranted since they are not ill in any sense. Cooper in actual fact says it explicitly that this is violence on the part of the psychiatrists. Psychiatrists are seen to be functioning outside the medical frame and being more or less agents of the state or the system.

Diagnosis and its usefulness is doubted and discredited by members of this school. An extreme rejection of diagnosis is represented by Laing who is quoted by Kurt Salzinger (1973 p.9) to have written that "Schizophrenia is the name for a condition that most psychiatrists ascribe to patients they call schizophrenic."
Salzinger rejects this definition quite vehemently and recommends Stengel's approach which is

"schizophrenia, as an operational concept would not be an illness i.e. a biological reality ... but an agreed operational definition for certain types of abnormal behaviour."

Three things stand out clearly about the anti= psychiatric school. These are the school's protest against viewing psychoses such as schizophrenia as mental illnesses; it also pro= tests against people with the condition being ad= mitted to hospitals encouraging the people to exonorate themselves from responsibility over their acts; and finally the very act of diagnosing these people as schizophrenic is seen as serving no purpose at all since it robs the individual of his being viewed as a person with a unique understandable ex= perience and encourages his prejudicial observation by members of the psychiatric school with the corollary that they categorize him as suffering from a certain disease.

An understanding of part of the logic behind the pro= test against diagnosis is demonstrated by Beutler (1973 p. 303 - 308). He traces this first from outside the profession where psychological and diagnostic evaluation has been attacked on moral grounds for violating basic human rights of liberty and privacy. Within the pro= fession he maintains that psychological assessment is susceptible to criticism on practical grounds such as that current diagnostic test procedures provide unreliable and invalid results which are of little value to a treatment program. He quotes Meehl who has reported that insofar as pschotherapy is concerned the treatment is most often given regardless of the psychological assessment and that only 17% of the therapists he interviewed felt that prior knowledge contributed by testing is of no sufficient value to warrant the effort.

Ullman and Krasner (1969 p.28) point to the disadvantage involved in attaching diagnostic labels

"Once a diagnosis has been made

> the labelled person is likely to be treated and reacted to in terms of the diagnostic label. That is a person who displays three of the twenty possible diagnostic indicators may be placed in the same category as another person who displays eight totally different indicators. Both individuals then tend to be treated identically as members of the category to which they have been assigned.

SCHIZOPHRENIA IN AFRICA

Recognition of the role of culture in various spheres of the world's societies has led to a be= lief in its influence in the realm of etiology and symptomatology of psychiatric conditions. This has led to questioning of the possibility of the present psychiatric classification being universally applicable. The possibility of some cultures being more stressful than others and cultural pressures and stresses differentially disposing individuals toward mental illnesses has been expressed by Ihsan Al-Issa in Costello (1970 p.27). It is as a result of the existence of such ideas that it has been con= sidered necessary that studies of schizophrenia as it occurs in Africa be reviewed since African patients will be studied in this project.

The embrionic stage at which studies in the field of culture and its influence are still at is expressed explicitly by Levine in Hsu (1961 p.48) when he writes:-

> "There has probably been less re= search on socialization processes, the psychodynamics of cultural behaviour the application of pro= jective techniques personality and culture change and culture and mental disorder in Africa than in any area of the world."

The anxiety this state of affairs has generated concerning opinions on psychiatric conditions has led to statements like those made by D. Mackay in 1948 (Opler 1956 p. 114 - 115)

> "We in Africa have not got a normal for our basis, because we have never taken the trouble to study African normality .... We have so far judged our cases on their departure from a European normal, if we have judged them at all or else we have judged them on their departure from a normal which we do not know."

Although this statement was made in 1948 it is amazing how it still is taken to be the case even at this time.

This feeling of not really knowing what African normality entails could be alleviated if the statement made by Kluckhohn in Leighton et al (1957 p. 404) is considered.

> " ..... so far as is known all cultures define as ill persons who (1) are permanently inaccessible to communi= cation (2) whose behaviour is steadily and drastically at variance with cultural norms (3) who do not have a certain minimum of control over their impulses, especially their aggressive tendencies."

This gives a lead then to the universality of the re= cognition of departure of behaviour that is not con= sidered as healthy.

Protest has been registered concerning the study of aspects of behaviour in Africa considering Africa as having one culture

> "Cultural variation among the millions of people and hundreds of linguistic groups in subsaharan

> Africa is so great as to defy any attempt to describe 'African culture'. (LeVine in Hsu 1961 p. 52)

It is LeVine's contention however that there are numerous cultural characteristics which may be said to be distinctively African. Although they are neither limited to Africa nor universal throughout it. A list of those distinctively African characteristics which have demonstrable or potential relevance to personality variables is presented by LeVine consisting of Pastoralism, dense populations, highly developed prestige economy and acquisitive culture patterns, centralized political institutions and institutionalized leadership; unilineal descent groups; bridewealth; polygamy and mother child household; initiation rites and genital operations; ancestor cults; witchcraft and sorcery; importance of proverbs in Folklore. The studies in African schizophrenia will be referring to a group of people who have an almost common cultural heritage whose common cultural constituents are those listed above by LeVine.

Interest in the occurrence and study of schizophrenia in Africa was evident according to Ihsan AL-Issa in Costello (1970 p.27) as early as the 1930's when it was claimed that schizophrenia as known in the west was non= existent among certain "forest Bantu" of Africa. In 1950 however Tooth found that schizophrenia among Africans of the Gold Coast occurred in the familiar European pattern of simple, mixed, hebephrenic, catatonic and paranoic. Loudon also is quoted in Costello (1970 p. 27) to have found that simple and hebephrenic schizophrenia are the most familiar types among the Zulu Africans.

One of the earliest studies of schizophrenia with the South African Natives was done by Laubscher. (1951). Laubscher described schizophrenic patients as being characterized by a negative reaction to all attention. He found even in fairly clear paranoid trends, episodes of mutism, resistive= ness and negativism. He was particularly aware of an ele= ment of hostility underlying most of the psychotic reactions

in the female schizophrenic patients he observed. Notice was also made of patients at some time or other giving expression to their delusional ideas in which mythological beings figured prominently. Laubscher (1951 p. 278) recognized the most outstanding characteristics of this disorder in the patients as

(a) confusion of thought
(b) disturbance of association of thought
(c) divorcement between mood and thought.

Ari Kiev (1973 p.47) quotes Carothers to have reported the existence of transient forms of schizophrenia in Africa reporting that the African is evidently prone to develop a kind of twilight or confusional state always tending to spontaneous recovery within a matter of time. The main feature of these states is said to be confusion and the dominance of action by emotion. The emotion is usually fear which may be panic or hostility. Recovery is usually remarkably complete or followed by Ganser's syndrome or various symptoms. Thereafter amnesia for the episode appears to be the rule.

Another facet of the differences in the symptomatology of schizophrenia in Africa is pointed out by Bleuler (1965 p.506). He reports the frequent existence of patients with psychoses of schizophrenic symptomatology who recover entirely in Africa. The question of the recovery of schizophrenics in Africa is also dealt with by Carothers (1973 p.154) who reports several writers e.g. Berman, Fortes and Mayer, Lambo and Lamont and Blignault who have found that schizophrania in Africans carries a better prognosis, responds better to electroconvulsive treatment; and is less subject to recurrence than in Europeans. M. Bleuler (1965 p.506) even maintains that the outcome as a chronic schizophrenic psychosis is seen sometimes, but is not the rule. Forster's (1957 p.51) scrutiny into the problem of schizophrenia in Ghana revealed that in this country this disorder was influenced by local beliefs in magic, by the impact of Western Civilization, the migration

of labour groups and tropical diseases. He identified several precipitating factors such as superstitious beliefs, an unwholesome family system of dependency and poverty, organic disorders, malaria, fractures, head injuries and pregnancies.

Foster observed the main features of the disorder to be those of behaviour and thought. Stilted mannerisms, antics, wild gesticulation, indecent exposure, violent motor storms, apathy negativism and flexibility cerea were all observed. Another important observation he made was that the basic reaction type of mental disorder was the same everywhere but environmental and consitutional factors modify the picture and symptom constellations are influenced by environmental factors of life view and beliefs.

Another observation he made was the increase in admission rates of schizophrenics in the parts of Ghana undergoing radical cultural change suggesting that schizophrenia is a mental condition directly related to radical changes in the environment and consequent inability of personality to handle the new and drastic changes and therefore a phenomenon occurring wherever such social changes are taking place. This observation is similar to Tooth's hypothesis (Hsu 1961 p.80) that the situations of personal choice introduced under westernization lead to mental disorder. LeVine (Hsu p.80) however points out that Tooth was unable to find quantitative evidence of more psychosis among westernized segments of the population.

Another facet of the study of schizophrenia in Africa is provided by Lambo in De Reuck and Porter. (1965 p.63) Lambo asserts that whereas in Europeans the distinction between an affective state with schizophrenic features and a depressive phase in a primarily schizophrenic psychosis is a common stumbling block in differential diagnosis, in Africans schizophrenia is more liable to be confused with one of the organic psychoses. Lambo has also noticed that among the bush peoples a typically schizophrenic picture is most likely to be due to organic

illness while schizophrenia itself appears as an amorphous endogenous psychosis. It is however significant to note that the schizophrenic psychoses occurring in the urban literate section of the population show more closely the same forms as are found in Europeans according to Lambo's observations.

The differences between acculturated African groups exhibiting differences in their schizophrenic symptomatology is also reported by Carothers (1973 p.155) who quotes Gordon to have held not only that all his schizophrenics were literate but that all his literate admissions were schizophrenics. ! That schizophrenics are almost always acculturated Africans is explained by Carothers by the fact that since it is only or mainly literate schizophrenics who develop the classical pictures, it is sometimes, as with Gordon only these who are so diagnosed.

Features in the occurrance of schizophrenia in the non= literate African then led Lambo to the recognition of socio-cultural factors when they are powerful enough provoking secondary elaborations in the symptomatology.

Further insight into the picture of schizophrenia in Africa can possibly be gained insight into if one con= siders the works of Carothers and also of Campbell, Seedat and Daynes (1973). The latter point out an important factor in the problem of differential diagnosis with the African schizophrenic patient. In the case of acute onset of mental disorder the African may find himself in a mental hospital and that being his first place of contact with medical science. It is thus not unusual to find gross organic pathology in the presence of the psychotic states either as a precipitating or complicating factor.

Scrutiny into these studies on schizophrenia in Africa reveals two things. First the symptomatology in Africa differs from the symptomatology in Europe and the West especially when the patients come from a relatively un= acculturated background. Secondly the symptomatology with the acculturated African is similar to that found

in Western cultures. Interpretation of these two factors is quite an involved issue and required research into it. However one could put two hypothetical interpretations. Symptoms could be said to be different in Africa as a result of cultural differences hence there is change with acculturation. Another angle of interpretation could be from the medical side. As Campbell, Seedat and Daynes have shown the African comes into contact with medical science with hospitalization therefore schizophrenia with these people is seen clouded with various medical conditions.

As a result of the above it is difficult to make the differential diagnosis between toxic exhaustive psychosis and schizophrenia. Because the acculturated African is in better contact with medical science his physical conditions are attended to more quickly and the true schizophrenic picture emerges clearly.

Finally the less acculturated African reaches the psychiatric hospital after a long period of time has elapsed after the onset of the condition. The nature of the herbs that are used by the medicine men who do treat these patients first is as yet unknown. That they could be responsible for these secondary elaborations that have been attributed to culture has not been put to the test yet.

Finally it seems evident that basically schizophrenia with the African could be the same as schizophrenia in the West because once acculturation takes place the symptoms are observed to be almost the same.

Having dealt with the theories of the causation of schizophrenia and the role of cultural differences a conclusion has to be made on one aspect that has a vestige of consistency and universality in the midst of the diversity encountered in discussions of schizophrenia. Auerback (1959 p.5) identifies this aspect as that of diagnosis of cases of schizophrenia, even though on a purely descriptive basis, with a reasonably satisfactory amount of agreement for clinical and statistical purposes.

The study made by E.D. Wittkower H.B. Murphy et al (1960 p.5) confirms the existence of a certain amount of universality.

> "The first and perhaps most basic point on which we could expect our inquiry to shed light was whether there were certain mini= mum features recognized as schizophrenic by psychiatrists everywhere, or whether such common features were lacking. The former proves to be the case. A global view shows that psychia= trists all over the world (with very few exceptions) regard social and emotional withdrawal hallucinations and delusions and flatness of affect as typical schizophrenic symptoms."

Two definitions summarise the symptoms that are re= cognized as necessary for the diagnosis of schizophrenia.

The first definition is that adopted by Arieti (1969 p.455) from Blakiston's New Gould Medical dictionary.

> "Schizophrenic reaction (is) one of a group of psychotic reactions, often beginning after adolescence or in young adulthood, characterized by fundamental disturbances in reality relationships and concept for= mations with associated affective, behavioural and intellectual dis= turbances in varying degrees and mixtures. These reactions are marked by a tendency to withdraw from reality inappropriate moods, unpredictable disturbances in stream of thought, regressive tendencies to the point of deterioration and often hallucinations and delusions."

The second definition provides a shorter more condensed form of the above and will be the basis of the hypotheses which will be used in this project.

> "Schizophrenia is a descriptive term for a group of psychotic dis= orders characterized by gross distortions of reality; the disorganization and fragmentation of perception, thought and emotion and withdrawal from social inter= action"
>
> (Coleman and Broen (1972 p.268))

CHAPTER 2

THE RORSCHACH

The second important concept that needs clarification in this study is the Rorschach. A very brief historical introduction will be made and then the nature and use of the technique will be discussed.

HISTORICAL BACKGROUND

Although Herman Rorschach is recognised as the originator of this technique it is evident that he was not the first person to devote his interest to inkblots. As early as the 15th century Leonardo da Vinci and Botticelli asserted that formless stimuli could be used to stimulate the imagination. Subsequently workers like Justinus Kerner (1857) Binet (1895) Dearbon (1897) to quote a few, directed their interest towards inkblots as useful material in probing into the imaginativeness of their subjects. The plot was shifted from work with adults to work with children by people like Kirkpatric (1900) and Pyle (1913). Pyle however apart from shifting to testing children added another dimension to investigations with the inkblots by testing and comparing the responses of Negro and White children - finding the Negro children less responsive. Perhaps this could be taken to be the earliest forerunner of the cross-cultural application of what was to be called the Rorschach. Finally Bartlett in 1916 introduced the use of colour and also anticipated Rorschach in observing that while some subjects responded to the blots as a whole others responded to details within the blots.

Rorschach (1884 - 1922) in 1920 departed from the then current preoccupation and decided to deal with the perception aspects of inkblot responses rather than with their content. He believed his test to be a measure of perception rather than of imagination. Rorschach's work was stimulated by his interest in the

relationship between perception and personality. He held that a person's perceptual responses to inkblots could serve as clues to basic personality tendencies.

NATURE AND USE OF THE TECHNIQUE

What the Rorschach is, is quite a controversial issue. Exner attempts an explanation of why this is so by reminding us that

> "Rorschach did not postulate a specific theoretical position with regard to his inkblot technique and/or personality evaluation in general."
>
> (Exner 1969 p.4)

It seems justifiable however to say that first and foremost that it is usually classified as a pro= jective technique. This is so because the person's choice as to what he sees in the inkblots which are relatively meaningless figures could reflect signifi= cant aspects of personality by the subject unwitting= ly projecting certain aspects of himself into his performance.

Caution concerning enthusiastic acceptance of the Rorschach as a projective technique is sounded by Goldfried et al (1971) throughout their book. They refer to the Rorschachers' seeing the projective test as an ideal way of bypassing a person's defenses and inhibitions and getting to what he really is as synonymous with a naive acceptence of the Xray. They stress the usefulness of the Xray and also the Rorschach as being limited to certain purposes.

Further insight into the nature of the Rorschach will be gained by studying the assertion that it is a culture free test. Emphatic protests have been register= ed in this regard for various reasons.

Anastasi (1964 p.256) on this point maintains that since every test measures a sample of behaviour it will re=

flect any factor that influences behaviour and persons do not react in a cultural vacuum. Writers like Lindzey (1961) and Johnson (1972) stress the importance of taking into consideration various factors that pertain to matters of motivation; the subjects understanding of the test situation and its purpose; intrinsic interest in the test content; the subjects reaction to being presented with abstract material with no immediate practical significance as some of the factors that will determine the differences from cross-cultural contexts.

Coming now to the use of the Rorschach it is to be noted that this technique has been used in various settings for different objectives. Jensen in Buros (1970 p.130) states that the Rorschach is used

> "to assess, diagnose and describe every aspect of the human personality."

The cognitive, emotional and motivational aspects in both normal and psychiatric subjects have been assessed with the aid of the Rorschach.

The use of the Rorschach in the clinical setting in particular has been defined by Beck in Buros (1970 p.896) thus:-

> "As an aid towards diagnosis it can greatly facilitate the observer's task to more quickly uncover the likely major reaction patterns, eliminate false scents and suggest hypotheses as to the depth of and the dynamics in the patients' illnesses."

An important point made by Beck also is that the Rorschach can always be considered as an aid to, not a substitute for clinical diagnosis.

Schachtel (1967) on the other hand sees the technique as a means of studying the characteristic way in which the subject under study experiences his world and reacts to life experiences and demands. He (1967 p.13) emphasises the significance of the interpersonal experiential quality of the Rorschach technique application situation by emphasising the role of communication in an interpersonal situation being one of the determinants to the nature of the subject's final responses.

Finally one cannot overemphasise the amount of con= troversy concerning the reliability and validity of the Rorschach technique. Despite Rorschach's original claims for the validity of the test subsequent nega= tive research findings have led many users of pro= jective techniques to become suspicious about the role assigned the inkblots in delineating relation= ships between perception and personality. As a result of the sometimes disappointing research findings, emphasis has tended to shift to the analysis of nuances of the subject's social behaviour during the test and to the content of his verbal responses.

The question of what the Rorschach is will not be fully answered if one does not comment on its current status. Exner (1969 p.13) summarises the problems surrounding this by stating that:-

> "During a 40 year period of growth in the United States, the Rorschach has come to be one of the most commonly used psychodiagnostic techniques but it is also one of the most widely criticized tests of all times. There is still no clearly agreed upon theory of the test, no clearly agreed upon method of ad= ministration, no clearly agreed upon method of scoring and approaches to interpretation continue to be heterogeneous."

However despite this uncertainty it is worthy to note that confidence and enthusiasm in the Rorschach still

flourishes. This is expressed quite explicitly by Herbert Fensterheim (Freedman and Kaplan 1974 p. 540)

> "This is the most useful single instrument of the clinical psychologist. Through analysis of perception, cognition and con= tent, information concerning al= most every aspect of psychological organisation may be revealed."

STRUCTURE OF THE TEST

We note that the test consists of a set of ten inkblots. Any extensive description of the blots them= selves would involve one unwittingly into making some projections. It is perhaps sufficient to state that apart from being blots they are a mixture of chromatic and achromatic colours. Further their structure has been described by Schachtel (1967 p.20) as unfamiliar accidental forms that are neither purposive as most manmade objects are nor part of nature, organic or in= organic. The advantage of this is that their unfamiliar structure makes it possible to see (structure) them in many different ways, by emphasizing some, ignoring or de=emphasizing other aspects of their structural gestalt and their coloration or shading.

There are certain qualities which the blots have which makes it possible for subjects to respond to them. Schachtel (1967 p.26) enumerates these. He states that Rorschach pointed out that the inkblots must have a picturelike quality without which many testers would re= ject them as just inkblots. One factor in this picture= like quality is their size or scale. The inkblot too loses its power to speak to a certain depth in the average perceiver if its size goes either below or above a certain scale. Apart from this the cards should be simple and their arrangement in the space of the card should meet conditions of spatial rhythm of which their symmetry is a major one according to Rorschach.

ADMINISTRATION

In administering the technique the subject is told that he will be shown a number of cards. He will then be asked to tell the examiner what the blots look like, what they might be or what they make him think of. That there are no right or wrong answers needs to be emphasized. Although the cards are handed to the subject in a standard position he is free to rotate them as he pleases and generally encouraged to respond in his own way.

Pope and Scott (1967 p.120) point out that sometimes patients ask whether they should base their replies on the whole blot rather than a portion of it. They suggest that the patient should be told that he may follow his own inclinations. This, they assert, is the standard used by the majority of Rorschachers.

Rorschach himself did not make any elaborate introductory instructions but just asked the patient "What is this?" The importance of first creating rapport with the patient cannot be overemphasised especially when one is going to use Rorchach's "What is this?"

CHAPTER 3

REVIEW OF THE LITERATURE

INTRODUCTION

Although this is a clinical study a brief comment on the Rorschach with African subjects will be made. Since the Rorschach has been used with these subjects this is also a cross-cultural study.

The Rorschach has been applied in Africa by a few anthropologists and social psychologists like Doob L.W. (1960) Edgerton R.B. (1971) and Noruwana J.M. (1971). All these workers express recognition of the fact that work with the Rorschach with African groups is still at an embrionic stage and that there is still urgent need for more large scale use of the test and also standardization studies before it can be used with confidence in Africa. An extensive review of these people's findings have not been considered as directly relevant for this section of this study.

Justification for using the Rorschach in the face of recognition of the lack of standardization studies is expressed quite aptly by Noruwana (1971 p.83) when he quotes Kaplan:

> "as non-literate peoples become more and more influenced by Western culture and become more and more like the population for whom the tests were devised, the tests will work better, in the sense of yielding richer and more valid data."

Thus Noruwana (1971 p.85) expresses his enthusiasm and hope when he says:

> "Even in the face of this conflicting evidence I am tempted to believe that the Rorschach test can still play an important role in testing African

(Bantu) cultural groups, especially as these groups are being subjected to rapid and extensive social, religious, economic and political changes."

THE RORSCHACH AND SCHIZOPHRENIA

Literature on the Rorschach and Schizophrenia can be divided into 2 major categories. There is the category which is characterized by profile studies of the Rorschach records of these patients with attempts to present representative profiles of schizophrenics. On the other hand there is the research done with the Rorschach on Schizophrenia. Relative to this study then will be a study of the research with the Rorschach on schizophrenia.

Research with this technique has taken 3 major courses. These represent the development of Rorschach application to schizophrenia. The first course and the earliest involves the use of pathognomonic signs. The second course is composed of studies of lists of schizophrenic signs. Lastly there is the systems approach which investigates the patterns that occur in schizophrenia. This review will more or less follow this pattern.

THE PATHOGNOMONIC APPROACH

The pathognomonic approach represents the earliest investigation into the problem of schizophrenia with the Rorschach. It was Rorschach who first studied this condition with this technique. In his study he had 188 schizophrenics out of his total sample of 405 patients. He served to stimulate research by identifying and declaring the presence of pathognomonic signs. These he believed to be contamination, number or position responses and sudden drop in form quality.

Kendig (1948) refers to another investigator Piotrowski who also used pathognomonic signs. He added several qualitative indicators which were - inconsistant percepts of variable dimness; an occasional easily recognized ponderousness of manner and a disharmony between

the "levity of the original responses and the earnest accuracy of the patient's subsequent elaborations."

Piotrowski in Wolman (1965 p.536) criticises these signs on account of the rarity, with which they appear and declares they are more likely to occur when the patient has emotionally charged associations. Another point concerning the pathognomonic signs made by Piotrowski points to its disregard of the major portions of the Rorschach record and also that many patients produce none of these signs yet the absence of these does not imply that the patients are not schizophrenic.

It would be a great omission not to quote Rorschach's warning that the diagnosis of schizophrenia is difficult and that it is not possible to provide specific instructions on how to reach diagnoses from test findings. Piotrowski maintains that Rorschach's caution is justified since schizophrenics as a group manifest the greatest imaginable variation of responses both under clinical observation and during the Rorschach test examination.

THE SIGN APPROACH

The second approach which is the signs approach was more productive than the pathognomonic phase. This approach mainly consists of comparative studies which were statistically descriptive in which attempts were made to establish the fluency with which each conventional scoring category and a few others occurred in various diagnostic groups.

One of the earliest comparative studies is that of Beck quoted by Bell. (1948 p.139) Beck analysed the records of 81 schizophrenics and 64 normal control subjects and arrived at this table of means of scores in the two groups:-

MEANS OF 16 SCORES IN RORSCHACH RECORDS OF 81 SCHIZOPHRENICS AND 64 NORMALS

	MEAN SCORES			MEAN SCORES	
	SCHIZOPHRENICS	NORMALS		SCHIZOPHRENICS	NORMALS
R.	33.27	30.35	C.	.88	.28
W.	4.44	5.86	CF.	2.2	1.39
D.	19.02	19.88	FC.	.58	1.34
Dr	8.83	5.62	FY.	2.07	2.54
Z.	24.26	31.1	F+.	61.54	83.91
DW.	.83	.11	A.	41.05	46.87
M.	2.84	3.33	DS.	2.51	1.76
EC.	3.71	2.75	P.	3.95	5.92

From the above table then it was deduced that schizophrenics were distinguished from normals in the following features. The schizophrenics were more sensitive to rare detail, the presence of DW added support to the diagnosis. Normal WD and Dr approach was found to be much less likely to occur. Schizophrenics tended toward confused order and high pure C and high CF with low FC. Finally F+% and P were lower with the schizophrenic group.

There were other signs which were noticed to occur in schizophrenic records such as position responses, reversal of figure and ground, change of tempo (which means fluctuation in number of responses to cards or F+ next to F-) perseveration and monotypical productions, contaminations, descriptions, complete rejection, self reference, and unintelligible language, sometimes neologisms and sometimes juxtaposition of unrelated words.

Another comparative study that was carried out in 1938 was by Rickers-Ovsiankina. She matched 35 schizophrenics with 20 normals for sex, age and educational and intellectual levels. Like in the Beck study the most significant single difference was found in the percentage of sharply perceived forms (F+%). Another difference was found in the use of colour the schizophrenics tending towards more CF+ C than FC. The schizophrenic group was characterized by more shading responses, fewer popular and more original responses. These

original responses were however predominantly of poor form. The W+ percent was significantly lower in the patient group. Piotrowski (1965 p.53) remarks that the coexistance of few populars with many poor quality originals in this study measured the patient's poor sense of reality.

These studies also agree with the findings that Tshudin made in 1944 when he made a study of 901 subjects inclu= ding 268 normals 170 chronic schizophrenis 64 epileptics 143 organics and 256 psychopathic personalities. Con= sistent with previous findings the most striking finding again was the schizophrenic's very low F+ percent. The number of popular responses was also low namely 3.2 on the average.

Finally another study which is found towards the end of the era of the comparative sign approach is that by Friedman (1952.)

Friedman introduces his study with a justification of his approach. He maintains that in the clinical use of the Rorschach test, the linking of certain scores or variables to dimensions of psychological functioning or personality traits had been found pragmatically fruitful. He comes therefore to the conclusion that groups differing extremely widely in psychic functioning should also differ in what has been claimed as measures of that functioning, unless the significance attached to these measure's use is doubtful. Friedman however voices his awareness of the importance of viewing individual scores in the context of their Gestalt to be meaningful.

The study made by Friedman was undertaken in reaction to an article by Beck, Rabin Thiesen, Molish and Thetford (1950) in which the incidence and frequency of certain fundamental Rorschach variables in a group of healthy normal adult subjects was reported. He wanted to find out whether he could come to the same himself.

Friedman identified flaws in previous studies such as lack of homogeneity of groups socioculturally, in age, sex, intelligence and race. Apart from these he re= cognized the faultiness of the reporting of means and

standard deviation for Rorschach variables because of the inequality of units in Rorschach scales.

Friedman reports that his study deals with 2 groups of subjects where homogeneity of socio - economic status, age, intelligence, sex and race has been established. His criteria for normality were based upon the assumption that any individual able to function economically, socially and psychosexually without manifest disturbance or complaints to such a degree as to cause difficulty to himself or to others, should be considered "normal". His study then involved the comparison of schizophrenics with a normal adult sample to indicate which of the Rorschach variables used by Beck were capable of distinguishing between these divergent populations. His sample consisted of 30 male hebephrenic and catatonic schizophrenics and 30 male normal adults.

The result of Friedman's study was the finding of statistical differences in 8 variables which were

1, Number of W responses
2, percent of W responses
3, Number of DW
4, Number of D
5, percent of D
6, Number of V responses
7, F+ percent and
8, number of P responses.

Thus he draws the conclusion that most of the traditional Rorschach variables cannot be validly used in isolation for a more subtle evaluation of personality if they cannot differentiate between two extremely divergent groups of subjects. He points to the flaws in the comparative sign approach by pointing to the possibility of the psychological qualities customarily attributed to these Rorschach variables not being valid or these variables representing not so much specific qualities but very broad psychological tendencies. Also the possibility of Beck's gestalt approach to variables being the more profitable is pointed out. Finally he points to the possible fallacy involved in placing schizophrenia at the extreme end of a single continuum of

adequate psychological functioning which has normality at its other end.

Friedman makes the assertion that in what is called schizophrenia psychological functions are impaired which in their more specific aspects differ from individual to individual and even from one time to the other in the same individual. When Friedman concluded his study by stating:

> "In order to be most fruitful new variables should reflect vectors of a systematic and comprehensive theory of personality rather than isolated traits or independently considered as= pects of psychological function."

he heralded the advent of the systems approach and showed insight into the apprehension of the end of the era of the signs approach in Rorschach testing in Schizophrenia.

Piotrowski makes the remark that while workers with the sign approach agree quite well on the components which appear with significantly greater or lesser frequency in the records of schizophrenics, none of them has stated "what number or what combinations of the pertinent components suffice" to reveal a schizophrenic psychosis in the individual patient. Finally he points to the frequent similarity between lists of components in quite diverse syndromes so that statistical averages still leave much to be desired particularly in borderline cases.

THE SYSTEMS APPROACH

A comprehensive analysis of the systems approach is pre= sented by Goldfried et al (1971). He discusses systems which had appeared in more than one journal article.

The first system he tackles is Piotrowski's Alpha Index. This index was designed by Piotrowski in order to identify early, mild, incipient and pseudoneurotic forms of schizophrenia in cases where a clinical expression of the pathology was masked and indefinite. This system is based on Rorschach's indices of energy capacity and energy con=

trol and it attempts to identify a disproportion between these two variables. It reflects overcontrol, underactivity and underproductivity.

To arrive at an alpha score weights were assigned to various levels of W, Sum C, Sum c minus Sum C, the presence or abscence of c shock, and the sign F+%<70. The alpha index applies only in those cases where W<7 and sum c≥C. It is also intended for use with subjects who are 16 years or older.

The diagnostic utility of the alpha is that if it is equal to 3 or more, this is taken as an indication that the subject is more severely disturbed than merely neurotic. No distinction can be made between the preschizophrenic and the manic depressive. A number of supplementary signs are suggested to make the distinction between the possibility of an early schizophrenic condition and the presence of organic brain damage. These are 1, inductive perception, which is scored when the patient proceeds from the detail to a larger percept or names a series of integral parts of an unnamed larger object 2, size 3, fragmentation and 4, emotional judgement.

Goldfried et al make the comment that scoring reliability makes it doubtful that this index would prove to have high interscorer reliability since neither C nor c are among the more reliably scored determinants.

An example of a study that used the alpha index is that of Piotrowski and Lewis where the Rorschach protocols of 30 schizophrenic and 20 neurotics whose diagnoses were reconfirmed by a psychiatric interview at least three years after initial administration of the Rorschach were used. 70 schizophrenics, 20 neurotics, 10 manic depressives and 30 organics whose diagnoses were not reexamined after time were added. A critical score of 3 on the Alpha index successfully identified 28 of the 30 schizophrenics and 19 of the 20 neurotics with the group with confirmed diagnoses. The results were not as exact with the group with unconfirmed diagnoses although it achieved close to an 80% correct diagnosis.

Apart from this study on the alpha index two others by Piotrowski and Berg in 1955 and by Abrams (1964) are quoted by Goldfried et al to have been under= taken. The conclusion these workers reach about the alpha is that not sufficient work with it has been done to reach any definite conclusions about its potential, effectiveness. Finally Goldfried points out its limited applicability to only the small percentage of patients who meet its requirements and even there it can only be taken as a clear diagnostic sign only when the cut off score is reached.

Another system is that developed by Thiesen in 1952 from comparisons between 60 schizophrenic adults and Beck's (1949) normal control group of 157 gainfully employed adults. He analysed combinations of 20 major Rorschach scoring variables in the two groups and used 3 criteria to select his patterns. The first was that the pattern occur in more than 10% of the patient records. The second that the pattern be pre= sent in less than 2% of the control group. Lastly the incidence of the pattern significantly differentiate the group at the .01 level of significance. The patterns derived from this were the following:-

Pattern A - The presence of 3 or more anatomy responses and four or more sex responses. This would not be diagnostic in selected populations, such as analysands and friends of the examiner.

Pattern B - F+% of less than 69 and a Z score of less than 80.

Pattern C - No FC or M responses and an A% of less than 40.

Pattern D - an F% of less than 69, an A% of less than 40 and fewer than 5 P responses.

Pattern E - One or more DW responses and no FC responses.

Like in the case of the Alpha there is a condition that has to be met before the pattern applies. 10 or more responses given is the condition. The presence of one or more patterns of the ones listed above in an individual's protocol is then considered diagnostic of schizophrenia. Absence of any patterns however does not necessarily indicate normality.

The infrequency with which the Thiesen patterns appear even with schizophrenic patients has led to the doubtfulness of its diagnostic value. The failure of investigators to cross validate Thiesens systems has led to its being declared of limited value together with the systems approach as a whole.

Two other systems are discussed by Goldfried et al. These are the Delta index by Watkins and Stauffacher 1952 and Weiners signs. A discussion of these will not be made. It has been considered profitable instead to view one study where a systems approach has been applied. This is the study made by Brackbill and Fine. (1956).

In this study the authors selected one of the important questions for the use of psychological diagnosis - the differentiation between a schizophrenic reaction and the presence of central nervous system pathology. They point to the difficulty in doing this since schizophrenics have a tendency to respond to tests just as organics do. They differentiated between process and reactive subjects and hypothesized that the process group would react more like the organic group than the reactive group of schizophrenics. They formulated these hypotheses:-

A. There are no significant differences in the incidence of organic signs on the Rorschach between a group of process schizophrenics and a group of known cases of central nervous system pathology.

B. Both organic and process groups show signifi= cantly more signs of organic involvement than does the reactive group.

The sample they chose comprised 36 process and 24 reactive schizophrenic subjects. These were classified on the basis of case history information alone without knowledge of the Rorschach or regard for the severity of the clinical symptomatology. The organics comprised 28 cases of known organic involvement which were 23 paratics, 2 korsa koff's syndrome, 2 traumatic head injury and 1 brain tumor.

The following 10 signs as described by Piotrowski were used: total number of responses less than 15 (R), average time per response more than one minute (T), number of movement responses no more than one (M), at least one colour denomination response (Cn), percentage of good form responses less than 70 (F%), percentage of popular responses less than 25 (P%), giving the same response to several blots (RPT) giving a response in spite of recognition of its inadequacy (I.M.P.) distrust of own ability and request for reassurance (PLX), use of automatic phrases in an indiscriminate fashion (AP).

Having applied the Rorschach to the 3 groups the following results were found.

TABLE I

INCIDENCE OF RORSCHACH SIGNS OF ORGANIC PATHOLOGY IN THREE DIAGNOSTIC GROUPS

GROUP	R	T	M	Cn	F+%	P%	R.P.T.	I.M.P.	PLX	AP	PERCENT WITH 5 SIGNS	MEAN NO OF SIGNS
PROCESS	61	33	78	17	22	22	39	19	33	17	36	3.42
REACTIVE	54	25	58	10	12	54	21	4	12	4	8	2.46
ORGANIC	83	17	69	17	34	41	55	14	38	31	34	4.00

TABLE 2

SIGNIFICANCE OF DIFFERENCES BETWEEN DIAGNOSTIC CATEGORIES

GROUPS	R	T	M	Cn	F+%	P%	R.P.T.	I.M.P.	PLX	AP	PERCENT WITH 5 SIGNS	MEANS
P and O												
CR	1.95	1.46	0.82	0	1.08	1.65	1.29	0.54	0.42	1.33	.34	1.17
p	.05	.14	.31	1.00	.28	.10	.19	.58	.67	.18	.73	.24
R and O												
CR	2.29	0.72	0.83	2.11*	1.85	0.95	2.52	1.24	2.14	2.51	2.15	3.25
p	.20	.46	.41	.03	.06	.34	.01	.21	.03	.01	.03	.001
P and R												
CR	0.34	0.66	1.66	2.16*	0.99	2.54	1.46	1.68	1.84	1.52	2.46	1.85
p	.58	.50	.10	.03	.32	.01	.14	.09	.06	.13	.01	.06

* Questionable because of the non-occurance of Cn in the R group.

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Results deduced from these data are that against Piotrowski's criterion of 5 or more signs as a definite indication of organic involvement no significant difference was found between the organic and process groups. The reactive schizophrenics were however significantly different from both organic and process subjects. The results then tend to support the hypothesis that process schizophrenics react to a perceptual task in a similar manner to that of patients with central nervous system pathology.

The conclusion reached by Brackbill and Fine in this study is that perhaps the difficulty in differential diagnosis of organic involvement and schizophrenia is not due to lack of sensitivity in the test variables, but to the grossness of the category schizophrenia.

Commenting on the statistical stand of the study the authors reveal that Piotrowski's signs produce only 6% false positives i.e. a criterion of 5 organic signs results in only 6% of individuals with organic pathology being assigned to the organic group. At the same time, this criterion gives about 62 percent false negatives i.e. 62% of cases with known organic pathology show fewer than 5 of the signs. When they compared the findings obtained in their study with those of Fisher and his collaborators they found that in their group of known organics 66% were false negatives which is not significantly different from their 62%.

An evaluation of the 3 approaches will perhaps be more goal directed if it is viewed against a review of the needs of the person who uses the diagnostic technique.

The diagnostician's need is that he gets a sufficiently reliable instrument that will enable him to make a differential diagnosis. In most cases if not all he has to help make a decision with very doubtful cases which are difficult to define. No blatantly schizophrenic patients come for diagnosis. The cases who do are those where the patients have minimal or borderline schizophrenic deficits and they have to be differentiated from non-schizophrenic patients who are nevertheless manifesting

symptoms suggestive of schizophrenia.

With these aims in mind when one views the pathognomonic approach one is confronted by its inadequacy. Since the pathognomonic signs rarely ever appear with even un= equivocal cases their utility is limited.

The signs approach has done a lot towards establish= ing which signs appear most in schizophrenia but the diagnostician who has to apply the Rorschach has to consider every sign in the context of the whole Gestalt to be able to perceive the interrelationships that help him to come to a diagnostic conclusion. The comparative studies that came up with the signs do not provide guiding cut off points although these would not prove of much value, anyway.

The systems approach on the other hand could have pro= mising results if extensive cross validation studies could be made. The shrinkage that happens with cross validation however forever threatens a stumbling block, apart from the ever present problem of false positives and false negatives. These factors are nothing compared with the fact of diagnostic utility in the practical setting. The clinician cannot rely on a method that will be used with "certain cases who fulfill 'certain' require= ments.

Finally Goldfried et al point to the emergence of another approach which could be considered promising. This is the conceptual approach. The conceptual approach they maintain requires the investigator to specify the de= fining personality characteristics of the condition to be diagnosed before attempting to develop any set of Rorschach indicators. After this the investigator can then determine what aspect of the Rorschach best reflects these characteristics. They maintain that if the conceptuali= zation is relatively close to behaviour it would seem most likely that the Rorschach can be of use in identifying the syndrome. Finally they maintain that although this seems to be a relatively promising approach attempts to apply this method have been excessively laborious and un= reliable.

Where this particular undertaking fits in with the course of the research that has been done will be delineated partly as the subject of the next chapter.

CHAPTER 4

AIM AND RESEARCH OBJECTIVES

Clinical Psychology is still in the process of establishing itself as a field in this country and the practice of clinical psychology among Africans is then understandably a new and develop=ing field. Hence it is appropriate that the Clinical Psychology student should conduct basic research in psychodiagnostics in which African subjects are used.

Research that has been done in the past has followed the 3 courses of the pathognomonic approach, the sign approach and the systems approach and finally the con=ceptual approach suggested by Goldfried et al.

The strange situation of doing basic research at this time in a culture where there are no basic Rorschach studies that are clinical studies of African schizo=phrenics will make the placing of this investigation in the continuum of the development of Rorschach re=search difficult. Like most things that are African then it is a mixture of a basic pioneer study and the results of the progress of another time context.

At the end of Chapter one it has been intimated that this study has been undertaken with a preconceived idea of schizophrenia which is a disorder characteriz=ed by gross distortions of reality the disorganization and fragmentation of perception, thought and emotion and withdrawal from social interaction.

It is the aim of this study then to test out by means of the Rorschach the existance of these with Schizophrenic Nguni female subjects. In this sense it is consistent with the conceptual approach proposed by Goldfried.

Since this is a comparative study in which selected signs will be used in groups to test out hypotheses re=lating to symptoms of the schizophrenic condition this project can then be said to mark the development of the

sign approach into a syndromatic approach.

The hypotheses that have been formulated then are these:-

1. The experimental group will differ from the control group in the existence of a thought disorder

2. The experimental group will differ from the control group in the existence of an emotional disturbance

3. The experimental group will differ from the control group in the existence of a dis= turbance in interpersonal relationships.

From now then the schizophrenic group will be re= ferred to as the experimental group and the normal as the control group.

C H A P T E R 5

RESEARCH METHOD

THE SELECTION OF SAMPLES

SOURCES OF TESTEES

The experimental group was selected from the Madadeni Psychiatric Hospital in Newcastle and the Fort Napier Psychiatric Hospital in Pietermaritzburg. The control group was selected from the Edendale Hospitals which include the Edendale General Hospital, the Kwa-Hlengabantu and the S.A.N.T.A. Hospitals.

THE SELECTION OF SAMPLES

The selection of samples was done in two stages.

STAGE I

The two groups were all African female subjects who were equated for ethnic grouping. Only Nguni subjects were selected. The Xhosa and the Zulu groups belong to the Nguni ethnic grouping. Apart from cultural homogeneity the selection of a Nguni group was done to facilitate fluency of communication in languages the tester and subjects would be proficient in.

The samples were also equated for sex. Only female subjects were used. This was to eliminate the need for elaborate introductory discussions that would be necessary in the case of a male sample. That the tester is female would introduce certain taboos that would block the verbalization of certain responses. This would be problematic and more time than would reasonably be available to create a taboo-free setting would be necessary especially with the normal group. It was therefore considered economic in terms of time to use female samples.

The question of age was also considered and the age was

put at between 20 and 50 years. The minimum age was fixed at 20 because it is more or less at this stage that schizophrenia usually starts. The maximum was fixed at 50 because it was anticipated that beyond this age senility and old age factors would introduce variables that were not intended to be dealt with in this study.

Only subjects who had gone to school were selected. This was done to ensure that they would be acquainted with paper and pencil work. Apart from this it was assumed that having gone to school they would be used to a situation of being expected to cooperate in a setting requiring performance of tasks whose end is not altogether fully understandable.

METHOD OF SELECTION

1. THE EXPERIMENTAL GROUP

The experimental group was selected from the hospital registers of patients. Certain factors were considered in the Register. All the subjects had to be diagnosed by a psychiatrist as schizophrenic. All subjects who were schizophrenic State's President Decision patients were excluded. These are patients who had committed certain crimes ranging from thefts to murders who had been assigned to the hospital because they had been found to be mentally disordered, when they committed the acts. It was considered advisable to exclude these subjects be= cause of the unknown effects the variable of their acts would have on the research data.

After perusing the registers the files of the patients were used to check on the diagnosis and other factors.

following were included:

is

ization

s

ersonal relationships

8. Hallucinations
9. EEG Records
10. Discontinuation of E.C.T.
11. Medication
12. Physical ailments.

Checking the diagnosis was necessary to exclude all those cases where there was lack of agreement between psychiatrists about the nosological classi= fication of the patient. The patients selected were those where the diagnosis was consistently schizophrenia. This check was also necessitated by the fact that changes in diagnosis were not immediately reflected in the register.

It was also noted that the discrimination between paranoid, hebephrenic, catatonic, process, reactive etc. was not generally used. It was therefore not found fruitful to attempt to use any particular category of schizophrenics.

The age and educational status of the patients was mostly found in the files. There were a number of patients whose educational status was not recorded in the files and had to be checked with the patients themselves. Some patients who had had no schooling stated they had gone to school. It was then necessary to make the patients sign their names to see whether they had received any schooling.

The problem of their believing they had gone to school however was not as prominent as that of patients who had gone to school but said they had had no schooling meaning they had so little that it was nothing to boast about. It some= times transpired that such a patient had gone up to Standard 3 or 4.

Duration of hospitalization and number of admissions was checked in the files to exclude all patients who had spent less than a year in the hospital. Those who had spent less than a year but had been readmitted were selected.

This was necessary to check because of the uncertainty surrounding the diagnosis of schizophrenia. Practical ex= perience with patients reveals that the diagnosis sometimes has to be revised because of the schizophrenic-like states

that get into the hospital and are effectively dealt with by improving the diet only, without any antipsychotic medication. A differential diagnosis between schizophrenia and toxic exhaustive psychosis is facilitated by observing the patient over a period of time in hospital.

The tester interested herself in collecting the extra data of thought disorder, disturbed interpersonal relationships and hallucinations in an attempt to understand the criteria used to arrive at the diagnosis. Although this did not form part of the research design it may provide part of the background for interpreting test results.

Unfortunately due to the shortage of staff and the overwhelming amount of work in these hospitals the EEG was not found to be as frequently used as the tester had expected in making a differential diagnosis between the functional and the organic psychoses. It can therefore not be said that these patients had either normal or abnormal EEG readings. This method of selection was thus not used.

Discontinuation of ECT was investigated in the files because of the temporary disturbances experienced as a result of ECT. Patients who were still on the treatment were excluded. Those who had not finished at least 4 weeks after the last E.C.T. were also excluded.

Medication was noted together with physical ailments. All patients who were suffering from physical conditions apart from the schizophrenia were excluded. Medication had to be checked because sometimes due to pressure of work and other factors it was found that the physical condition would not be recorded and indication of the existence of a physical condition would be found in the doctor's prescription of the medication.

The patients who were selected then were all on phenothiazines. Some of the patients were also on vitamin C which is routinely given to facilitate metabolism especially in the case of Madadeni patients. This was not

considered as a factor which would adversely in= fluence patients' responses.

11. THE CONTROL GROUP

The control group was chosen from the cleaners of the Edendale Hospitals. This was to ensure that they were a homogeneous group. These subjects had all been examined at the hospital to exclude the existence of any physical or mental condition that they could be suffering from.

The above was not considered sufficient because in such examinations prospective employees hide their disturbances effectively from their employers.

The tester was able by means of a questionnaire (See Appendix 1) to exclude subjects who suffered from physical conditions such as diabetes and high blood pressure. Subjects who suffered from "nerves" were also excluded.

All subjects who did not deal with the natural belief in witchcraft and bewitchment in accepted and adequate culturally prescribed ways were excluded from the sample for fear of including people with paranoid conditions.

Subjects who maintained they drank liquor during week-days or every week-end were excluded. Only subjects who did not drink at all and a few who did drink beer occasionally when there were parties and at Christmas were included. This was to guard against including alcoholics and heavy drinkers into this sample.

Dagga and drug users were also excluded.

It was also found necessary to exclude several subjects who maintained that they had had "ukurayiza" and "ufufunyana" episodes. These are hysterical and psychotic conditions that are frequently effectively treated by "izangoma" (traditional medicine-man).

Two subjects were excluded as a result of finding that they were ex-patients of the Town Hill Hospital which is

a psychiatric hospital in Pietermaritzburg. Only one subject admitted to epileptic seizures experienced at night which she logically hid from the authorities to be able to get and hold her job. She was tactfully excluded also.

OTHER METHODS

The investigator did consider equating the subjects for IQ and also excluding subjects who showed any organicity. The Progressive Matrices and the Bender Gestalt were used. However because of lack of validation on African subjects it was considered unwise to use these test results. The subjects were then equated for age and schooling only.

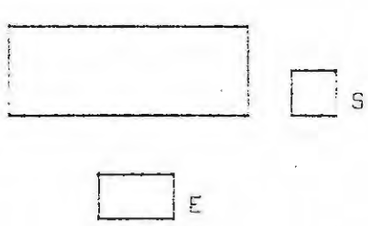
ADMINISTRATION

SETTING

All subjects in the experimental group were examined in a hospital room which had the minimum of distracting furnishing. A table and two chairs was all that was ever necessary in the rooms. There was no other furniture except a locker and a bed or couch.

The subjects in the control group were examined in the duty rooms and nurses' offices in the hospitals. These were rooms that were not used at those times at which testing was done. A table and two chairs were always available.

For all subjects in the experimental and in the control group the examiner and the subject were seated in a table with the subject always on the right hand side of the examiner.



PREPARATION FOR EXAMINATION

The preparation for the examination was naturally different for the two samples.

THE EXPERIMENTAL GROUP

The experimental group was the easier of the two groups to introduce the testing matter to. These subjects were used to investigations being made on their thoughts and personal affairs because of their interaction with nurses, doctors and social workers who took their case histories and made progress notes. It was therefore in this sense easier to introduce the testing to them by simply making a few introductory remarks. The examiner introduced herself as a person trying to investigate how the hospital could best help the patient if she needed help at all.

It was not considered wise to introduce myself as an outsider in this setting as my role would confuse the patients and arouse suspicion especially in the case of the Madadeni patients who had never come into contact with any psychologist and would fail to understand fully even when this was explained to them as they had no equivalent in their past as a source of reference. The patients then related to the investigator as if she were a hybrid between a doctor and a nurse which was quite a comfortable working situation for all concerned.

The subjects were made aware of the importance of their cooperation for the tester to be able to find out exactly how the subjects could be helped. They were also told that to be able to give them help it was necessary to know how they "saw" things. It was stressed that different people saw things differently and it would be through knowing how the particular person saw things that the hospital could help the person. The subject was then made to relax by being told that in the tasks that she was to perform there would be no right or wrong answers but reflections of how she saw things.

This was all that was necessary for the patient to assume a favourable posture to the rest of the process of creating rapport.

The fact that this was the easier of the two groups to introduce the matter to however, does not mean this was the easier group to create rapport with.

THE CONTROL GROUP

The control group on the other hand needed no help and was naturally suspicious. It was therefore necessary to reassure this group about the harmless nature of the investigation in the sense that this would not affect their work situation adversely.

When the group was told that in actual fact its help was required because the investigator, who worked at the Fort Napier Hospital which is well known to the group, wanted to know how they saw things as normal people, the group was well motivated and enjoyed performing the tasks. It was also stated even with this group that there were individual differences in the way people saw things and that there were no correct and incorrect answers. The tester was interested in what the particular individual would 'see'

RAPPORT

The question of rapport had to be attended to especially in the case of the experimental group. Before testing it was necessary to have a rapport - establishing interview with the members of this group. To make sure that this would be as consistent as was humanly possible a structured interview was used and information elicited and recorded from the patient.

INTERVIEW

Name
Home
Clan name/Ethnic grouping
Cause of hospitalization

Any complaints at present
Hallucinations
Delusions

The name, home, clan name were needed for purposes of establishing ethnic grouping. However they were also used for creating rapport for these are questions that give the subject a sense of being recognized as a unique individual with a unique identity. Patients also do not have enough time to talk about their ideas about the cause of their hospitalization and their symptoms. By letting them speak about these it was hoped that the investigator's keen interest would help to establish rapport. Apart from that interest in these factors was also used to help the patients accept the tester as part of the establishment of people who are interested in the patients' health and welfare.

It was not considered necessary to go into any elaborate schemes to ensure that rapport had been created with the control group. The questionnaire discussed under Method of Selection was considered sufficient.

INSTRUCTIONS

These were the instructions used for the Rorschach technique.

> "We will now work with 10 cards. I will give you one card at a time and you will look at it carefully and then tell me what the thing you see is or what it looks like. After you have told me everything you will re= turn the card and we will pro= ceed to the next one until we have finished our task."

The fact that it had been stated earlier that there were no correct or incorrect answers and that interest only lay in the individual's responses helped to relax the subjects.

STAGE 2

It was considered necessary to match the two groups on two known areas i.e. age and schooling.

When the two samples were matched for age and schooling the number dropped from 93 to 60. There were 30 subjects in the experimental group and 30 in the control group as well. It is the results obtained from these 60 subjects then that will be used for Chapter 6 which is the analysis of results.

THE HYPOTHESES AND STATISTICAL METHOD

Before an analysis of the hypotheses and statistical method can be made it is essential to clarify a few points. Scrutiny into Rorschach literature reveals that different investigators use the test in different ways and interpret it according to widely differing principles. Rorschach himself when dealing with the scoring system indicated quite explicitly that the same score could be interpreted in different ways considering the context and the Gestalt. Further he showed the occurrance of the individual score in several nosological groups.

Below then will be a statement of the hypotheses and a discussion of the factors that were used to test the hypotheses. This in no way is an indication of the way or the only way in which these factors are under= stood to operate. Statement of the interpretative values adopted for this study then will be dealt with.

A. THE HYPOTHESES

The hypotheses will be stated and how the Rorschach will be used to test these hypotheses will be discussed at this juncture.

HYPOTHESIS I

The experimental group will differ from the control group in the existence of a thought disturbance.

There were twelve factors that were used to test this hypothesis.

1. REACTION TIME

The experimental group would have a shorter reaction time than the control group.

When faced by a new unknown situation the well adjusted individual will take some time to evaluate what he is faced with and try to make a reasonably rational response. Contrary to this the person who as a result of inner anxiety in him suffers from pressure of thought, will not stop to ponder over how best to deal with such a situation and will rush on in an impulsive fashion. Thus Phillips and Smith (1971 p.196) maintain that the short reaction time is characteristic of immature and impulsive persons who lack foresight or planning ability and typically are passive and suggestible.

The reaction time in schizophrenic subjects according to Rorschach is notably shorter than in all other groups, including normals. Some scattered schizophrenics find 4 or more interpretations for the same picture in perhaps 5 seconds. Bochner and Halpern (1945 p.234) point to the significance of the reaction time in schizophrenia. They maintain that some records of organics are very much like certain schizophrenic records. Sometimes such records can be differentiated on the basis of reaction time primarily. The organic often takes much longer than the schizophrenic to make his interpretations and there are likely to be long delays between his responses.

Thus for purposes of this study the experimental group is expected to have a shorter reaction time than the control group as an indication of its thought disturbance.

2. RESPONSES

The experimental group would have less responses than the control group.

Responses refers to the total number of answers that the subject gives to the cards. Interpre= tation of responses depends on the quality of the responses whether they are good or poor responses.

Bochner and Halpern (1945 p.72) elaborating on the significance of number of responses state that a small number of responses may appear in records of intelligent well adjusted normals who put their emphasis on quality and are satisfied with one or two good productions on each card. On the other hand, a low number of responses may also represent blocking, constriction, paucity of ideas, lack of cooperation or outright negativism.

Since the schizophrenic disturbance of thought is characterised by blocking and ideational poverty it was then hypothesized that the experimental group would have less responses than the control group.

3. W-

The experimental group would have more W- responses than the control group.

4. W+

The experimental group would have less W+ responses than the control group.

W corresponds in general to the ability to grasp the larger unit and has a relation therefore to the theoretical intelligence as well as to systematic thinking. The person who is capable of producing a fair number of W+ is then characterised by the ability for logical and abstract thought.

Bohm points out that not all W+ responses are evidence of an especial theoretical endowment. When they are mostly or as often happens, all P the subject is capable of grasping only the most ordinary concepts. In a more positive sense then W+P may be considered the ex= pression of common sense.

Poor whole responses, that is whole responses that are scored F- are indicative of superficiality, of thought and unwillingness to exercise the critical faculty.

The schizophrenic group was expected to have a limited ability to encompass the entire situation and to deal with it logically. An impaired capacity for abstract thought would also be characteristic of this group. Hence it would have less W+ and more W- responses.

5. F+%

The experimental group's F+% will be lower than that of the control group.

The F+ response has been recognised as evidence of ability to observe accurately. Such a response can be given only if the subject possesses a good store of visual memories and can choose from these the one that best fits the blot that she is interpreting. The ability to mobilize these memories, exercise good critical ability in selecting his response, and keep his attention focused throughout is necessary to do this well. An objective attitude is also necessary at the moment when the interpretation is made.

The faculties enumerated above all point to an individual whose thought processes are fairly intact. Since the schizophrenic's thought is disturbed one would expect his F+% to be lower than that of a normal individual.

6. Dw ÷ DdD

The experimental group will have more confabulation responses than the control group.

The confabulation response denoted by DW and DdD is the kind of response where the percept is a conclusion as to the entirety based on a glance at some portion. This portion may be sharply perceived but the actual form of the rest of the blot is not carefully considered.

This kind of response is indicative of a lack of critical judgement, or wishful thinking or an attempt to force reality into line with the desired pattern. The objectivity of the individual giving this type of response is doubtful. The schizophrenics then would have more of these responses as an expression of their disturbance of thought.

7. ORIGINAL RESPONSES

The experimental group will give more O- responses than the control group.

The O responses regardless of their quality demonstrate a capacity for perceiving new relationships. Hence Bochner and Halpern maintain that the response reflects the individual's unique approach. The schizophrenic's unique approach is manifested in his misinterpretation of reality and the bizarreness of his thoughts, consequently giving more O- than normals.

8. DENIED RESPONSES

The experimental group will have more denied responses than the control group.

This is the kind of response where the subject gives a response and when the inquiry is done the subject denies having given the response. These are responses that were poorly perceived and were the result of disturbance and pressure of thought in the subject. This is also consistent with Haley's contention that the schizophrenic has a disturbance in communication which manifests itself in avoidance of defining his relationships.

9. ARBITRARY RESPONSES

The experimental group will have more

arbitrary responses than the con=
trol group.

Here according to Schafer the content of the response finds no support in the configuration of the inkblot; the percept is therefore arbitrary. This unreasonable= ness will characterise the experimental group.

10. CONTAMINATION RESPONSES

The experimental group will have more contamination responses than the con= trol group.

Contamination is defined by Wolman (1965 p.535) as the fusing of two or more different percepts, both of which pertain to the same blot area, into one unintelligible percept without the patient's being able to disentangle the resulting percept. This is indicative of a dis= order in the organisation sphere of cognition.

11. PERSEVERATION

The experimental group will have more perseveration than the control group.

This is described by Bohm as an inertia of ideational content. It is characterised by the patient's con= stantly giving the same response to most cards or when= ever she experiences difficulty in responding especially to the last 3 cards.

Perseveration indicates the existence of a difficulty in dealing with the situation and is usually due to helplessness in the face of reality which is manifested in rigidity of the thought processes.

12. REJECTED CARDS

The experimental group would have more re= jected cards than the control group.

Rejected cards are those where the subject fails to make

a response. Encouragement is futile because she is abrupt and will not be persuaded to make an interpretation. This behaviour is interpreted by Bohm as usually the result of a stupor an inhibition or blocking of the flow of thought.

HYPOTHESIS II

The experimental group will differ from the control group in the existence of an emotional disturbance.

1. CF+C>FC

The experimental group would express their emotional instability by having more CF+C than FC.

C

When a response is made on the basis of colour alone we have a pure C response. This kind of response is a direct uninhibited reaction to the stimulus without any moderating or controlling factor. Bright colour was reported by Rorschach as the most sensitive indication of affect or emotionality and pure C has been recognized as representative of impulsiveness.

CF

On the other hand with CF responses emotions are in command but some element of control as represented by the F is present. Hence Bochner and Halpern (1945 p.43) make the statement

> "The individual evidences, some desire to adapt to his environment but his intellectual control is not sufficient to effect a good adaptation - he is an egocentric person, full of demands, inclined to impulsiveness and generally susceptible to emotional stimuli."

FC

Finally here the response is primarily a form response with color being secondary. This is indicative of the emotional factor being always controlled and subordinated to consideration of mores. Mc Call in Buros (1970 p.901) points out that

> "FC responses are most common in normals and indicate the kind of emotional lability necessary to achieve environmental rapport. FC thus represents adaptive rather than egocentric affectivity and this is said to be especially true when the form is clearly visualized [FC+]".

Viewing all these aspects then it is evident that when the totals of CF and C responses markedly out= weigh the FC responses the individual is emotionally unstable.

2. Cn

> The experimental group will have more Cn responses than the control group.

When the subject just names the colors in the blot we have responses that are called colour naming. These are indications of disorganisation in the face of color stimuli. Thisdisorganization is characterised by intense feelings of helplessness which evoke the primi= tive coping mechanism of just naming the colours in= volved in the blot rather than making the expected interpretations. Klopfer and Kelley (1946 p.358) assert that:

> "Cn may be found to represent inability on the part of the patient to orient himself clearly in his relationships to the environment."

This could be said to be disorganisation in the face of emotional factors.

3. LDF + LD > FLD

The sum of LDF + LD will be greater than FLD with the experimental group.

Beck (Anderson and Anderson 1951 p.111) asserts that:

> "The painful emotions those related to anxiety, depressed attitudes, and inadequacy feelings are projected in the test in the shading-determined responses, especially those in which the varying amount of light influences the blot stimuli along the gray-black continuum."

Bohm summarises this by saying the light-dark responses are expressions of a central mood for the most part dysphoric.

FLD

These responses indicate good conscious control over mood reactions. This regulation of feelings and impulses is achieved through a process of selection rather than one of repression. On the other hand FLD responses point to an inner effort at self control and adaptivity, but one which is not always successful owing to an undifferentiated intelligence.

LDF

These are evidence of an insufficient effort at mood control. Considerable increase in LDF responses is an indication of strong dysphoric trends.

LD

Finally LD responses represent a complete lack of the ability to control mood.

Evidently then a combination of LDF and LD responses that significantly exceeds FLD indicates a personality that has limited control over its mood and is prone to plunging into moods characterised by anxiety, depression and feelings of inadequacy.

HYPOTHESIS III

The experimental group will differ from the control group in the existence of a disturbance in interpersonal relationships.

1. Hd>H.

The experimental group will have more Hd than H responses.

Human responses show an interest both in oneself and in others. To give a human response according to Bochner and Halpern denotes an ability to see and identify oneself with others.

Concentration on human detail responses on the other hand is indicative of concern with body parts as seen in hypochondriasis or may stem from aggression against people. Significant overemphasis on Hd responses over H responses marks a limited interest in other people.

2. POPULAR RESPONSES

The experimental group will have less popular responses than the control group.

Popular responses are an index to the social adaptivity of a person's thinking and of her capacity for adjustment and contact. Beck maintains that low P expresses rebellion against conventionalities or indifference to them. Thus it has been hypothesized here that the experimental group will have less popular responses as an expression of the limited social adaptivity of their thinking, capacity for adjustment and contact and re-

bellion against conventionalities.

3. Dd

The experimental group will have more Dd responses than the control group.

This is another index of contact and is usually characteristic of individuals whose social contact is either reduced or impaired. Phillips and Smith (1971 p.14-15) comment thus on Dd:-

> "It is characteristic of persons who are described as cold and reserved rather than warm and spontaneous."

Concentration on Dd responses has also been associated with a defiant, critical nature although the aggression involved does not link itself to major causes.

4. W+Dd + S>D.

The sum of W and Dd and S will be greater than D in the experimental group.

D

The large detail (D) response is another contact factor. The higher the D responses the better the contact. These responses are indicative of the practical person, one who uses common sense in his dealings with other people and one who recognizes the problems of everyday life.

S

The S response has been found to be an index of oppositional tendencies. Beck maintains that it represents a projection of resistiveness, the more S the more stubborn or negativistic the individual.

Dd

The Dd has already been discussed as an index of the critical querrulous individual.

W

In the profile of the well adjusted individual the number of W responses is usually less than that of D. Overemphasis on W indicates people who are intellectually ambitious and tend to use intellectual defenses.

Thus the preponderance of w+Dd+S over D suggests interpersonal relationships that are characterized by a critical, negativistic, ambitious personality who has limited ability to empathise and have contact with his fellowwomen.

(H)

The experimental group will have more (H) responses than the control group.

The special human (H) responses are responses involving such figures as ghosts, dwarfs, giants, angels, witches etc. These responses represent an immature, childlike, or wishful way of thinking. A preponderance of these responses reflects, apart from immaturity, a nonrealistic possibly superstitious trend.

STATISTICAL METHOD

The statistics used for this project are mainly non-parametric statistics. This is so because it cannot be claimed that the samples were chosen on representativeness or in any particular manner e.g. testing every 10th schizophrenic in the country. On the contrary they were selected on availability and willingness to be examined.

Non-parametric statistics have been used also because of the qualitative nature of Rorschach research data.

A test for normality (Kurtosis) was also used to test for skewness and since there was skewness non-parametric statistics were chosen.

There are 4 tests that were used for the Rorschach research data

1. The Mann - Whitney - U
2. The Wilcoxon
3. X^2
4. and a test of Discriminant Function.

When comparison was made between two independent samples e.g. testing the difference in reaction time between the experimental group and the control group the Mann - Whitney - U test was the one found to be appropriate and used.

In the case of factors like CF + C>FC, LDF + LD>FLD, Hd>H and W+Dd+S>D use was made of comparison between related samples and the Wilcoxon matched pairs signed ranks test was used.

The X^2 test was used with independent samples where the size of the data was relatively small. The formula adopted for X^2 was:-

$$X^2 = \frac{N\left(|AD - BC| - \frac{N}{2}\right)^2}{(A+B)(C+D)(A+C)(B+D)}$$

This formula contains a correction relevant especially when N<40 (Maxwell 1970 p.77)

Finally when all the tests had been performed certain factors were selected for the test of discriminant function which is a procedure for estimating the position of an individual on a line that best separates classes or groups. For this test all the test data were used except the categories whose data were relatively small on which the X^2 test had been used. These data were so small and insignificant that it was not considered a worthy exercise including them in the test of discriminant function as factors which would

help in discriminating between the experimental and the control groups. The factors that were selected for the discriminant function were:-

1. Reaction time (natural logarithm)
2. Responses " "
3. W-
4. W+
5. F+%
6. H_2
7. H_3

$$\left(\frac{(CF+C-FC)}{S_{(CF+C-FC)}} + \frac{(LDF+LD-FLD)}{S_{(LDF+LD-FLD)}} \right) = H_2$$

$$\left(\frac{(Hd-H)}{S_{(Hd-H)}} - \frac{P}{S_P} + \frac{Dd}{S_{Dd}} + \frac{(w+Dd+S-D}{S_{(w+Dd+S-D)}} \right) = H_3$$

(See Appendix 21)

CHAPTER 6

ANALYSIS OF RESULTS

The analysis of results will be done in two parts. We will start with analysis as to the composition of the two samples. Secondly we will deal with the general analysis of test results.

A. COMPOSITION OF THE GROUPS

The two samples are composed of 30 in the experimental (patient) group, and 30 in the control (normal) group. These two groups were equated for schooling and age as will be shown below.

AGE

TABLE I (SEE APPENDIX 2)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	34.93	38.56
RANGE	21-46	21-49
STANDARD DEVIATION	7.16	8.18

The mean ages of the two samples were found to be 34.93 for the experimental group and 38.56 for the control group. These two were considered not significantly different. The standard deviations of 7.1628 for the experimental group and 8.1819 for the control group do not differ markedly and this could be considered negligible. It was therefore considered that the two groups were successfully equated for age.

SCHOOLING

TABLE 2 (SEE APPENDIX 3)

YEARS OF SCHOOLING

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	5.56	6.23
RANGE	3-10	2-9
STANDARD DEVIATION	1.90	1.94

The mean years of schooling for the experimental and control groups were 5.56 and 6.23 respectively. These were not found to be significantly different. The difference between standard deviation for the experimental group, 1.90 and for the control group 1.94 was negligible. It was therefore considered that the two groups were successfully equated for years of schooling.

B. GENERAL ANALYSIS OF TEST RESULTS

HYPOTHESIS I

The experimental group will differ from the control group in the existence of a thought disturbance.

SIGN I. REACTION TIME

TABLE 3 (SEE APPENDIX 4)

REACTION TIME IN SECONDS

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	138.26	318.80
STANDARD DEVIATION	195.99	204.4318

U = 16.0

Z = 4.29

P = .00003

= $p < .01$

The Null hypothesis H_0 that there would be no difference between the two groups in reaction time was formulated. The alternative hypothesis H_1 was that the reaction time of the experimental group would be shorter than that of the control group. It is shown in Table 3 that the Mann - Whitney - U test probability value was .00003. This value is statistically significant below the 5 per= cent level which means the Null hypothesis could be re= jected. It may be concluded then that the reaction time with the experimental group is significantly shorter than that of the control group.

SIGN 2 RESPONSES

TABLE 4 (SEE APPENDIX 5)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	17.50	16.53
STANDARD DEVIATION	11.4191	8.4720

U = 445.0

Z = 0.07

p = .4721

N.S.

As Table 4 shows the Null hypothesis that there would be no difference between the experimental and the control group regarding number of responses cannot ba rejected. The control group has tended to negate the hypothesis for it has less response than the experimental group.

The conclusion here therefore is that the hypothesis that the experimental group would have a less number of responses than the control group is not supported by the findings of the Mann - Whitney - U test whose p value is .4721 which shows there was no signifi= cant difference between the two groups in number of responses.

SIGN 3 W-

TABLE 5 (SEE APPENDIX 6)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	4.23	2.63
STANDARD DEVIATION	2.59	1.84

U = 284.5
Z = 2.45
p = .0071
= $p < .05$

Here the Null hypothesis H_o was that there would be no difference in W- between the experimental and control groups. The results of the Mann - Whitney - U test show a probability value of .0071 which is significant at the 1 percent level according to Table 5.

The Null hypothesis may be safely rejected and the alternative hypothesis that the experimental group has more W- than the control can be accepted.

SIGN 4 W+

TABLE 6 (SEE APPENDIX 7)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	2.13	2.43
STANDARD DEVIATION	1.13	1.56

U = 4020
Z = 0.71
p = .2389
N.S.

Table 6 shows that the Mann - Whitney - U test probability value was .2389. This value is not statistically significant. This means H_o that there is no difference between the experimental and control group regarding W+ cannot be rejected.

The data however tend to support the hypothesis that the experimental group has less W+ than the control group.

It may be concluded then that the hypothesis that the experimental group would have less W+ re= sponses than the control group is not supported.

SIGN 5 F+%

TABLE 7 (SEE APPENDIX 8)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	41.50	54.63
STANDARD DEVIATION	20.55	20.60

U = 297.0

Z = 2.26

p = .0119

= $p < .05$

The Null hypothesis H_0 here was that there would be no difference between the two groups in F+%. The alternative hypothesis H_1 was that the experimental group would have a lower F+ percentage than the control group.

As Table 7 shows the probability value of the Mann - Whitney - U test here is .0119 which is statistically significant below the fifth percent level of significance.

The Null hypothesis can then be rejected and the conclusion made that there is a significant difference between the two groups and that indeed the experimental group has a lower F+% than the control group.

SIGN 6 DW + DdD

TABLE 8 (SEE APPENDIX 9)

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	16	16

$X^2 = .00$ (df = 1)

N.S.

As Table 8 shows the totals for the two groups were the same and X^2 was therefore .00. The Null hypothesis that there is no difference between the two groups in DW + DdD responses cannot be rejected. The alternative hypothesis that the experimental group would have more DW + DdD may be rejected.

SIGN 7 ORIGINAL -

TABLE 9

L

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	3	2

$$X^2 = .00 \quad (df = 1)$$

N.S.

The Null hypothesis H_o that there are no differences between the two groups in O- responses cannot be rejected. The statistically insignificant probability value of .00 was found. Therefore the H_1 that the experimental group would give more O- responses than the control group cannot be accepted. The data however tend to support the H_1.

SIGN 8 DENIED RESPONSES

TABLE 10

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	5	2

$$X^2 = .06$$

N.S.

H_o here was that there would be no difference between the two groups in Denied Responses. The alternative hypothesis H_1 was that the experimental group would have more denied responses than the control group. Table 10 showing the X^2 value of .06 which is a

statistically insignificant value, the H_o cannot be rejected and H_1 cannot be accepted.

The conclusion is that there is no significant difference between the experimental and the control group's denied responses. The data however tend to support the hypothesis that the experimental group would have more denied responses although they do not reach statistical significance.

SIGN 9 ARBITRARY RESPONSES

TABLE 11

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	1	2

$$X^2 = .00 \quad (DF = 1)$$

The alternative hypothesis H_1 was that the experimental group would have more arbitrary responses than the control.

The Null hypothesis H_o was that there would be no difference between the two groups in Arbitrary Responses.

The results in Table 11 show that the statistically insignificant value of .00 was found which means the Null hypothesis cannot be rejected. The data tend to negate the H_1 because the control group has more arbitrary responses although this is not significantly so.

SIGN 10 CONTAMINATION RESPONSES

TABLE 12

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	2	2

$$X^2 = .00 \quad (df = 1)$$

N.S.

The Null hypothesis that there would be no differences between the two groups in contamination responses could not be rejected. The two groups gave an equal number resulting in a statistically insignificant value of .00. The alternative hypothesis that the experimental group could have more contamination re= sponses than the control group may not be accepted.

SIGN 11 PERSEVERATION

TABLE 13

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	12	6

$$X^2 = 1.98 \quad (df = 1)$$

N.S.

Table 13 shows that the X^2 value was 1.98. This is not statistically significant. The hypothesis that the experimental group would have more perseveration than the control group may not be accepted. The Null hypothesis that there would be no difference between the two groups in perseveration cannot be rejected. It is however true that the data do suggest a tendency to support the alternative hypothesis although this does not reach statistical significance.

A conclusion may be drawn therefore that the hypothesis that the experimental group would have more perseveration

responses than the control group tends to be supported by the data although statistical significance is not reached.

SIGN 12 REJECTED CARDS

TABLE 14 (SEE APPENDIX 10)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	0.63	0.46
STANDARD DEVIATION	0.96	0.97

U = 401.5
Z = 0.72
p = .2358
N.S.

The Null hypothesis H_o was that there would be no difference between the experimental and the control group in rejected cards. The alternative hypothesis H_1 was that the experimental group would have more rejected cards than the control group.

Table 14 indicates that the Mann - Whitney - U test probability value was .2358 which is statistically insignificant. Thus the Null hypothesis may not be rejected.

In conclusion it may be stated that the hypothesis that the experimental group would have more rejected cards may not be accepted although the data tend to support the hypothesis. They however do not reach statistical significance.

HYPOTHESIS II

The experimental group will differ from the control group in the exist= of an emotional disturbance.

SIGN I CF+C > FC

TABLE 15 (A) (SEE APPENDIX 12)

EXPERIMENTAL GROUP

	MEAN	STANDARD DEVIATION
CF+C	1.46	2.44
FC	1.26	4.05

Z = 1.38
p = .0838
N.S.

TABLE 15 (B) (SEE APPENDIX 11)

CONTROL GROUP

	MEAN	STANDARD DEVIATION
CF+C	0.63	1.35
FC	0.43	0.81

Z = 0.569
p = .2877
N.S.

The Null hypothesis was formulated here that there would be no difference between Sum CF+C and FC with the two groups. The alternative hypothesis H_1 was that with the experimental group sum CF+C would be greater than FC and that with the control group FC would be greater than CF+C.

The Wilcoxon probability values are .0838 and .2877 for the experimental group and the control group respectively. These values are not statistically significant.

It is however significant to note that whereas with the experimental group the data tend to support the hypothesis although they do not reach statistical significance, with the control group the data negate H_1 because even here sum CF+C tends to be greater than FC although not statistically significantly.

SIGN 2 Cn

TABLE 16

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTALS	3	1

$$X^2 = .02 \quad (df = 1)$$

The Null hypothesis H_0 here was that there would be no difference in Cn between the experimental and the control group. The alternative hypothesis H_1 was that the experimental group would give more Cn than the control group.

The X^2 probability value was .02 which is statistically not significant which meant we could not reject the Null Hypothesis.

The data however tend to support the alternative hypothesis although statistical significance is not achieved.

SIGN 3 LDF + LD>FLD

TABLE 17 (A) (SEE APPENDIX 13)

EXPERIMENTAL GROUP

	MEAN	STANDARD DEVIATION
LDF + LD	0.76	1.73
FLD	0.06	0.25

Z = -2.578
p = .0051
= p <.01

TABLE 17 (B) (SEE APPENDIX 14)

CONTROL GROUP

	MEAN	STANDARD DEVIATION
LDF + LD	0.33	0.75
FLD	0.33	0.71

Z = -0.035
p = .4880
N.S.

The Null hypothesis H_o was formulated as - there would be no difference in sum LDF+LD and FLD in both groups. The alternative hypothesis however was that with the experimental group sum of LDF + LD would be greater than FLD and with the control group FLD would be greater than sum of LDF + LD.

As Table 17(a) shows the Wilcoxon probability value is .0051 and this is statistically significant at the one percent level of significance. The Null hypothesis can then be rejected and the alternative hypothesis that the experimental group has more sum LDF + LD than FLD can be accepted.

On the other hand Table 17 (b) shows the Wilcoxon probability value of .4880 which is not significant statistically which means the Null hypothesis cannot be rejected. The means for sum LDF + LD and FLD are the same. H_1 can thus not be accepted.

HYPOTHESIS III

The experimental group will differ from the control group in the existence of an emotional disturbance.

SIGN 1 Hd > H

TABLE 18 (A) (SEE APPENDIX 15)

EXPERIMENTAL GROUP

	MEAN	STANDARD DEVIATION
Hd	1.133	4.19
H	0.83	1.28

Z = -3.336

p = .0005

= p < .001

TABLE 18 (B) (SEE APPENDIX 16)

CONTROL GROUP

	MEAN	STANDARD DEVIATION
Hd	2.53	2.37
H	0.80	1.12

Z = -0.909

p = .1841

N.S.

The Null hypothesis H_o was that there would be no difference between Hd and H both with the experimental and the control group. The alternative hypothesis H_1 was that with the experimental group Hd would be more than H whereas with the control group H would be more than Hd.

Tables 18 (A) and (B) show that the Wilcoxon probability values for the experimental and the control group are .0005 and .1841 respectively.

With the experimental group therefore the Null Hypothesis may be rejected at the one percent confidence level. Thus the hypothesis that with the experimental group Hd is greater than H may be accepted.

With the control group the Null Hypothesis cannot be rejected. Apart from this the data tend to negate H_1 because Hd is greater than H although not statistically significantly.

SIGN 2 POPULAR RESPONSES

TABLE 19 (SEE APPENDIX 17)

	EXPERIMENTAL GROUP	CONTROL GROUP
MEAN	41.50	54.63
STANDARD DEVIATION	20.55	20.60

U = 421.5
Z = 0.42
p = .3372
N.S.

Table 19 indicates that the Mann - Whitney - U test probability value is .3372. This is not statistically significant.

The Null Hypothesis that there is no difference be= tween the experimental and control group in popular responses cannot be rejected. The alternative hypothesis that the experimental group would have less popular responses cannot be accepted. The data any= way do support H_1 although statistical significance has not been achieved.

SIGN 3 Dd

TABLE 20 (SEE APPENDIX 18)

	EXPERIMENTAL GROUP	CONTROL GROUP
	1.03	0.80
STANDARD DEVIATION	0.3051	1.37

U = 409.0
Z = 0.61
p = .2709
N.S.

The Null Hypothesis was that there would be no difference in Dd with the two groups. H_1 was that the experimental group would have more Dd than the control group.

The Mann - Whitney - U test probability value was .2709 and it is not statistically significant. This means the Null hypothesis may not be rejected. It is however significant to note that here too the data tend to confirm H_1 although statistical significance is not achieved.

SIGN 4 W+Dd+S>D

TABLE 21 (A) (SEE APPENDIX 19)

EXPERIMENTAL GROUP

	MEAN	STANDARD DEVIATION
W+Dd+S	7.66	3.63
D	8.56	9.08

Z = -0.305
p = .3821
N.S.

TABLE 21 (B) (SEE APPENDIX 20)

CONTROL GROUP

	MEAN	STANDARD DEVIATION
W+Dd+S	6.30	2.52
D	8.86	7.38

Z = 1.524

p = .0643

N.S.

H_o was that the sum of W+Dd+S would not differ from D in the experimental and control groups. H_1 however was that the sum of W+D+S would be greater than D in the experimental group and D would be greater than the sum of W+Dd+S in the control group.

The Wilcoxon test probability values for the experimental and control groups are .3821 and .643 respectively. These are not statistically significant. Thus the Null hypothesis may not be rejected and H_1 may not be accepted.

The data in the control group tend to negate H_1 for in actual fact D is greater than the sum of W+Dd+S. Those for the control group tend to support the hypothesis.

SIGN 5 (H) TABLE 22

	EXPERIMENTAL GROUP	CONTROL GROUP
TOTAL	2	1

X^2 = .00 (df = 1)

Table 22 shows the X^2 value as the statistically non significant .00. The Null hypothesis that the two groups do not differ in number of (H) responses cannot be rejected. And the alternative hypothesis that (H) is more with the experimental group than the control group may not be accepted.

Although statistical significance is here also not achieved the data tend to support H_1.

DISCRIMINATORY ANALYSIS

TABLE 23 (SEE APPENDIX 21)

HITS AND MISSES TABLE

	ACTUAL GROUP NAME	
FORECAST GROUP NAME	CONTROL GROUP	EXPERIMENTAL GROUP
CONTROL GROUP	24	4
EXPERIMENTAL GROUP	6	26

According to Table 23 the test of Discriminant Function using the factors described in the previous chapter has identified 24 members of the control group and misclassified 4 and identified 26 members of the experimental group and misclassified 6.

The hypothesis may be posed therefore that the factors of the discriminant function used here have reasonable success in classifying schizophrenics and non-schizophrenics.

CHAPTER 7

DISCUSSION OF RESULTS AND CONCLUSIONS

A discussion of results and the making of conclusions can possibly be meaningful if certain factors concern= ing the nature of the samples are pointed out at this juncture.

Concerning the experimental group it will be noted that these subjects had gone past the acute phase into a chronic stage. The expectation of the blunting of symptoms can thus not be avoided.

These patients had undergone treatment with phenothiazines the effect of which is known to alleviate the more florid symptoms of psychosis. The extent of the improvement they had attained with hospitalization is demonstrated by the fact of their ability to undergo the rigorous ex= ercise of maintaining their interest through the per= formance of 3 tasks that is, the Bender Gestalt test, the Progressive Matrices and lastly the Rorschach. A number of the less effectively treated cases either refused under= going the examination or lost interest and dropped out during the various stages of the assessment. It cannot be denied then that this was a special sample.

Finally the effect of living in a sheltered environment should one think of the hypothesis of the relationship of the etiology of this condition with disturbed family relationships which are anxiety provoking, cannot be underestimated.

Turning to the control group it will be worthwhile to re= mind ourselves about the socio-economic status of this sample. These were Nguni women who were working as cleaners in the Edendale hospitals. Firstly then there is the question of their being - in - the - world as women in the Nguni community and secondly their experience as cleaners. These two demand the realization of a life of subservience characterised in most cases by passive obedience.

The Nguni society is essentially a patrichal society where women have to accept the leadership of men in almost every sphere of their lives. In addition to this there is the observance of customs which to a great extent determine the lives of these people to be characterised by a measure of guarded, passive conformism. The individual's freedom is limited and individualistic independent free emotional ex= pression is something that is not graciously en= couraged. The emphasis then is on doing the proper thing at the appropriate time.

The matter is further aggravated by the work situation. The work of a cleaner requires that the person works routinely, passivity is almost a rule and there is no scope for creative experimentation of any kind. Thus even here the individual is emersed in a situation where her mechanical execution of stated duties is the requirement of her success.

Although the influence of acculturation processes on the lives of these women can neither be denied nor under= estimated one has to consider the extent of their acculturation which cannot be considered so extensive as to warrant our consideration of these people as com= pletely westernized and having a totally different orientation from the traditional.

Therefore when we consider this kind of Nguni woman we have to reckon with a person who is leading a life with relatively fewer demands who is leading a life that is noted for its relative simplicity and limited assertive= ness living a relatively protected life the protectors being parents, husband and the social structure as a whole.

DISCUSSION OF HYPOTHESES

A discussion of the hypotheses will facilitate discussion and conclusions concerning this study.

HYPOTHESIS I.

The experimental group will differ from the control group in the existence of a thought disturbance.

12 signs were used to test this hypothesis. Statistical significance was attained with 3 signs which were the reaction time, W- and F+%. The experimental group had a lower reaction time, more W- responses and a lower F+%. In this way the results supported the hypothesis of disturbance in thought of a fashion described in Chapter 5.

It is however interesting to note that there are 9 factors in this hypothesis which failed to attain statistical significance. Two of these had data which tended to negate the hypothesis. These were number of responses and arbitrary responses. Another two DW and DdD and contamination had exactly equal data for both groups. The remaining 5 factors had data which did not reach statistical significance. These were W+, original responses, denied responses, perseveration and rejected cards.

Taking the two which tended to negate the hypothesis first, it was found that the results of the number of responses factor remind one of the complexity of the significance of the number of responses. Apart from the blocked schizophrenics who may reasonably be expected to produce a limited number of responses there is the reality of the existence of looseness of thought which could also result in more responses being given. Apart from that the control group may have been affected to produce a limited response total as an expression of the guarded limited freedom which is part of their lives explained at the beginning of this chapter. The schizophrenics could then have more responses than the control group as an expression of their thought disturbance expressing itself in comparative lack of cultural guardedness.

Coming to the second factor of arbitrary responses where the results tended to negate the hypothesis one could consider these in conjunction with the DW+DdD responses and contami-

nation where the results were equal for both groups. A common characteristic of these 3 factors is their concentration on that part of cognition that controls judgement in particular and the ability for discrimination. Is it not possible that as a result of chronic passivity and relative lack of challenging stimulus input the control group could be experiencing more or less the same limitedness in this sphere as the experimental group?

Finally we have the remainder of the factors where the results tended to support the hypothesis but statistical significance was not reached. At this juncture let me express the vehemence of the irresistible impulse to view the effects of treatment and chronicity in the blunting of these factors which are suspected would reach statistical significance with a more acute sample, as possible culprits.

It is significant to note that these hypotheses are made with marked guardedness because there are those factors where the data were so small anyway that any comment about the results is a daring deed indeed.

HYPOTHESIS 2.

> The experimental group would differ from the control group in the existence of an emotional disturbance.

Three factors were used to test this hypothesis and only one attained statistical significance supporting the hypothesis. This is LDF + LD > FLD. It should however be noted that with the control group the sum of LDF + LD was equal to FLD whereas the expectation would have been that FLD would be greater than LDF + LD. Taking Beck's interpretation of these factors would suggest the consideration of dysphoric trends and mood controlling factors vying for prominence with equal strength in these people. It would be outside the scope of this study to dwell on speculation on the reasons for this struggle perhaps this would be a hypothesis for another study.

With the other factor CF + C >FC the results of the experimental group tend to support the hypo= thesis although statistical significance has not been attained. It is however also the case that with the control group also CF + C tends to be greater than FC. This could be a reflection on the emotional status of these women being tempered by factors possibly in their social existence. Since emotional guardedness and spontaneity is controlled by factors arising from conformism to customs and mores it could be possible that the role of control in this sphere is due as much to external as to internal factors. This is only a hypothesis whose value could be tested in the future.

Results concerning Cn have tended to support the hypothesis although this comment is made with the guardedness that the small size of the data requires.

HYPOTHESIS 3.

> The experimental group will differ from the control group in the existence of a disturb= ance in interpersonal relationships.

The testing of this hypothesis was done with the aid of 5 factors. Only one of these 5 supported the hypo= thesis at a statistically significant level. This was the Hd >H. Considering the control group however it is found that Hd is also greater than H although with this group statistical significance was not attained. This then tends to negate the hypothesis. It should however be remembered that this control group was taken from a group working in a hospital situation where the emphasis on health and body parts would be expected to be greater than in another setting. Thus a hypochondriachal posture could be a feature generated by the work situation.

The other factors in this hypothesis which are popular responses, Dd and (H) have results which tend to support the hypothesis although statistical significance was not reached. A factor which could contribute towards blunting these could be the patients' response to treatment result=

ing in the cultivation of a limited form of contact.

With the factor W+ Dd + S>D the results with the ex= perimental group tend to negate the hypothesis although not at a statistically significant level. With the con= trol group the results tend to support the hypothesis for D tends to be greater than the sum of W+ Dd + S. Here also we may think about the achievement of a cer= tain level of contact as a result of treatment.

Taking the 3 hypotheses as a whole and the factors that were used for testing them one cannot deny the fact that out of 20 testing factors only 5 had statistical signifi= cance supporting the hypotheses and this number is rather small. However none of the factors tested negated the hypotheses at a statistically significant level. It is therefore natural faced with this calculation, to believe that although this is a pioneer study the applicability of the Rorschach to Nguni female submects cannot at this stage be viewed with undue optimism.

Rorschachers have always been known for their enthusiasm for the technique. It is hoped that it was for reasons other than this that the investigator's scrutiny direct= ed itself towards those factors that tended to support the hypotheses as well. Of the remaining 15 after sub= tracting the 5 significant results, 10 factors tended to support the hypotheses, 3 tended to negate the hypotheses and 2 were neutral. It was therefore considered a worth= while exercise to go a step further and group certain factors together to see whether as a group they could de= monstrate their effectiveness in discriminating between the two groups.

The results of the test for discriminant function then as has been stated were reasonably good. They indicate the need for future investigation of the effectiveness of the Rorschach using the same hypotheses but with the factors involved in the discriminant function test as presented below:-

HYPOTHESIS 1.

1. Reaction time
2. Responses
3. W-
4. W+
5. F+%

HYPOTHESIS 2.

6. CF + C > FC
7. LDF + LD > FLD

HYPOTHESIS 3.

8. Hd > H
9. P
10. Dd
11. W + Dd + S > D

It is partly the results of the test of discriminant function together with those discussed at the beginning of this chapter that inspite of the discouraging results one is bound to declare the need for further research with the Rorschach technique to be carried on with African subjects.

From this study it is evident that naive acceptation of the significance of the scores of the Rorschach is unwarranted. There is need to go into the field and investigate Rorschach patterns with normals more closely and determining possibly new facets to the significance of these signs. It cannot be assumed at this stage that the particular sign clusters chosen to test out these hypotheses are the best arrangement and choice and it could be possible to revise this and better it.

Finally turning away from the Rorschach to the factor of the schizophrenic condition itself it is to be remembered that this condition is one of the most elusive in the history of psychopathology and that apart from the questionable nature of the Rorschach's applicability schizophrenia is still like the proverbial eel in that schizophrenics exhibit the greatest diversity and that changeability from one time context to another is a

feature that could possibly baffle investigation into this condition. Apart from all this as a result of questions of availability for research purposes one is confronted with the situation of having tested schizophrenics undergoing treatment possibly towards remission. The effects of this on the results of the Rorschach cannot be sidestepped and forgotten easily.

In conclusion one has to comment distinctly on the vital question of what these findings mean for the diagnostician in the clinical setting. This cannot be answered fully at this stage of the development of research with African subjects but to quote Friedman groups differing extremely widely in psychic functioning should differ in what has been claimed as measures of that functioning unless the significance attached to those measures' use is doubtful. Or is it possible that extremely wide differences are in our theories and not in the phenomena.?

SUMMARY

Observation of the frequency with which major decisions on issues affecting psychiatric patients were decided on material elicited from techniques like the Rorschach stimulated the investigation of the applicability of this technique to African patients. The nosological group chosen for this study was the schizophrenic group.

Scrutiny into the literature revealed great diversity in conceptions of the etiology of the schizophrenic condition. To handle this material it was necessary to adopt a modification of the framework used in Friedman and Kaplan (1974). Having gone into the models on etiology it was evident that consistency was only possible in the realm of symptoms and diagnosis and the definition of schizophrenia as a group of psychotic disorders characterised by gross distortions of reality: the disorganisation and fragmentation of perception, thought and emotion and withdrawal from social interaction, was adopted.

With this preconceived idea of schizophrenia three hypotheses were formulated to test the diagnostic utility of the Rorschach with Nguni schizophrenic female subjects. These were:-

A. HYPOTHESIS 1.

The experimental group will differ from the control group in the existence of a thought disorder.

B. HYPOTHESIS 2.

The experimental group will differ from the control group in the existence of an emotional disturbance.

C. HYPOTHESIS 3.

The experimental group will differ from the control group in the existence of a disturbance in interpersonal relationships.

To test out these hypotheses certain Rorschach sign clusters were chosen - this procedure being consistent with a conceptual syndromatic approach.

Two samples were chosen. The one was a group of diagnosed schizophrenic patients and the other was a group of gainfully employed normal subjects. These two groups were equated for ethnic grouping, sex, age, and schooling. Care was taken to ensure that the patient group was not suffering from any known physical condition and that the control group was free from physical conditions and any psychiatric involvement in the then present and in the past.

The profiles of the two samples were analysed according to Ewald Bohm's scoring procedure and the results were analysed according to the hypotheses stated above.

The results of the investigation were that of the 20 factors used to test the 3 hypotheses, 5 supported the hypotheses with statistical significance. Table 24 below demonstrates this.

TABLE 24.

HYPOTHESIS 1.

1.	Reaction time	*
2.	Responses	
3.	W-	*
4.	W+	
5.	F+	*
6.	DW + DdD	
7.	Original	
8.	Denied responses	
9.	Arbitrary responses	
10.	Contamination	
11.	Perseveration	
12.	Rejected cards	

HYPOTHESIS 2.

13. CF + C > FC
14. Cn
15. LDF + LD > FLD *

HYPOTHESIS 3.

16. Hd > H *
17. Popular responses
18. Dd
19. W + Dd + S > D
20. (H)

Since most of those which did not reach statistical significance tended to support the hypotheses anyway it was decided to group the factors together and make a test of discriminant function. Certain factors whose data were too small were left out.

The discriminatory analysis showed that the selected Rorschach signs identified 24 members of the control group and misclassified 4, and identified 26 schizophrenics and misclassified 6.

As a result of these findings it was suggested that there was indication of the need for more research to be conducted in this field with African subjects before the technique can be accepted or rejected.

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APPENDIX 1.

1. Name
2. Educational status?
3. What chronic illness do you suffer from?
4. Do you suffer from diabetes?
5. Do you suffer from blood pressure?
6. Do you suffer from nerves?
7. Do you ever cry for no apparent reason because of depression?
8. Do your friends and relatives think you get angry quickly?
9. Do you have enemies?
10. Do they bewitch you?
11. What have you done about this?
12. How often do you drink a week/month/year?
13. How often do you take drugs?
14. How often do you smoke dagga?
15. Do you think you are healthy mentally and physically?
16. Have you ever been treated for 'ufufunyana'? what about 'ukurayiza'?
17. How often have you been admitted to a hospital?
18. For what reason were you admitted?
19. Do you suffer from epilepsy?

APPENDIX 2.

ANALYSIS OF SAMPLE BY AGE

	EXPERIMENTAL	CONTROL
21 - 24	2	1
25 - 28	4	4
29 - 32	6	2
33 - 36	5	3
37 - 40	3	6
41 - 44	8	4
45 - 48	2	9
49 - 52	0	1
TOTAL SAMPLES	30	30
RANGE	21 - 46	21 - 49

APPENDIX 3.

ANALYSIS OF SAMPLE BY SCHOOLING

	EXPERIMENTAL	CONTROL
2 - 3	3	3
4 - 5	14	7
6 - 7	8	9
8 - 9	4	11
10 - 11	1	0
TOTAL SAMPLES	30	30
RANGE	3 - 10	2 - 9

APPENDIX 4.

REACTION TIME IN SECONDS

EXPERIMENTAL GROUP	CONTROL GROUP
90	498
264	522
185	210
29	140
105	312
88	73
80	348
92	220
98	122
76	185
129	297
105	342
160	400
214	520
1132	736
54	406
158	763
88	162
84	169
83	248
121	144
90	261
97	449
92	402
163	784
109	78
60	356
157	235
53	281
300	167

APPENDIX 5.

RESPONSES.

EXPERIMENTAL GROUP	CONTROL GROUP
17	12
12	18
20	18
32	12
9	15
50	10
13	12
11	26
10	26
8	10
12	37
14	15
7	28
16	22
10	12
18	10
20	39
12	10
11	15
29	16
57	15
21	15
10	11
12	8
18	10
17	32
9	9
21	9
12	14
9	10

APPENDIX 6.

W-

EXPERIMENTAL	CONTROL
2	3
0	1
3	1
8	4
6	5
1	7
6	0
0	3
5	4
3	4
8	1
7	1
5	1
5	5
5	2
7	0
3	2
1	5
4	1
7	6
8	1
0	2
1	1
4	0
3	3
4	3
3	3
9	4
5	3
4	3

APPENDIX 7.

W+

EXPERIMENTAL	CONTROL
3	5
5	2
4	6
0	2
2	2
0	2
3	4
3	0
3	3
4	3
2	2
2	2
2	1
2	3
1	1
2	0
1	2
2	1
1	5
3	2
2	2
2	3
3	0
1	3
3	0
2	4
1	3
2	2
1	3
2	5

APPENDIX 8.

F+%

EXPERIMENTAL	CONTROL
50	75
82	74
59	78
0	55
25	50
28	33
33	86
67	13
44	50
33	61
21	52
20	54
33	67
67	38
25	44
61	60
28	41
60	25
56	71
40	36
31	63
75	95
44	25
17	69
44	30
54	48
67	43
25	71
6	40
50	92

APPENDIX 9.

DW + DdD

EXPERIMENTAL	CONTROL
0	0
1	0
1	0
0	1
0	0
0	0
0	0
3	1
1	0
0	0
0	0
0	0
0	2
0	0
0	1
0	0
0	1
2	0
0	1
1	1
1	2
1	0
0	1
0	0
1	0
0	3
0	1
4	0
0	1
0	0

APPENDIX 10.

REJECTED CARDS

EXPERIMENTAL	CONTROL
0	1
1	0
0	0
0	0
2	0
0	0
1	4
0	0
0	0
3	0
0	0
0	0
3	0
0	0
2	0
0	0
0	0
1	0
1	1
0	0
0	0
0	2
2	0
0	3
1	0
0	0
2	1
0	1
0	0
0	1

APPENDIX 11.

CONTROL GROUP

CF + C	FC
1	0
0	0
0	0
0	0
0	3
0	0
0	0
0	0
2	1
0	1
6	0
1	0
0	1
1	0
0	0
0	0
0	0
0	0
0	1
0	1
0	0
0	1
0	0
0	0
4	3
1	0
1	0
0	1
2	0

APPENDIX 12.

EXPERIMENTAL GROUP

CF + C	FC
4	0
0	0
1	2
0	22
1	0
1	0
1	0
0	0
0	0
0	0
2	3
0	3
0	1
1	0
1	0
8	0
0	0
1	0
1	0
10	0
6	3
2	0
0	0
1	0
0	0
1	0
0	1
0	0
0	3
2	0

APPENDIX 13.

EXPERIMENTAL

LDF + LD	FLD
0	0
0	0
1	0
0	0
0	0
0	0
0	0
0	0
1	0
0	1
0	0
1	0
0	0
0	0
0	0
1	0
3	0
0	0
1	0
9	0
1	1
0	0
0	0
0	0
0	0
2	0
2	0
0	0
0	0
1	0

APPENDIX 14.

CONTROL

LDF + LD	FLD
2	0
0	0
0	0
0	0
0	0
0	1
0	1
0	0
0	3
0	0
0	0
0	0
3	0
0	0
0	0
0	0
0	0
0	0
1	0
0	1
0	0
1	0
0	0
0	0
0	0
2	0
0	1
1	0
0	2
0	1

APPENDIX 15.

EXPERIMENTAL GROUP

Hd	H
1	0
1	1
0	1
0	0
0	0
23	0
0	0
0	2
0	1
0	1
0	0
0	0
0	0
1	4
0	1
0	0
0	3
0	1
0	2
0	0
2	5
0	1
0	0
2	0
0	0
2	0
2	2
0	0
0	0
0	0

APPENDIX 16.

CONTROL GROUP

Hd	H
0	1
3	1
2	3
4	0
2	0
0	0
1	0
8	0
4	2
0	1
3	0
3	4
6	3
6	1
2	0
6	0
5	0
6	1
0	2
0	0
4	0
0	0
5	0
1	0
2	0
1	2
0	0
0	0
2	2
0	1

APPENDIX 17.

P

EXPERIMENTAL	CONTROL
3	4
6	4
6	5
0	1
3	2
1	2
4	5
1	0
3	3
4	3
0	1
2	2
2	3
3	2
2	1
2	0
1	3
2	1
3	5
3	3
0	1
4	3
2	0
1	4
3	0
3	4
2	2
2	4
0	3
3	3

APPENDIX 18.

Dd

EXPERIMENTAL	CONTROL
0	0
0	1
0	0
2	0
0	0
13	0
1	1
1	1
0	2
0	0
0	1
0	0
0	2
1	1
0	2
0	1
1	7
1	0
1	0
0	1
7	0
1	0
0	0
0	1
0	0
0	2
0	0
2	0
0	1
0	0

APPENDIX 19.

EXPERIMENTAL

W+Dd+S	D
5	12
5	6
8	11
10	22
8	1
19	31
10	3
4	4
8	1
7	1
10	2
9	5
7	0
8	8
6	3
9	8
5	15
5	5
6	5
10	18
17	39
3	17
4	6
5	7
6	1
6	9
4	5
13	4
6	6
7	2

APPENDIX 20.

CONTROL

W+Dd+S	D
8	4
4	12
7	11
7	4
9	6
9	1
5	7
4	21
9	16
7	3
6	31
4	11
5	0
10	12
6	5
1	8
11	27
6	4
6	8
9	6
3	10
5	10
2	8
4	4
4	6
11	18
6	2
6	3
7	6
8	2

APPENDIX 21.

	REACTION TIME n	RESPONSES n	W-	W+	F+%	H2	H3
01	6.2106	2.4849	3	5	75	2.98	3.80
02	6.2577	2.8904	1	2	74	0	5.76
03	5.3471	2.8904	1	6	78	0	4.44
04	4.9416	2.4849	4	2	55	0	3.10
05	5.7430	2.7081	5	2	50	2.46	2.80
06	4.2905	2.3026	7	2	33	1.08	2.80
07	5.8522	2.4849	0	4	86	1.08	4.78
08	5.3936	3.2581	3	0	13	0	7.73
09	4.8040	3.2581	4	3	50	4.07	5.27
10	5.2204	2.3026	4	3	61	.82	3.15
11	5.6937	3.6109	1	2	52	4.93	7.50
12	5.8348	2.7081	1	2	54	.83	3.08
13	5.9915	3.3322	1	1	67	4.07	5.74
14	6.2538	3.0910	5	3	38	.82	4.76
15	6.6012	2.4849	2	1	44	0	3.22
16	6.0064	2.3026	0	0	60	0	4.89
17	6.6373	3.6636	2	2	41	0	12.42
18	5.0876	2.3026	5	1	25	0	3.39
19	5.1299	2.7081	1	5	71	1.90	4.54
20	5.5134	2.7726	6	2	36	1.90	3.21
21	4.9698	2.7081	1	2	63	0	3.86
22	5.5645	2.7081	2	3	95	1.90	2.87
23	6.1070	2.3979	1	0	25	0	3.51
24	5.9965	2.0794	0	3	69	0	3.77
25	6.6644	2.3026	3	0	30	0	1.32
26	4.3567	3.4657	3	4	48	2.98	5.82
27	5.8749	2.1972	3	3	43	1.90	2.04
28	5.4596	2.1972	4	2	71	1.90	3.14
29	5.6384	2.6391	3	3	40	2.98	2.83
30	5.1180	2.3026	3	5	92	2.72	3.53
31	4.4998	2.8332	2	3	50	.91	3.56
32	5.5759	2.4849	0	5	82	0	4.08
33	5.2204	2.9957	3	4	59	1.79	4.71
34	3.3673	3.4657	8	0	0	5.05	3.13
35	4.6540	2.1972	6	2	25	.22	3.33
36	4.4773	3.9120	1	0	28	.22	13.46

	REACTION TIME n	RESPONSES n	W-	W+	F+%	H2	H3
37	4.3820	2.5649	6	3	33	.22	4.35
38	4.5218	2.3979	0	3	67	0	1.48
39	4.5850	2.3026	5	3	44	.57	3.56
40	4.3307	2.0794	3	4	33	.57	4.01
41	4.8598	2.4849	8	2	21	.22	1.59
42	4.6540	2.6391	7	2	20	1.25	2.08
43	4.0752	1.9459	5	2	33	.22	2.68
44	5.3660	2.7726	5	2	67	.22	3.02
45	7.0317	2.3026	5	1	25	.22	2.11
46	3.9890	2.8904	7	2	61	2.40	1.48
47	5.0626	2.9957	3	1	28	1.72	3.70
48	4.4773	2.4849	1	2	60	.22	1.89
49	4.4308	2.3979	4	1	56	.79	2.97
50	4.4188	3.3673	7	3	40	7.47	3.53
51	4.7958	4.0431	8	2	31	.68	7.73
52	4.4998	3.0445	0	2	75	.45	5.97
53	4.5747	2.3026	1	3	44	0	1.68
54	4.5218	2.4849	4	1	17	.22	1.50
55	5.0938	2.8904	3	3	44	0	2.93
56	4.6913	2.8332	4	2	54	1.37	3.00
57	4.0943	2.1972	3	1	67	1.37	1.48
58	5.0562	3.0445	9	2	25	0	3.82
59	3.9703	2.4849	5	1	6	.68	0
60	5.7038	2.1972	4	2	50	1.60	2.93