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A PERCEPTUAL MEASURE OF APPROACH AND AVOIDANCE IN PROCESS AND REACTIVE SCHIZOPHRENICS

by

Vickie M. Mays

A Thesis Submitted to the Faculty of the Graduate School of Loyola University of Chicago in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

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1979

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VITA

The author, Vickie M. Mays, was born January 30, 1952, in Chicago, Illinois. Her elementary school education was obtained in the parochial schools of Chicago, Illinois and secondary education at Aquinas Dominican High School, Chicago, Illinois, where she graduated in 1968.

In September, 1968, she entered Loyola University of Chicago, and in February, 1973, received the degree of Bachelor of Science with a major in psychology. While attending Loyola University of Chicago, she was president of the Loyola Chapter of the Black Student Psychological Association during 1970-1971. In 1970 she became a student member of the American Psychological Association and the Association of Black Psychologists. In February, 1972, she was granted an assistantship in psychology as a graduate student in clinical psychology at Loyola University of Chicago. In Feb., 1979 she was awarded the Master of Arts degree in Clinical Psychology.

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INTRODUCTION

Although several theoretical proposals have appeared in the literature concerning the concept of process-reactive schizophrenia, most have not addressed themselves to a study of qualitative differences between process and reactive schizophrenics. Instead, research in this area has been in the direction of quantitative differences. Becker (1959), Winder and Kantor (1959), and Zimet and Fine (1959) support the notion of maldeveloped personalities in both process and reactive schizophrenics. In general, these studies found that process schizophrenia reflects a more undifferentiated, less integrated personality structure than reactive schizophrenia. However, it would be of greater utility if the process-reactive concept could be shown to have other correlates beyond quantitative differences in levels of adjustment, i.e., to be a hypothetical construct rather than an intervening variable (MacCorquodale & Meehl, 1948).

The purpose of this study is to investigate Higgins' (1968) suggestion that process and reactive schizophrenics differ not only quantitatively in level of adjustment, but also qualitatively in their adjustment,

in terms of orientation to the environment. That is, Higgins' sees process schizophrenics as avoidance oriented, and reactives as approach oriented, "abient-adient", in their general reactions to the environment.

It is the purpose of this study to examine whether these directional tendencies can in fact be demonstrated empirically. It is hypothesized in this study that on two perceptual tasks, Hutt's Adaptation of the Bender-Gestalt Test and a specially constructed Adaptation of the Stroop's Color Word Test, process and reactive schizophrenics will reflect abient or adient orientations to the environment. Specifically, process schizophrenics will avoid the environment (abience), tending to visually center on material, while reactive schizophrenics will approach the environment (adience), tending to visually scan a wide variety of material regardless of its relevance to the task.

Background

Many contemporary investigators in the area of schizophrenia are attending to the process-reactive continuum in schizophrenia in doing psychological research. Various studies have shown that, as a group, schizophrenics are more variable than normals and are not a homogenous population (Johannsen, Friedman, Leitschuh, & Ammons, 1963).

Therefore the use of subgroups when doing research in this area has become an increasingly popular one. Cromwell (1970) has pointed out that it may be beneficial to classify schizophrenics into subgroups such as the process-reactive dimension. Lewis, as far back as 1936 in his review of dementia-praecox research, concluded that investigation of the process-reactive continuum was a major direction indicated for further research in the area of schizophrenia. Bleuler (1930) also recognized that there might be at least two types of schizophrenia, having observed that some schizophrenics seemed to remit while others did not. Since the time of Bleuler, there has been a number of studies which have used the process-reactive distinction. O'Keefe (1972) notes that there has been research in the area of psychophysiological functioning (King, 1958; Lang & Buss, 1965; Meadow & Fukenstein, 1952; Venables, 1968; Ward & Carlson, 1966), information processing (Cromwell, 1968; Pearl, 1962; Silverman, 1967; Vaillant & Fukenstein, 1966), motivation and emotion (Buss & Lang, 1965), avoidance behavior and hypersensitivity to noxious stimulation, physical and social (Garmezy, 1965, 1968; Silverman, 1963), perceptual and cognitive styles (Heilburn, 1972; Kantor & Herron, 1965; Moore, 1971; Rodnick, 1967; Royer & Friedman, 1973; Sappington, 1973; Tucker, Harrow, Detre, & Hoffman, 1969), developmental theory (Phillips, 1953; Rodnick, 1967);

familial factors (Baxter, 1966; Fontana, 1966; Lidz, Fleck, & Cornelison, 1965; Mednick & Schulsinger, 1961; Mishler & Wexler, 1965), socio-environmental orientation (Higgins, 1968), therapeutic intervention (Betz, 1963; Coyle & Coyle, 1965; Field & Miller, 1967) and conceptual and methodological issues of the process-reactive continuum (Garmezy, 1968; Higgins & Peterson, 1966; Raskin, 1969).

The present study will limit its review to studies dealing with the behavioral conceptualization and validation of the process-reactive distinction and with cognitive functions, primarily perceptual styles, in process and reactive schizophrenics.

Process-Reactive Continuum

Schizophrenia as a diagnostic category has been plagued by a lack of clarity and uniformity in criteria of what schizophrenia is and what causes it. Jackson (1960) gives seven frames-of-reference concerning the possible cause of schizophrenia. He also makes reference to the need for more useful diagnostics categories and a conceptual orientation or framework that can simultaneously accommodate factors from biochemical, social and psychological influences. Based on these insufficiences of uniformities and observable differences in schizophrenics, frameworks for the process-reactive subgroups began to take root. The basis for these frameworks ranged from

energy levels to premorbid adjustment. A continuum provides such a framework and also enables the investigator to more accurately locate the individual as to the severity of his schizophrenia and the likelihood of his remission is the process-reactive dimension.

The Elgin Prognostic Scale was the first instrument developed to differentiate between process and reactive schizophrenics. It was developed by Wittman in 1941 originally with 30 subscales. Twenty-five of these scales measured premorbid adjustment and the other five measured symptoms. Eventually it was reduced to twenty subscales, each of which carried "armchair" weights that mirrored the prognostic significance of the items based upon clinical judgement.

Becker (1956) developed a revision of the Elgin Scale which allows for more accurately described intermediate points within each subscale. This revision strengthened the likelihood of more reliable and valid ratings by clinical judges.

The Phillips Scale of Premorbid Adjustment (Phillips, 1953) is the scale which appears most often in process-reactive research and was used in the present study. The Phillips Scale, which emphasizes sexual adjustment, in its full original form consists of three subdivisions: premorbid history, possible precipitating stress, and signs of disorder. Later it was found by

Phillips that the premorbid history tended to correlate highly (.91) with the signs of disorder and less highly to possible precipitating stress factors (.72). Therefore now many investigators choose to use just the premorbid history for determining the process-reactive dimensions (Garmezy, 1968).

There have been various criticisms of the Phillips Scale. The most serious criticism was raised by Chapman, Day and Burnstein (1961) who contended that the Phillips Scale did not allow a distinction between maladjustment due to schizophrenia and maladjustment due to socioeconomic deprivation. Research on the issue has yielded some conflicting results. Chapman and Baxter (1963) supported the hypothesis that socioeconomic factors rather than pathology account for some differences in adjustment. The research of Moriarity and Kates (1962), Lebow and Epstein (1963), and DeWolfe (1962), does not fully support this hypothesis, but recognizes that social class may influence the subdivisions but does not necessarily invalidate the process-reactive dimension.

Garmezy (1968) found that the Phillips Scale has advantages over other scales, specifically the Elgin Scale. The Phillips Scale tends to avoid such indefinite terms as "asthenic build", "toxicity of exhaustion", "low energy tone", and "constitutional bias." It requires

only minimal case history data and the reliability of the scale was rigorously confirmed. In addition, its construct validity has been demonstrated through a number of studies.

Other self-report inventories have been developed to produce the process-reactive distinction (DeWolfe, 1968; Johnson & Ries, 1966; Ullman & Giovanni, 1964). DeWolfe (1968) used the General Information Questionnaire (GIQ) which is a self-report inventory, to obtain Phillips Scale scores. He found that this method yielded inter-judge reliability and concurrent validity scores equal to those obtained when the Phillips scores were based on complete case histories. Additional concurrent validity for Phillips scale ratings made from self-report on the GIQ were found by DeWolfe (1968) and Schnell (1964). The GIQ was used in the present study to establish the Phillips Scale scores.

Several authors have provided descriptions of the process and reactive schizophrenics (Becker, 1956, 1959; Chapman, Day, & Burnstein, 1961; Herron, 1962; Higgins, 1964; Kantor and Herron, 1966; Kantor & Winder, 1959; Kantor, Wallner, & Winder, 1953; Zimet & Fine, 1959). The process schizophrenic is characterized as exhibiting flat affect and showing no obvious precipitating factors. Rather, he manifests a slow, insidious onset of psychosis

with a history of withdrawal. He shows little confusion as to time, place or person, and appears unconcerned about his illness and hospitalization. Prognosis is usually poor. The reactive schizophrenic is characterized by an acute onset with precipitating stress factors such as upward mobility, and an abrupt change in situation and/or upsetting sexual encounters. Premorbid personality is usually characterized as fairly normal or neurotic with a tendency to approach people and interact with them. In the acute state there are florid symptoms present, strong affective components and there may be vivid hallucinatory experiences. There is also a great deal of fear and feelings of anxiety manifested, and the individual may be distraught about the possibility of going "crazy" (Higgins, 1968; Jackson, 1960).

Family Dynamics. Some of the behavioral manifestations of the process and reactive schizophrenic may be better understood by examining their family dynamics. Higgins (1968) said the process schizophrenic is born into a family in which both parents indulge in immature defense strivings. Further, the pattern of the "schizophrenogenic mother" (Arieti, 1959) and the weak ineffectual father is common. The mother is the markedly dominant parent, tending to be punitive, censoring and sexually seductive (if a male child), while the father is

submissive. According to Higgins, as a consequence the child learns very early in life to avoid physically and psychologically and withdraws from the mother by engaging in behaviors ranging from overt flight through excessive docility to autism. Later in life these avoidant behaviors generalize to teachers, playmates and still later, in adolescence, to members of the opposite sex and eventually to practically all social relationships.

The process schizophrenic, Higgins points out, uses most of his energies selectively scanning the environment for cues of disapproval or censure in order to avoid or minimize the resulting anxiety which he has experienced so often in his relationship with his parents. He avoids this censure by avoiding social contact with people and becoming increasingly withdrawn. One way the process schizophrenic accomplishes this avoidance is through "sensory input processing-ideational gating." This theory, proposed by Silverman (1964), postulates that environmental input is filtered, attenuated, blocked, or distorted, thereby reducing the individual's responsiveness to elements in the environment. It has been shown that process schizophrenics are more influenced by social censure than are reactive schizophrenics (Blumenthal, 1964; Garmezy & Rodnick, 1959; Hellman, 1961; Koppenhaver, 1961; Rodnick & Garmezy, 1957, 1959; Ryan, 1960; Young,

1972).

The reactive schizophrenic is raised in a family in which the social adaptiveness levels of the parents are higher and the role patterns tend to be reversed compared to the process schizophrenic. That is, the father is dominant and ascendant and the mother is weak. Though the father may be harsh, feared, distrusted, and demanding, he still presents an assertive model for the young male child (Mussen, 1967). Aggressive masculine behavior is valued, and if the child fails to live up to parental expectations of which he fears failure, he is severely punished (Garmezy, Clarke, & Stockner, 1961). The child, therefore, learns to respond forcefully and energetically to the environment. Rather than backing off from a situation, the individual attacks it. The reactive, having found that such forceful interaction with the environment has been profitable in the past, continues to use this strategy but tends to overcompensate. He scans the environment seeking all cues without filtering or gating. Reactives thus have been seen to be "overinclusive" on sorting tests (Tutko & Spence, 1962), which supports the tendency to scan without filtering or gating input.

Developmental Aspects. Developmentally the process-reactive continuum reflects different levels of personality organization. Kantor, Wallner and Winder (1953) found

the process schizophrenic, between the ages of one to five years, typically experiences psychological trauma and severe illness. During this period the individual is also beginning to become an "odd" or weird member in the family. The consequences of such developmental problems in the process schizophrenic are as follows: the process schizophrenic has a relative lack of personality differentiation; interests are narrow and lacking intensity; there is a rigidity of structure and a lack of internal direction; from the age of five until adolescence the individual becomes increasingly withdrawn, he has difficulty at school and begins to show signs of decompensation in his mental and physical functioning; from adolescence to adulthood there is an inability to establish normal heterosexual relationships and independence; psychosis occurs gradually with no specific stress being present.

At the reactive end of the continuum there is evidence of a higher level of personality differentiation than with the process schizophrenic. The prepsychotic personality is relatively normal. The reactive schizophrenic as a child shows good physical health and psychological stability. During the period of five years to adolescence, school, social, and mental functioning are indicative of adequate adjustment. Interests are more varied and intense for the reactive child than the

process child, and heterosexual relations are more likely to have been established. Personal motivation and direction is also more apparent. Psychosis usually occurs suddenly as a result of some precipitating stress. Evidence that the reactive schizophrenic reaches a higher level of development is found in the observation that the individual recovers when the stresses are removed. Furthermore, the florid symptoms of this syndrome are indicative of continued struggling to maintain ego-functioning.

According to Becker (1956) the process-reactive distinction, as a continuum, reflects the level of organization reached by an individual in his growth toward maturity, with the process-reactive syndrome serving to identify the end points of severity in this growth. Accordingly, this "level of organization" in the continuum conceptualization is concerned with changes in the content and structure of mental organization as the human organism develops toward maturity. It also encompasses such factors as objectivity in perception, differentiation of needs, interests and other aspects of personal motivation and the degree of emotional control or adaptive functioning under stress (Becker, 1959).

Kantor and his colleagues present an explanation of the process-reactive continuum which parallels Sullivan's notions of personality development and schizophrenia.

It is important to review this theory in detail because it lends the support of a theoretical construction to the description of behavioral manifestations which have been observed in familial and developmental dynamics. In addition, it seems to support Higgins' (1968) theory of approach-avoidance behavior in process-reactive schizophrenics.

The most important dynamic of schizophrenia for Kantor and Herron (1966) is loss of self-esteem. The schizophrenic lacks an adequate self esteem or sense of worth and isolates himself from social interactions. This sense of worth, according to Kantor and Herron, operates on a continuum with the ends being wholly positive and wholly negative attitudes and schizophrenics differ from normals only in a quantitative sense. Kantor and Herron see the differences in one's self-concept as the result of perceived threats to the self. Therefore, the schizophrenic's psychotic symptoms are maladjustive behaviors used in an attempt to cope with a continuously threatening interpersonal environment. From the view of family dynamics of the process and reactive schizophrenic such an interpretation appears to be valid.

As these threats occur early in the individual's development, he adopts defensive strategies appropriate to that early age level. Since the developmental process

is sequential, the central tasks of each stage must be mastered before a new level of experience is possible. Thus the individual who feels threatened may become fixated at a stage because he is unable to master the maturational task and progress onwards.

Based on Sullivan's (1947) theory, Kantor and Herron (1966) proposed five maturational stages which the individual passes through in reaching a psychologically healthy adulthood. The stages are empathic, prototaxic, parataxic, autistic, and syntaxic. Process schizophrenia is associated with the first two stages and reactive schizophrenia is associated with the latter two stages. A review of Sullivan's theory might help to understand these stages better.

Sullivan viewed personality as an outgrowth of interaction between an individual and others in the environment. The personality develops through the individual's socialization and acculturation in society. Sullivan perceived this maturation or development occurring in six stages, each stage having a task. The stages are the following: 1) infancy--maturation of capacity for language; 2) childhood--maturation of need for playmates; 3) juvenile era--maturation of need for isopholic intimacy; 4) preadolescence--maturation of genital lust; 5) early adolescence--patterning of lustful

behavior; and, 6) late adolescence--maturity.

In achieving maturity, an individual's experiences flow from three inner modes: the prototaxic, parataxic, and the syntaxic. All experiences starting with stage one through stage six according to Sullivan (1947) occur in one of these modes. The prototaxic mode refers to a crude infantile recollection of a momentary stage in which a particular discomfort or fleeting satisfaction took place. The experiences are undifferentiated and without definite limits. In the parataxic mode the infant begins to personify, making elementary distinctions in his experience between himself and others. The distinctions, however, are not logical or orderly, for they are experienced as momentary, fragmented states of being.

The occurrence of the first word or "pseudo" word signals the beginning of the parataxic mode, with the term autistic referring to the verbal manifestations of this mode. At this point, the child's signs and symbols are highly personal and do not necessarily conform to a standard reality. The child gradually learns the patterns of relationships in the structure of language. He begins to learn that certain noises will bring about certain responses. With his acquired language he also learns he is able to make more distinctions in his environment. The child then begins to gain the ability to discriminate what

is and what is not and to communicate well enough to be understood and to understand others which is referred to as consensual validation. When these events take place the child has acquired the syntaxic mode of expression.

The schizophrenic's sense of self worth is determined in his social interactions with others from which he gets feedback which affects his perception of himself. Early family relationships of the schizophrenic are disturbed, preventing him from developing the capacity for adequate self-image. Sullivan (1962) feels such an individual is badly handicapped when the need for close interpersonal relationships develop.

> The etiology of a schizophrenic illness is to be sought in events that involve the individual... Events relating the individual with other individuals more or less highly significant to him... (Sullivan, 1962, p. 248).

Essentially, Sullivan viewed schizophrenia as an interpersonal disturbance in which cognitive difficulties are essentially the outcome of protecting the self against threat by withdrawing from others. Kantor and Herron (1966) viewed schizophrenia in much the same manner. Their six stages of development evolved from Sullivan's six eras of personality development, but they went a step further in extending the theory to include the schizophrenic's adaptation from failure to master the tasks of the stages.

In the first stage (empathic) the central problem is the experience of anxiety. The infant at this stage

does not experience his environment in any organized or logical manner. He has no symbolic means of perceiving and communicating. His ability to discriminate is very undifferentiated. Basically the infant's functioning is at an elementary level. Anxiety is experienced by the infant as immediate physical discomfort in response to disapproval or rejection by a significant other. This anxiety can interfere with the biological processes of sucking, swallowing, and feeding. Anxiety opposes any satisfaction of needs (Sullivan, 1953).

Theoretically the schizophrenic adaptation at this stage carries a very poor prognosis. The individual may show signs of cerebral dysfunctioning because massive anxiety occurring during this empathic period can interfere with evolving physiological functioning. The individual will be prone to engage in a great deal of fantasy and delusional behavior, manifesting infantile feelings of omnipotence.

In the second stage, which is the prototaxic stage, the task is the discrimination of direction of discomfort. Experience is not yet differentiated in terms of formal distinctions of time or space. Kantor and Herron (1966) described the activity of this stage as "instantaneous recording of situation." Normal mastery of this stage is rudimentary selectivity. Momentary experiences are

expressed as symbols.

The schizophrenic adaptation at this stage is one in which the individual shows a definite thought disturbance and problems in communication. His social behavior is characterized as chaotic and unpredictable. No self-concept has developed by this stage and only a primitive level of symbolization exists. Therefore the schizophrenic reverts to magical thinking and delusions of grandeur often supported by hallucinations which are poorly formed. Contact with reality is severely impaired.

Kantor and Herron point out two patterns which typify the prototaxic schizophrenic. The first is Feinchel's (1945) notion that the schizophrenic seeks an experience of "oneness"..."the child having lost his feelings of omnipotence believes the adults are omnipotent and strives for a reunion with them..." The other is the Mignon delusion, in which the schizophrenic believes he has been kidnapped from a wealthy family. He asserts his actual parents are frauds and much of his behavior will evolve from around this delusion, which is paradoxical because the critical focus of this stage is needing help from a significant other.

The third stage in Kantor and Herron's theory is the parataxic stage, with the task being the crystallization of a self-image. The activity of symbolizing in

this stage has not reached a level of verbal expression. This stage is broken into two parts, the first flowing from the prototaxic stage. Initially, experiences are momentary and unconnected. It is assumed that the experiences are the way such events naturally occur. Later the child's developing ability to symbolize helps him to identify his self-image, self-perception, and the perceptions of others. Previously he had only felt these self experiences.

In this stage much of the child's self-image is based on the values he perceives his parents equating to his actions. There are some events to which the self refuses awareness, events which have evoked a fear of dread or horror. They get identified as "not me" while other experiences are either "good me" or "bad me".

The task of mastery of this stage is an appropriate identification with significant others. The schizophrenic fails to accomplish this because he is unable to prevent the "not me" from coming into his awareness. The individual is characterized as being in a transitory episode in which he is confused, convinced that a calamity is happening, and panics. Over time he settles and becomes delusional and regressed with a poor prognosis.

In the autistic stage the child's language, which is now a verbalization of the parataxic stage, is idio-

syncratic, private, and reflects his own meanings. Through the process of acculturation the child is expected to master learning of appropriate language, with the task being the development of manipulable symbols. As the amount of acculturation increases, the child's language becomes more appropriate and reflective of cultural symbols.

In the autistic stage, the schizophrenic is characterized by paranoia, hostilities, and defensiveness, all of which are reactions to his own feelings of inadequacy. He strives to resolve his problems but his tendency toward distrust and social isolation gives him inadequate data for social validation so that all his ideas come from his own system of fantasies. His paranoia usually leads him to reconstruct his selected perceptions in terms of the autistic community he has created which is out to bring him harm.

In the last stage, the syntaxic, the task is consensual validation. The child attempts to correct distortions by checking his feelings against those of others. The stage is described as follows:

> New capacities for empathy and experience evolve... the more highly differentiated comprehension of what others are feeling is not simply projection but is a process of socially symbolic interaction within the child (Kantor & Herron, 1966, p. 50).

The schizophrenic at this stage has a very good prognosis. His behavior differs from other schizophrenics

in that he has mastered many of the other stages. His adaptation is probably a reflection of an environmental stress, with a capacity for resiliency.

Kantor and Herron (1966) describe the process-reactive continuum of schizophrenia within a perceptual structure relying on an interpersonal theory of self development. When an individual perceives threats or feels disapproval from his social interaction he begins to seek defensive strategies to cope with such anxieties. Kantor and Herron's theory is based on a deficit model, utilizing the concept of microgenesis. Werner (1956) defines microgenesis as the development of perceptual function from an amorphous and global instance to articulation and specificity. Forgus (1966) describes it as follows:

> what we observe as the final stage, namely the perceptual response or experience is actually a complex task which can be broken down into subtasks. These subtasks can be ordered into a hierarchy from the simplest to the most complex task, in which each successive progression up the hierarchy involves the extraction of progressively more information from the stimulus energy (p. 15).

Kantor and Herron (1966) describe microgenesis as a process of perceptual control through which irrelevant elements of the stimulus and irrelevant associations and thought are sorted, suppressed or repressed. This process of perceptual control is developmental and based on

a series of stages which must be mastered to achieve microgenesis.

In the process schizophrenic, Kantor and Herron (1966) believe that irrelevant and unconscious material is elicited rather than inhibited in the early stages of microgenesis. According to them, this lack of perceptual control abhorts microgenesis resulting in a developmental deficit. The reactive schizophrenic exhibits more socialized and consensual perceptions because he succeeds in controlling the emergence of primitive and repressed material.

Cognitive Styles

Cognitive style is defined by Witkins (1965) as the characteristic, consistent manner in which people function in their perceptual and intellectual activities. Cognitive styles are manifestations of dimensions of the individual's personality. An important aspect of understanding cognitive styles is the notion of "psychological differentiation", which is a developmental phenomenon, and in many ways similar to microgenesis, reflecting the articulation and structuring of the experience of the self and the environment (Karp & Pardes, 1965). In psychological differentiation, individuals progress developmentally from a global, undifferentiated mode of experiencing towards an increasing ability to differentiate

which is characterized by more structuring and articulation. Witkins (1965) points out the importance differentiation has in relation to behavior and personality dimensions. He reports a relationship of differentiation to such areas as perception, the kinds of concepts an individual holds about himself, the types of defense mechanisms employed, pathological symptoms, field dependence-independence and various other areas.

Psychological differentiation and perception. The perceptual variables of field dependence-independence in relation to the articulated versus the global dimension of cognitive functioning was examined by Witkins (1965). He defined the field dependent mode of perception as one in which perception is dominated by the overall organization of the field, parts of the field are experienced and perceived as fused. Field independence is perception which is characterized as the parts are experienced as distinct from the organized whole background. Several measures of the variables of the field dependence-independence have been developed and researched along the process-reactive dimension.

Bryant (1961), using the Witkin Rod and Frame test and the Embedded Figure test, found reactive schizophrenics were field-independent as compared to process schizophrenics who were found to be field-dependent.

Bryant also related these interpretations to Werner's levels of personality organization concluding that process schizophrenics perceptually show greater regression than reactive schizophrenics. Bryant's results support those of Becker (1956), Kantor and Herron (1966) and Zimet and Fine (1959). Zimet and Fine (1959) found process schizophrenics to be perceptually immature when compared to reactive schizophrenics, hypothesizing that process schizophrenics function on a more primitive perceptual level than reactives.

Witkins (1965) also notes the relationship of psychological differentiation to the types and specialization of defenses. Individuals who are highly articulated tend to use the defenses of isolation or intellectualization, while individuals who function in a global cognitive style tend to use the defense mechanisms of "massive repression and primitive denial." This relationship between the type of defenses and the cognitive style according to Witkins (1965) is described as follows:

> The contrasting kinds of defenses used by persons with a more global or more articulated cognitive style may be conceived in terms similar to those...used, in characterizing their cognitive functioning. In the last analysis, defenses help determine the content of a person's experience--what enters into consciousness and what is put aside. They do this, in part, through regulating the interrelation between affect on the one hand, and ideation and perception on the other. It seems true of persons with a global cognitive style that feelings strongly influence thought and perception; in other words, that feelings are not kept sufficiently

> discrete from thoughts and percepts. This is congruent with what...happens...with perceptions, where again they are unable to 'keep things separate'--as body separate from field, rod, frame,...Persons with an articulated cognitive style, in their use of isolation, maintain the discreteness of feelings and ideas, although the feelings may be split off (p. 322).

Researchers have been concerned with cognitive functioning in the process-reactive dimension, but very little attention has been focused on perceptual performance as an indication of cognitive functioning. As Witkins (1965) points out, however, a person's defenses or perceptual and intellectual activities characterize their cognitive functioning. Based on Witkins' research and others, it can be concluded that there is a definite relationship between an individual's level of psychological development, the way he visualizes his environment and his response to that perception. We will try to understand these relationships with reference to the process-reactive dimension.

Perceptual Styles

Most of the research in the area of perception with schizophrenics has been based on a deficit model. Yates (1966, 1970) proposed that schizophrenics are not able to process information as quickly as normals do. Schizophrenics tend to act with only a part of the information and are, therefore, deficit in their storage of

information. With Yates' theory as groundwork, investigators began to question the information processes of schizophrenics by looking at their perceptual discriminations.

Prior to Yates' (1966, 1970) studies, it was found that schizophrenics require more time than normals to perceive both single and multiple units (Harwood and Naylor, 1963). Later, Atkinson (1970) found that chronic schizophrenics were able to process half of the amount of information that normals did. Both Neale, McIntyre, Fox and Cromwell (1969) and Neale (1970) found that paranoid schizophrenics, under conditions of an absence of visual noise or a limited number of irrelevant stimuli (two), were able to visually process as much information as normals. If visual noise or several irrelevant stimuli were present the schizophrenics tended to do worse than normals.

Rose (1973), Royer and Friedman (1973), and Young (1972) began to investigate the variable of irrelevant stimuli as a key to the information processing of schizophrenics. Rose used letter matrices projected by a tachistoscope with differing exposures, Royer and Friedman used designs and Young used alphabets to understand the effect of irrelevant stimuli on information processing in schizophrenics. They were attempting to investigate whether schizophrenics manifest a deficit behavior because

of some problem in information processing occurring at the input level.

All of this research and some other focusing on the perceptual activities of schizophrenics were concerned with a deficit model. Most of this research was attempting to specify the area of malfunction and very little attention was given to the qualitative characteristics or dynamics of the perceptual activities of schizophrenics. As was pointed out by Witkins, an individual's manner of cognitive functioning can be ascertained by his perceptual activities and defense mechanisms as they are characterological.

Perceptual Defense. There is a small body of data which proposes an alternative to the theory that schizophrenics are deficit in their perceptual abilities, as the deficit model presents some serious flaws and speculations. Sappington (1971) lists four criticisms of the deficit model.

> It involves drawing conclusions about perceptual processes based only on descriptive verbal processes...deficit is in the response mechanisms rather than in perceptual mechanisms (p. 17).
>
> Kantor and Herron (1966) seem to have ignored the properties of the stimulus itself as a determinant of both perception and response (p. 17).
>
> It requires the failure of repression to be accepted as cause...has not been demonstrated... (p. 17).
>
> It does not adequately separate the quality of a

> reactive schizophrenic's perception from that of a normal (p. 17).

An alternate body of research which proposes a more qualitative explanation of schizophrenia and perceptual processes is that of perceptual defense. The perceptual anomalies of schizophrenics are interpreted as a defense phenomenon rather than as an intrinsic perceptual defect.

Sappington (1971) proposed that there is a difference between the perceptual behaviors of process and reactive schizophrenics in relation to perceived threat, anxiety, and ego-defense coping operations. He proposed that process schizophrenics screen perceptual stimulation from their awareness while the reactives are acutely aware of incoming stimulation. He categorizes them respecitvely as repressors and sensitizers (Byrne, 1961). This repressor-sensitizer dichotomy is supported by Barry's (1967) research on the difference between the process and reactive schizophrenic's ability to tolerate anxiety. Barry (1967) concluded that the process schizophrenic did not experience as much anxiety as the reactive because the process schizophrenic is more defensive since he chooses to shun all anxiety by avoidance. On the other hand the reactive schizophrenic, according to Barry, under stresses of anxiety is prone to attempt to handle the stressful situation and is approach oriented.

Witkins' (1965) research would also support a perceptual defense position. Individuals tending to use massive avoidance and denial would be characteristic of limited psychological differentiation, the individual utilizing more global defenses and withdrawal. Before lending more support to a perceptual defense theory some explanation of it is necessary.

McGinnes, in 1949, found that there was a higher recognition threshold for emotional words than neutral words. The emotional words were classified as either implying sexuality or aggression. The response to these stimuli was labelled as "perceptual defense", referring to the blocking of anxiety arousing stimuli to conscious awareness. There was much criticim of McGinnes' (1949) results, but they stimulated research in the perceptual area. Brown (1961) found certain traits which were consistent in subjects who had high and low recognition thresholds of emotional words. He found that perceptual defense is present in individuals who use repressive defenses.

Byrne (1961), based on Brown's (1961) results of the relationship between perceptual defense and repression, developed a scale from the MMPI to differentiate repressors from sensitizers. He stated that repression and sensitization were opposite extremes of the continuum

of defenses. Repression, and denial constitute the "avoidance" pole while the defenses of intellectualization, projection and obsession constitute the "approach" pole.

Sappington (1970) pointed out that any individual can be ranked on Byrne's continuum, since whatever the individual's defenses they will be consistent (Eriksen, 1954; Lazarus, Eriksen, & Fonda, 1951; Stein, 1953). With the postulation of such a continuum is the implication that repression is both normal and necessary in all perception and is present to some degree in everyone. Sappington (1971) quotes Schaefer as stating:

> Repression holds a special position as defense, namely it appears to be ubiquitous...Psychoanalytic theory and observation indicate that repressive defense is to be accepted as a part of normal adult and normal personality organization...repression appears to be more or less built into most other defenses. The ubiquitous prominent of repression has led its being spoken of as the basic defense (p. 193).

In psychoanalytic theory, repression simplistically is defined as unconsciously purposeful forgetting or keeping something out of consciousness (Feinchel, 1945; Freud, 1946). Freud (1946) postulated two types of repression, classical and proper, which Sappington (1971) defines in the following manner. Classical repression is seen as a defensive operation which occurs as a result of some instinctual urge coming into conflict with the ego. Primitive urges such as sexuality and aggression would

not be allowed into conscious thoughts and would remain on an unconscious level. Proper repression is the expulsion of anxiety-laden material from consciousness which had been previously accepted into consciousness. Sappington (1971) notes that material repressed in classical repression is endogenous to the individual, while proper repression is called into action on initially exogenous material.

Byrne's (1961) theory is based on repression proper, a defensive operation which copes with exogenous stimulation. Using Byrne's Repressor-Sensitizer scale in investigating perceptual defense, results indicate that repressors tend to block threatening stimuli from awareness while sensitizers remain acutely aware and atuned to such stimuli. Results on Byrne's Repressor-Sensitizers scale also supports the notion that perceptual defense is the operational analogue of repression.

Sappington (1971) reports that the area of hypnosis, which is often used as a way to counter repression, lends further support for the connection between perceptual defense and repression. Scharf and Zamarsky (1963) and Kliman and Goldberg (1962) were able to reduce word recognition thresholds in their subjects through the use of suggestion while under hypnosis.

What Byrne's data as well as other has shown is

that individuals have characteristic modes of defense which are used under stress. Most individuals who employ a repressive defense mode tend to demonstrate perceptual defense when visually faced with anxiety producing stimuli. Those who employ sensitizing defense modes tend to react differently to anxiety producing stimuli, showing a lower recognition threshold than for neutral stimuli.

Perceptual Defense and Schizophrenia. As was stated earlier, the perceptual defense theory has not been researched very much in relation to the problem of schizophrenia, particularly within the process-reactive continuum. Sappington (1971, 1973) found that when nonsense syllables under neutral and shock conditions were presented, process schizophrenics showed impaired recognition of threat syllables while reactive schizophrenics showed heightened accuracy of recognition from the threat condition. Sappington was attempting to determine whether schizophrenics were perceptually deficient or whether they were engaging in an ego defensive operation. His results seem to support the latter hypothesis. According to Sappington (1971) the perception of the process schizophrenic is highly suggestive of perceptual defending. The process schizophrenic's perception tends to be diffuse and global, suggesting that the experimental stimuli had and anxiety arousing value and "exerted a detrimental

influence." The process schizophrenic tends to engage in an excessive amount of repression, falling on the avoidance end of Byrne's repressor-sensitizer pole. On the other hand, the reactive schizophrenic tends to engage in little repression. Rather, he becomes overly responsive to the input of anxiety provoking stimuli. In the case of the reactive schizophrenic, Sappington (1971) contended that microgenesis proceeds to completion thereby delivering all the threatening stimuli into consciousness.

The dynamics and theory of perceptual defense in schizophrenics appear to be supported in other research. Cromwell (1970) described two patterns which are characterized by levels of input of stimulus information, "high and low redundancy." The high redundancy group is one in which the individual tends to block out sources of stimulation and produce "sameness" in the perceptual field. The low redundancy group responds overinclusively to most of the stimuli in the perceptual field. It was found that the low redundancy group was typical of poor premorbids (process schizophrenics) (Cromwell, 1970).

Physiologically, Ward and Carlson (1966) found that when process and reactives were given a difficult perceptual discrimination task the process schizophrenics were less responsive than reactives or normal controls, and the reactive schizophrenics showed more autonomic

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arousal than eitherthe process or the normal group.

In summary, some of the data presented has suggested that schizophrenics suffer from an intrinsic perceptual deficit. The process perceptions are arrested at a poorly differentiated, global, immature and idiosyncratic level (Kantor & Herron, 1966). Kantor and Herron (1966) proposed that a deficit in perception operates irrespective of the content of stimuli. They contended that the reactive shows a more mature integrated consensual perceptual functioning, accounting very little for the quality of his performance with normals.

Other data supports a perceptual defense phenomenon operating in process and reactive schizophrenics indicative of a mature discrimination element not only in reactive schizophrenics but also process schizophrenics. Witkins (1965) and Byrne (1961) both have pointed out that individuals tend to behave in a consistent manner which is characterological. Witkins (1965) concluded that individuals who function in a global, diffuse, undifferentiated manner which according to Kantor and Herron (1966) is characteristic of the process schizophrenic, tend to use massive repression, denial, and are avoidance oriented. Those individuals who are highly articulate and by most definitions would be classified as reactives tend to intellectualize and are approach oriented in their

cognitive styles. Byrne (1961) described this same phenomenon, labelling the process schizophrenics as repressors and reactives as sensitizers, the opposite ends of a continuum of defense characterized by approach and avoidance behaviors.

Perceptual Defense and Approach-Avoidance. Higgins (1968) has suggested that process and reactive schizophrenics differ in the manner in which they cope with their environment. He proposed that process schizophrenics are "avoidance oriented" while reactive schizophrenics are "approach oriented" in their manner of coping with environmental stimuli.

An approach orientation to the environment may be characterized as one in which an individual is very "tuned-into" or "vigilant" for any conflictual situation which may be seen as threatening or anxiety-arousing. An avoidance orientation would be one in which the individual "tunes-out" or is aware very little of stimuli in the environment. Both these orientations are representative of a method or mechanism by which defense against stimuli which are perceived as threatening or anxiety provoking is carried out.

Though Higgins' (1968) referred to these behaviors as orientations to the environment, in essence when one considers how these terms are operationalized, it would

seem more appropriate to refer to them as "strategies" or "modes". In this case a strategy or mode would imply an active underlying cognitive process (conscious or unconscious) which would be inclusive and representative of past experiences.

Other research which seems to support or propose some of the same distinctions as Higgins' (1968) is the work of Byrne (1961). The basic assumption underlying Byrne's (1961) repressor-sensitizer continuum, which was discussed earlier, is that behavior consists of conscious and unconscious motivational activities. Higgins believes this to be true also of approach-avoidance behavior. Therefore an assumption which is implicit in the personality variables of the two continua, repressor-sensitizer and approach-avoidance, is that individuals are consistent in their defensive reactions to threatening stimuli over a period of time. Yet what repression-sensitization and other behavioral continua may have failed to take into account is that an individual may characterologically be classified at one end or another of the continuum, yet some behaviors may at times elicit responses from the other end of the continuum. Like the process-reactive continuum, the repression-sensitization and approach-avoidance continua may reflect some overlap and gradations. Therefore rather than being dichotomous,

each of these personality modes may represent a continuum based on the principle that though an individual may be characterized predominantly by one of the poles of the dimension behaviorally there may be some aspects on which he does not differ from the individual characterized by the other pole on the scale.

Hutt (1959) proposed a behavioral continuum very similar to that of Higgins' (1968) and Byrne's (1961). Hutt's continuum, abience-adience, is a perceptual measure of approach and avoidance. According to Hutt (1969) perceptual abience-adience is an underlying mode of adaptation in which individuals differ characteristically in the degree to which they are relatively more receptive to perceptual stimulation (adience) or less receptive (abience). In this continuum, like Byrne's (1961), perception is viewed as a form of adaptive behavior. Its operations reflect not only the characteristics of sensorineural processes but also the dominant needs, attitudes, and values of the individual. Perception involves selection on the part of the individual of a small part of a potentially large amount of stimuli to which he is exposed at any one time. Perceptually one chooses certain stimuli at the expense of not choosing others. What is habitually seen in any given perceptual situation is a function of the fixation of past perceptual responses

in similar situations. It is through these three processes--selection, accentuation and fixation--that the adaptive needs of the person find expression in perception (Bruner & Postman, 1947).

To better understand the underlying principles and rationale of abience-adience as presented by Hutt, one needs to understand the assumptions and axiomatic principle involved. Hutt's framework is built on psychoanalytic principle in which unconscious and conscious motivational factors play an important role. Hutt believes that all behavior from the simple to the most complex is a result of the interplay of conscious and unconscious factors. Such interplay involves the physical condition of the organism, its state of maturation, its prior experience, and its immediate state of expectancy at the time of the emergent behavior. In certain kinds of behavior, conscious factors may play the decisive role. The distinguishing feature of such behaviors is deliberate choice, instead of automatic or autonomic functioning in situations of conflict free spheres of operation. According to Hutt such behaviors of choice lie mostly in complicated performance as well.

An explanation of perceptual defense which is congruent with an follows from Hutt's theory is one which assumes unconscious perceiving or "subception." Given

the importance which Hutt places on unconscious and conscious factors, a perceptual defense theory involving subception is congruent in that the individual is seen as being capable of unconsciously perceiving or discriminating among stimuli that are of too low an intensity or too short a duration to yield conscious discrimination. This in essence means that the unconscious mind detects the presence of anxiety-laden stimuli and sets into operation defensive processes designed to prevent the conscious recognition of the stimuli. This position is supported by Blum (1955), Lazarus and McCleary (1951) and McGinnes (1949). Eriksen (1960), Eriksen and Browne (1956) and Eriksen and Kuethe (1956) completely disagree with the idea of subception as an explanation of perceptual defense. They conclude that there is no evidence that the human organism can make discriminations by any response system that are more accurate than those elicited by conscious (verbal) report. They deny that the phenomenon of defense exists in perception but rather that it is a manifestation of response variables and response effects. Eriksen and his associates felt that the problem of perceptual defense and unconscious perception has arisen from a failure by most researchers to distinguish between the individual's perception and his response. In explaining the distinction, Gardner, Hake, and Eriksen (1956)

define perception as what intervenes between stimulation and response, and the perceptual experience becomes more clear and more exact as you are increasingly successful in eliminating stimulus and response variables from it. They also point out that through the use of converging operations, response variables can be rules out and possibly eliminated from the general concept of perception. Eriksen and Browne (1956) proposed that perceptual defense can be explained in the learning principles of such theorists as Dollard and Miller (1950). If thoughts and associations are considered responses, then perceptual defense is explained merely as the effects of punishment on the probability of the occurrence of responses. They point out that, though it is empirically demonstrated that punishment leads to a decrease in the frequency of occurrence of the punished response, there exists a theoretical disagreement as to how anxiety produces the decrease in response occurrence.

On a more dynamic level and in line with Hutt's theory, Eriksen (1951a, 1951b, 1954) related the three processes of perception--selection, accentuation and fixation--to defense mechanisms as a way of explaining perceptual defense and vigilance. Based on the above three principles of perception, Eriksen states that different defense mechanisms would be employed, thereby producing

different perceptual orientations. The two main categories would be approach and avoidance. For example, in the case of repression or denial one might expect a tendency for the individual to manifest avoidance or higher duration thresholds for stimuli related to the sources of the conflict. On the other hand, those manifesting defenses of intellectualization, reaction formation, or projection might be prone to show a lower duration threshold for anxiety-related stimuli. There is some evidence to support the existence of individual differences in the perception of anxiety relevant stimuli (Postman & Solomon, 1950; Spence, 1957a, 1957b). These examples are descriptive respectively of the process and reactive schizophrenic.

Perceptual Defense and Scanning Behavior. Through the act of perception individuals detect and extract information from the environment, with the actual organizing of stimuli, classifying, and synthesizing, representing the perceptual act itself. Individuals are always scanning the environment seeking or avoiding certain objects. It would seem possible that this scanning behavior would be a function of the personality dimension of the individual in his interaction with his environment (Higgins, 1968).

In the act of perceptual scanning, one is able to

get a measure of differing characterological response dispositions, and also some conceptualization of what these differing responses involve. This is based on the fact that perceptual styles are representative of cognitive control processes (Witkin, 1965). Cognitive controls refer to a person's consistent mode or strategies of processing information and reacting across a wide range of situations (Wolitzky & Spence, 1962). Several researchers have conceptualized these control processes in terms of attention deployment strategies (Gardner, Holzman, Klein, Spence & Linton, 1959; Silverman, 1946a). Specifically, cognitive controls of attention have been defined in terms of individual differences in the extensiveness with which stimuli are sampled when attending to a sensory or perceptual field (field articulation control).

The regulatory constancy, such as scanning, serves to mediate the execution of adaptive intentions and the modulations of drive expression (Gardner et al., 1959). Gardner and also Klein (1954, 1958) conceptualize scanning as slow changing, developmentally stablized structures which have become automatically activated by different environmental demands. This notion of demands relates to the underlying motivation principle in abience-adience.

Piaget (1950) in his treatment of developmental factors related to attention, suggested that very early in the child's life his perception is subject to distortion. The young child's attention appears to anchor upon dominant objects in the stimulus field and automatically causes him to overestimate stimuli in the center of the field. Centration effects are an inherent aspect of the functioning of the perceptual system. In the course of development, the individual learns to minimize these misperceptions of apparent size by shifting his attention to and from the center of the perceptual field. Piaget reports in experiments with both children and adults that objects in the center of the perceptual field are overestimated. In studies of perceptual constancy, children tend to show underconstancy, and overestimate the near object. Adults tend toward overconstancy, overestimating the distant objects because they "center" more upon distant objects. Errors of overestimation of standard stimuli are regarded as instances of a general tendecy to measure less stable parts of the perceptual field (the variable stimuli) in terms of the more standard stimuli (Silverman, 1964a). Gardner (1961) and Gardner et al. (1959, 1961) found that individuals who scan a visual field extensively, repeatedly looking back and forth from one segment of the field to another, evidence minimal overestimation or underestimation

of a standard stimulus in certain size estimation procedures. On the other hand, limited scanning behavior is associated with large overestimation of standard stimuli.

In relation to schizophrenics, Harris (1957) showed that they evidence either marked or minimal scanning in comparison to normals who showed moderate scanning behavior. It was also hypothesized by Harris (1957) that such extremes could be related to type of symptom patterns, preillness history factors and the stage of psychotic disturbance.

In regards to defensive behavior, Silverman (1964) suggested that early in the development of a schizophrenic disorder, as such defense mechanisms as isolation, repression and denial become less and less effective, the individual begins to rely on the very basic forms of adjustive mechanisms. These mechanisms involve formerly "conflict-free" attention response dispositions. In a schizophrenic who scans extensively, this type of behavior may have been developed in reference to a set of environmental contingencies in which express scanning consistently led to attenuation in the intensity of anxiety. The schizophrenic learns that the most effective means of escaping or avoiding the anxiety is to be hypervigilant to the presence of cues which often precede or occur with the noxious events (Berlyne, 1960). Minimal

scanning schizophrenics appear to avoid anxiety by directing their attention away from the environment and onto internal processes. Based on sensory isolation studies (Rappaport, 1960; Werner & Wapner, 1955; Held & Hein, 1958), the turning out of attention cannot be thought of as a total shift of attention onto internal processes. Silverman sees two things as actually being involved: first, an anchoring of attention on dominant objects in the stimulus (minimal scanning); second, global and unarticulated attentiveness to sensory inputs. Therefore such attending tunes out much of the perceptual and conceptual input from other sources. There are data to support this theory on a neurological basis (Berlyne, 1960). DeVault's (1955) research, based on neurophysiological data, found an autonomic activation pattern among chronic schizophrenics in which response to sensory stimuli are present and response to ideational and physically noxious stimuli are inhibited, while reactive chronics showed no autonomic inhibition. Based on DeVault and Pearl's (1962) studies, Silverman concludes that process-chronic schizophrenics characteristically minimize or "tune-out" disturbing ideational inputs of both perceptual and conceptual types, while at the same time responding to sensory inputs. Reactive-chronic schizophrenics remain responsive to various ideational aspects of their

environment as well as to sensory stimulation but then regress to a genetically earlier form of scanning responsiveness. These studies seem to point toward some evidence of abient-adient behavior in the process and reactive respectively.

This thesis will attempt to evaluate Higgin's (1968) hypothesis that process schizophrenics, in their perceptual behavior are avoidance oriented while reactive schizophrenics are approach oriented in their perceptual behavior. Specifically, process schizophrenics will manifest avoidance of the environment by tending to perceptually focus on central cues on an encoding task with either appropriate or inappropriate cues, taking less time and committing fewer errors in accomplishing this task than do reactive schizophrenics. Process schizophrenics will also score in the abience direction on Hutt's Abience-Adience Scale. The reactive schizophrenics will tend to manifest approach behavior by diffusely attending to all cues in the perceptual task whether appropriate or inappropriate, thereby taking more time and having more errors. They will score in the adience direction on Hutt's Abience-Adience Scale. This will be tested by the following hypotheses.

1. On Hutt's Abience-Adience Scale:
   (a) process schzophrenics will score in the abient direction
   (b) reactive schzophrenics will score in the adient direction
   (c) normal will score in the adient direction

While a number of hypotheses and null hypotheses may be generated concerning the interaction of the variance of the diagnostic groups with the various adaptations of the Stroop, the following null hypotheses and hypotheses are critical to the intent of the experiment.

Null hypotheses 1: $P_{acap} = R_{acap}$

(Process schizophrenics with appropriate central and peripheral cues will perform the same as reactive schizophrenics with appropriate central and peripheral cues.)

Null hypotheses 2: $P_{icip} = R_{icip}$

(Process schizophrenics with inappropriate central and peripheral cues will perform the same as reactive schizophrenics with inappropriate central and peripheral cues.)

Nonrejection of these null hypotheses would be consistent with the theoretical hypotheses that the process and reactive schizophrenics are operating from the same baseline level of performance. If these null hypotheses are

not accepted, then statistical means of accounting for differing baselines must be employed.

Experimental hypothesis 1: $R_{icap} > P_{icap}$

(Reactive schizophrenics with inappropriate central and appropriate peripheral cues will perform better than process schizophrenics with inappropriate central and appropriate peripheral cues.)

Experimental hypothesis 2: $P_{acip} > R_{acip}$

(Process schizophrenics with appropriate central and inappropriate peripheral cues will perform better than reactive schizophrenics with appropriate central and inappropriate peripheral cues.)

These hypotheses, taken together, suggested that peripheral cues would have greater influence on reactive than process schizophrenics and central cues would have greater impact on process than reactive schizophrenics.

Experiment 1

Method

Subjects

There was a total of 81 subjects, with three groups of 27 subjects each. The subjects consisted of 27 male process schizophrenics and 27 reactive schizophrenics selected from the Veterans Administration Hospital, Downey, Illinois, and 27 non-hospitalized normal subjects.

The diagnosis of process or reactive was judged on the basis of a revised Phillips Scale (Phillips, 1953), a score of 12 or lower for the reactives and 18 or higher for the process. The Phillips Scale had been administered and scored prior to the experiment by a psychologist and by a research assistant on the hospital staff.

All schizophrenics diagnosed as paranoid or borderline based on the DSM II manual were excluded from the study. Many studies have shown that as a group, schizophrenics are more variable than normals and they are not an especially homogeneous population. It has been suggested by several investigators the paranoid-non-paranoid dichotomy in research should be further investigated because of its variability (Harris, 1957; Johannsen et al., 1963; Payne & Hewlitt, 1960; Silverman, 1964a; Venables, 1964). Therefore, it was decided not to include any subjects who were diagnosed as paranoid schizophrenics.

The control group was drawn from a population of male undergraduate students enrolled in an undergraduate course in Abnormal Psychology and a group of male, semi-skilled hospital workers and laborers. There were no previous psychiatric hospitalizations or drug abuse (including alcohol) reported by the subjects in the control group.

The criteria used in the selection of schizophrenic subjects were the following: (1) male subjects who were able to understand, follow instructions, and complete the entire task, (2) between the ages of 20 and 55, (3) no other known complicating pathology present (e.g., organicity, alcoholism), (4) total length of institutionalization was no longer than 15 years, and (5) a diagnosis of process or reactive prior to the experiment.

In selecting the normal subjects, the following criteria were used: (1) male subjects who were able to understand, follow instructions, and complete the entire task, (2) between the ages of 20 and 55, (3) no history of emotional disturbance requiring hospitalization or medication, and (4) no history of alcoholism or drug abuse.

The education variable for all groups was classified according to the following levels: (1) under 8 years of education, (1-7 yrs.), (2) grade school completed, (8 yrs.), (3) some high school, (9-11 yrs.), (4) high school completed, (12 yrs.), (5) some college, (13-15 yrs.), and

(6) college graduate and beyond, (16 yrs.). This breakdown was chosen based on the case history reports of the experimental group in which the education variable was reported at such intervals.

Analysis of Variance did not yield significant differences among any of the three groups on the matching variables age and education, and no significant difference between the two experimental groups on the variable of institutionalization. Table 1 presents the means, standard deviation, and F-ratios of the three groups on the matching variables.

Test Materials

Phillips Scale. The Phillips Scale of Premorbid Adjustment, (Phillips, 1953), provides ratings in five areas of pre-psychotic life and allows separation of schizophrenics into subgroups based upon the adequacy of premorbid adjustment. Under each of the five headings are descriptive statements of various possible levels of adjustment. Scores from zero to six are assigned according to the particular level of adjustment on each descriptive statement, as assessed from the patient's case history. A total score of 30 is the maximum that can be obtained. Reactives for the purpose of this study are those schizophrenics who obtained a score of 12 or lower, and process schizophrenics those who obtained a score of 18 or

TABLE 1

Means, Standard Deviations, and F-Ratios For Matching Variables

Variable	Group - Experiment 1 Process	Reactive	Normal	F
Age (years)				
Mean	38.15	38.00	32.70	2.31
S.D.	9.8	8.5	9.0	
Education*				
Mean	3.85	4.20	4.55	1.65
S.D.	1.08	1.05	1.27	
Total Institutionalization (months)				
Mean	7.75	10.0	--	2.60
S.D.	8.1	12.36	--	

*See categorization in method section on page 50.

higher. This arbitrary division allows for no overlap of the two groups resulting in relatively distinct and clearly defined groups for the purpose of the experiment. It is for this reason that borderline scorers on the Phillips Scale were not included.

The Phillips Scale has been reported as having adequate reliability (DeWolfe, 1968; Moriarity & Kates, 1962; Rodnick & Garmezy, 1957) and validity (DeWolfe, 1968) in determining the premorbidity of schizophrenics (i.e., in differentiating along the process-reactive dimension). DeWolfe (1968) presented validity and reliability of the Phillips Scale ratings from self-reports and case history information. The mean of interjudge rater reliability with case history ratings was .91 and for validity a contigent coefficient of .45

The Hutt Adaptation of the Bender-Gestalt Test. The Bender-Gestalt Test (HABGT) is a perceptual-motor task which attempts to understand an individual's conscious and unconscious motivations. It attempts to provide a sample of behavior which will offer information on cognitive functioning, specific defensive methods, maturational characteristics and style of adaptations (Hutt, 1960).

Hutt developed an Abience-Adience Scale of the Bender-Gestalt (see Appendix A) based on the hypothesis that an individual tends to relate to the world in an approach-

avoidance manner in which is manifested in a perceptual-motoric phenomenon known as abience-adience. Abience is defined as "general tendency to resist the input of information from the external world" while adience is the "tendency to seek out and utilize information from the external world" (Hutt, 1960, p. 25).

The Scale consists of 12 factors. Each factor is assigned a weight of +2 to -2 based on Hutt's criteria for performance on each of these factors, (see Appendix A). The Abience-Adience score is the algebraic total of the scores for the 12 factors. A constant of 20 was added to each score as suggested by Hutt to prevent any negative scores. Using the constant, the maximum score possible on the scale is +34 and the minimum is -1. Scores on the higher end of the scale indicate that the individual is adient. Adient individuals would tend to show more effective intellectual and interpersonal functioning than abient individuals. Hutt and Miller (1976) presented a high negative correlation between adience scores and measures of pathology. Adience, according to Hutt (1969) is related to more effective adjustment than is abience and can be inferred as related to capacity for making more effective use of one's experience. Abience tends to correlate significantly with severe pathology (Hutt & Miller, 1976) and is represented by scores at the lower end of the continuum.

Hutt's scoring for abience-adience appears to have adequate reliability in differentiating groups on measures of abience-adience. Hutt (1969) presents a .69 correlation between a high score on abience and psychopathology.

In establishing abience-adience in a schizophrenic group, Hutt tested two groups of schizophrenics. One group had been hospitalized for less than six months and the other for more than 5 years. It was assumed, therefore, that the two groups differed in severity of psychopathology. The long term hospitalized group had a mean of 22.6; the difference between the means was significant at the .01 level. In later studies Hutt and Miller (1975; 1976) found the Abience-Adience Scale to be reliable in differentiating groups of schizophrenics differing on their levels of psychopathology.

Other materials included a number of medium-soft pencils (number 2), a stack of white unlined 8½ x 11 bond paper, a pencil eraser and the Hutt Adaptation of the Bender-Gestalt cards.

Procedure

All subjects were tested according to the administration procedures of Hutt's Adaptation of the Bender-Gestalt Test (HABGT). The test was administered as follows:

Copy Phase. The experimenter placed the stack of bond paper and the pencils near the subject in a conveniently accessible position. She then placed the nine HABGT cards in front of herself, on the table, with the designs in a face-down position. The backs of the cards were thus exposed, in a place so that the subject could see that there were a number of them, but was not told how many there were. The following instructions were given, "I am going to show you these cards (pointing to the pile) one at a time. Each card has a simple drawing on it. I would like you to copy the drawing on the paper as well as you can. Work as fast or as slowly as you wish." Any questions by the subject were answered by paraphasing the above, no suggestions regarding the manner, method of completing the task or the like were given.

The first test card, Card A, was then taken from the stack of cards, and placed in front of the subject with the base of the card (as indicated by the letter on the back) toward the subject. The instruction, "Copy this as well as you can," was repeated. When the subject finished his reproduction of the design on Card A, the experimenter removed this card from sight, and then placed Card 1 directly in front of the subject with the comment, "Now copy this drawing as well as you can." As in the placement of all cards, the base of the card, indicated by the number on

the back, was placed toward the subject. When Card 1 had been completed, it was removed and Card 2 placed in position. This procedure was continued until all test cards had been administered. The Elaboration, Association, and Recall Phases were also administered, but this information was not used in this thesis.

Scoring

The Copy Phase of the HAGBT protocols were scored according to Hutt's scoring system for the objective scales of Abience-Adience and Psychopathology.

Experiment 2

Payne and Friedlander (1962) and Epstein (1953) have proposed that overinclusive thinking and abnormal perception in schizophrenics may be due to a general distractibility consisting of a disorder of attention. This disorder may be reflective of a defect of a hypothetical "central screening mechanism" which normally functions to exclude irrelevant stimuli (both internal and external) so as to allow processing of incoming stimulation.

Most research on attention-deficit in schizophrenics has found that process schizophrenics perform worse than reactives on most tasks and do more poorly as the difficulty of the task and the amount of distraction increases. Yates' (1966) theory of central processing yields similar

expectations in that, if a task requires an increase in the number of operations which must be performed, it becomes more difficult and the rate of increase in reaction time will be some function of the product of the number and the time per operation. Yates points out that as time to perform an operation increases the amount of stored information lost per unit should also increase. Therefore, it follows that loss of information should produce differential error rates.

Based on the above information an adaptation of the Stroop Color Word Test was included which added an additional source of distractibility to the original Stroop format. Since process schizophrenics have been described as avoidance oriented, perceptually immature repressors who tend to screen from their awareness anxiety-producing material and are underinclusive of stimuli in general, on a task (such as the Stroop Color Word Test) involving a number of irrelevant and noncongruent stimuli they should perform less operations as they tend to visually focus or "center" on material. Therefore, the process schizophrenic should take less time and make fewer errors than the reactive schizophrenic who perceptually responds by attending to all cues in the tasks, therefore, having to perform more operations, taking more time and increasing the likelihood of errors.

Subjects

There was a total of 48 subjects with three groups of 16 each. Subjects were 16 male process schizophrenics, 16 male reactive schizophrenics, and 16 non-hospitalized normals. All were subjects in Experiment 1, but due to a loss of data only data for 48 of the 81 subjects could be analyzed for Experiment 2.[1] The groups were matched on the variable of age, education and total institutionalization.

Table 2 presents the means, standard deviations and F-ratios of the three groups for the matching variables. An Analysis of Variance shows no significant difference among the three groups on any of the variables.

Materials

Adaptation of the Stroop Color Word Test. The Stroop Color Word Test is a test of selective attention in which color names are printed in noncongruent colors, (e.g., the word green may be printed in the color yellow). It has been suggested that the competitive response of reading the color word is stronger and interferes with color naming (Jensen & Rohwer, 1966; Stroop, 1935).

The adaptation of the Stroop Color Word Test consisted of four white cards 6 x 9 inches, each representing one of the four conditions in the Adaptation of Stroop's Color Word Test (ASCWT) (see Figure 1). Each card consisted of four rows with 7 rectangular stimuli in each row, 1 x ½ inch, for

TABLE 2

Means, Standard Deviations, and F-Ratios For Matching Variables

Variable	Group - Experiment 2 Process	Reactive	Normal	F
Age (years)	(N=27)	N=27	N=27	
Mean	36.68	36.43	35.56	.011
S.D.	9.36	11.79	5.41	
Education*				
Mean	3.68	4.31	4.31	1.94
S.D.	0.93	0.79	1.30	
Total Institutionalization (months)				
Mean	14.06	12.37	--	.1153
S.D.	13.40	12.08	--	

*See categorization in method section on page 50.

Figure 1

4 Conditions of the ASCWT

Border:	Blue (Central)
Color Name:	Red
Color Name Written In:	Purple (Peripheral)

Condition 1
Inappropriate Central Cue
Inappropriate Peripheral Cue

Border:	Red
Color Name:	Red
Color Name Written In:	Red

Condition 2
Appropriate Central Cue
Appropriate Peripheral Cue

Border:	Blue
Color Name:	Red
Color Name Written In:	Red

Condition 3
Appropriate Central Cue
Inappropriate Peripheral Cue

Border:	Red
Color Name:	Red
Color Name Written In:	Blue

Condition 4
Inappropriate Central Cue
Appropriate Peripheral Cue

a total of 28 stimuli on each card. The rows consisted of the words "red," "yellow," "blue," "green," and "orange," printed in these various colors and surrounded by a border in one of these five colors.

Each card was indicative of one of four conditions of encoding interference. Condition 1 was a base line condition with the greatest amount of interference because the color of the border, the color of the print, and the name of the color were all different. It represents a task in which both the central and peripheral cues are inappropriate to the task completion and, therefore, serve as sources of interference. Condition 2 also represented a base line condition since it represented the least amount of interference; the name of the color, the color of the print and the border were all the same. In this condition the central and peripheral cues are appropriate to the task completion. Condition 3 represented a conflict situation in which the central cues are appropriate and the peripheral cues inappropriate to the task completion. That is, the color name and the color in which this name was printed were the same but the border was a different color. Condition 4, also a conflict situation, represented another type of interference; the central cues are inappropriate and the peripheral cues appropriate. That is, the border and the color name were the same but the print of the color differed from the color used in the border and the color name.

The assignment of a specific color to the border, the color print written and the color name were done in a block randomization with each combination appearing twice with the deck of cards.

Procedure

After the HABGT administration was completed, the ASCWT was then administered to subjects with the following instructions:

> I am going to show you a chart containing several boxes, and I want you to read aloud the printed word, which is the name of a color appearing inside the box. You are asked to do this as quickly as you can, if you make a mistake, do not worry about it; continue and go on to the next one. You are to read the names starting on the left (pointing in that direction) and going to the right until you have reached the end of the row and so on until you have finished the entire card. Do you understand what I want you to do?

If the subject did not understand the procedure, the experimenter paraphrased the above directions. When it was clear the subject understood, he was asked by the experimenter, "Are you ready?" and was presented with Card 1, 2, 3, and 4. The Card was usually laid on the table before the subject with the experimenter indicating the point at which the subject was to begin. If the subject chose to hold the card or view it at any specific distance from his eyes this was permitted since it was not a test of visual acuity.

Scoring

Appendix B presents the scoring sheet used by the experimenter to record errors and time in seconds for each of the four cards. If the subject named an incorrect color the experimenter would put a slash through the color which should have been named. Time for completion of each condition was recorded in seconds with the aid of a stop watch. Time for completion and number of errors were used as sources of comparison for the three groups and as a measure of differentiation between the two groups of schizophrenics as perceptual measures of approach and avoidance.

Results

Experiment 1

In order to test the hypotheses that process schizophrenics are adient in their perceptual behavior, scoring in the adient direction of Hutt's Abience-Adience Scale and reactives and normals are abient, a one-way Analysis of Variance was computed relating diagnosis to total algebraic scores on Hutt's Abience-Adience Scale. The means for the three groups were as follows: process, M = 25.05, reactive, M = 26.10 and normals, M = 28.10. The F-ratio (2, 57) = 3.25, $p < .05$, indicates there is a significant difference on the measures of abience-adience among the means of the three groups. Duncan's Multiple Range Test was employed to determine which of the differences among the means were significant and which were not. Table 3 presents the results. As can be seen in Table 3 by comparing treatment means which are underscored and connected, at the .05 probability level, process schizophrenics (M = 25.05) do not significantly differ from reactive schizophrenics (M = 26.10) on the measure of abience-adience. Reactive schizophrenics do not significantly differ from the control group on a measure of abience-adience though process schizophrenics scored significantly lower (toward abience) than the control group (M = 28.10) on Hutt's Abience-Adience Scale. The hypothesis that process schizophrenics would

TABLE 3

Duncan's Multiple Range Test For Significant Differences Among Means On Results of Hutt's Adience-Abience Scale

	Means	Process	Reactive	Control	Shortest Significance Range
Process	25.05	--	1.05	3.05	$R^2 = 2.43$
Reactive	26.10	--	--	2.00	$R^3 = 2.55$
Control	28.10	--	--	--	

Any two treatment means underscored by the same line do not significantly differ.

Any two treatment means not underscored by the same line significantly differ

significantly differ from reactives by scoring in the adient direction on Hutt's Abience-Adience Scale was not supported. Process schizophrenics did tend to score lower, in the abient direction, but not significantly lower.

Experiment 2

A 3 x 4 Factorial Design with repeated measures was used to test the null and experimental hypotheses. Table 4 presents the summary table of the Analysis of Variance testing the hypotheses related to the dependent variable of time. (The hypotheses based on errors were not supported as there were only two errors recorded in the total 81 protocols.) The F-ratio of Table 4 indicates that the overall main effect for groups based on diagnosis in the three groups is significant at the .01 level (F (2, 45) = 6.60, $p < .01$).

Probing the treatment mean sums of the overall main effect for groups based on diagnosis with Duncan's Multiple Range test at the .05 level yields a pattern of significance in which the greatest significant difference is between the reactive and control group (M = 15.23), next the process and the control group (M = 9.23) and lastly the reactive with the process group (M = 6.02).

There is a significant difference on the variable of time for the interaction of the three groups based on diagnosis with four encoding tasks based on degree of interference of the ASCWT (F (6, 135) = 2.86, $p < .05$).

TABLE 4

Summary of the Analysis of Variance of the Adaptation of the Stroop Color Word Test on the Variable of Time

Source of Variation	df	Ms	F
Between Subjects (Diagnosis) (A)	47 / 2	394.00	6.60**
Subjects Within Diagnosis	45	59.70	
Within Subjects (Tests) (B)	144 / 3	169.51	3.70*
(Diagnosis X Tests Effects) (AB)	6	45.83	2.86*
(Subjects Within Diagnosis) (B X Subjects)	135	16.01	

**P < .01 (2.45) = 5.18

*p < .05 (6.136) = 2.17

Duncan's Multiple Range Test was used to further probe the significant differences among the treatment means the results of which can be used to ascertain support or rejection of null hypotheses 1 and 2 and experimental hypotheses 1 and 2. Table 5 shows the results.

Support for the null hypothesis 1 that process schizophrenics with appropriate central and peripheral cues perform in a similar manner to reactive schizophrenics with appropriate central and peripheral cues on a task of encoding interference was found based on the Duncan Multiple Range Test (see Table 5). Table 5 also shows support for null hypothesis 2 in which process schizophrenics with inappropriate central and inappropriate peripheral cues perform in a similar manner to reactive schizophrenics with inappropriate central and inappropriate peripheral cues on a task of encoding interference. Therefore, it appears that process and reactive schizophrenics are operating from a common baseline under conditions that are expected to be either equally distracting or equally non-distracting (facilitating) to both process and reactive schizophrenics.

Looking at Table 5 support was not found for either of the experimental hypotheses. Experimental hypothesis 1 stated that reactive schizophrenics with inappropriate central and appropriate peripheral cues would perform better than (take less time and commit fewer errors) process schizophrenics with inappropriate central and appropriate

peripheral cues. This was not supported. Experimental hypothesis 2 that process schizophrenics with appropriate central and inappropriate peripheral cues will perform better than (take less time and commit fewer errors) than reactive schizophrenics with appropriate central and inappropriate peripheral cues was not supported. Consequently, there is no conclusive evidence that reactives are more sensitive to peripheral cues than are process schizophrenics while process are more sensitive to central cues.

A Pearson product-moment correlation (see Table 6) was done to determine if there was a correlation between Hutt's Abience-Adience scores and the ASCWT as both were used as perceptual measures of approach and avoidance for all three groups. The total algebraic scores of Hutt's Abience-Adience Scale and the time variable of the four conditions of the ASCWT were used in this correlation. As Table 6 indicates the only significant correlation, is a negative one for the process group between condition two (AcAp) of the ASCWT and Hutt's Abience-Adience scores for that group.

TABLE 6

Pearson Product Moment
Correlations Between Hutt's Scores
of Abience-Adience and the
Adaptation of Stroop's Color
Word Test on Time Variable

N = 48

Hutt's Scores	Adaptation of Stroop's Color Word Test			
Abience-Adience	Cond 1	Cond 2	Cond 3	Cond 4
Process	-0.38	-0.64**	-0.02	-0.00
Reactive	-0.15	0.07	0.10	0.12
Control	0.01	-0.04	0.05	-0.05

**p < .01 .623

Discussion

The lack of support for the critical hypotheses may be the result of several factors. One possible contributing factor is the limitations of the sample population. The G.I.Q. used to determine process-reactive status, was administered to both experimental groups shortly after admissions. Looking at Table 1 and 2, the mean length of hospitalization at the time of testing for process schizophrenics ranged from 7 to 14 months and for the reactives 10 to 12 months. It is possible that during this time period between the administration of the G.I.Q. and participation in this study, symptoms of the process and or reactive schizophrenics could have been in remission. The data does not entirely support this as there are instances of significant differences between the two groups but it may explain the inconsistency of these results as some subjects may have been in remission while others were not.

Another sampling problem which may account for the lack of consistent findings is there was no control exerted over drug therapy or any other forms of treatment. All individuals participating in the study were able to follow the directions and completed the tasks as instructed but it is possible that in the case of some subjects the medication may have had an effect on their cognitive and perceptual-motoric behavior.

The control group was diverse, including a sampling of college students and semi-skilled hospital workers. The control group was diverse in an attempt to match the experimental groups on factors of age and level of education. This diversity may have introduced more variance and, therefore, been a source of increased error variance. This potential source for increased error variance along with another, a research assistant collected some of the data for the control group and there was no attempt to balance the experimenter variable, may contribute to explaining the inconsistencies of results in this study.

Looking at the results of the experiments, Experiment 1, utilizing Hutt's scoring system for the Bender-Gestalt Test to arrive at a measure of abience-adience support was not found for the hypothesis that process schizophrenics would score in the abient direction and reactives and normals in the abient direction. Looking more closely at the means of Table 3, it can be seen that there does appear to be a possible linear trend in the results. Process schizophrenics tend to have the lowest scores, followed by higher scores for the reactives and the highest scores for the control group. This pattern follows the hypotheses in that high scores are reflective of adience (+34 maximum) and low scores of abience which correlates with pathology. The scores unfortunately are not sufficiently different to support this hypothesis at a statistically significantly level though when the means

are probed further the trend appears to be in the direction predicted. The problem is that the results contradict those of Experiment 2. Looking at Duncan's Multiple Range Test in Table 3 the process schizophrenics differ significantly from the control but not from the reactive schizophrenic. Experiment 2 which is also designed to be a measure of perceptual approach-avoidance behavior, the process performed most like the control group and least like the reactive group (consistent significant differences were not found). The inconsistency of the results of the two experiments raises two issues for consideration, validity of the test instruments (HABGT and ASCWT) and the equivocation of Hutt's conception of abience-adience with Higgins' concept of approach-avoidance behavior.

Hutt reports empirical data supporting the validity of his scale as a perceptual measure of abience-adience (Hutt, 1969; Kachoreck, 1969; McConville, 1970) though he points out that each of these studies did not address themselves to the question of reliability other than by inference. Hutt and Miller (1975) did investigate the scale's reliability in perceptually measuring abience-adience. They reported a test-retest reliability rho of .84 which was significant at the .01 level. They also report a high interscorer reliability (Spearman rho of .912) in scoring the scale for abience-adience. Yet the question of the reliability of Hutt's Abience-Adience Scale is still of concern. The

author agrees with Hutt and Miller's (1975) suggestion that there is a need to further evaluate the reliability of the scale. The results of Experiment 1 seem to indicate the scale is insensitive to differences between groups such as the process and reactive schizophrenics.

Initially the Adaptation of the Stroop Color Word Test appeared to be an adequate measure of encoding interference, functioning on much the same theoretical bases as the Stroop itself. It may be possible, however, the test was too simple to really be discriminatory. It appears that the overall task was too easy and, therefore, not sensitive to errors and the manipulations were not discriminating enough particularly to rely on time as a dependent variable.

The question remains as to whether the two tests were actually measuring the same aspect of behavior. Table 6 presents the results of the correlations between the HAGBT and the ASCWT. As can be seen the only significant correlation is a negative one of the process schizophrenic group with condition two (appropriate central and peripheral cues) on the ASCWT. This seems to imply that being process, scoring in an abient direction is inversely correlated with completing an encoding task quickly when both cues are appropriate to the task completion. Just the opposite was predicted for this experiment.

Hutt and Miller (1975) caution against the equating of abience-adience with such factors as selective inattention

or perceptual vigilance, which some argue the Stroop measures. Hutt conceives of his Abience-Adience Scale as measuring a primary defensive operation (Hutt & Miller, 1975) as manifested in perceptual motoric behaviors. They feel that the perceptual approach-avoidance behavior is a primary stylistic mode of the infant mediating internal and external experiential data. According to Hutt and Miller (1975) this mode serves as a foundation in the later development of other defensive and coping behaviors. They state that though there may be a correlation between abience-adience and other concepts such as perceptual vigilance and selective inattention and field dependence they are not identical. Therefore, the ASCWT, which is based on the Stroop, and the HABGT could well be measuring different behaviors. Abience-adience is seen as a more basic and primitive mode of behavior being learned earlier than other concepts. It appears that Hutt and Miller's (1975) distinction could be a developmental one. Adience and abience could well be the basic foundation of perceptual vigilance, perceptual defense, or selective inattention. The behaviors of approach and avoidance in process and reactive schizophrenics as described earlier in this thesis by Higgins may well reflect a concept which is different from Hutt's concept of abience-adience. Higgins' approach-avoidance description may be the manifestation of a later stage of abience-adience.

The results of Experiment 2 yielded some interesting data in regards to the two experimental groups. Probing the main effects on the ASCWT (see Table 4) by Duncan's Multiple Range Test, a pattern of R < P < C was yielded. The greatest significant difference is between the reactive schizophrenics and the control group, next the process schizophrenic and the control group and lastly the reactive with the process group. A possible implication of this finding is that as you introduce greater variability in the tasks, the reactive schizophrenics are less adept at handling complex tasks than the process and control groups. The finding may also indicate that reactives are simply less efficient than process who in turn are less efficient than normals on tasks involving potential distractors whether the distractors are central or peripheral to the target stimuli.

SUMMARY

The purpose of this study was to investigate Higgin's (1968) suggestion that process and reactive schizophrenics differ not only quantitatively in level of adjustment, but also qualitatively in their adjustment, in terms of orientation to the environment. That is, Higgins sees process schizophrenics as avoidance oriented, and reactive as approach oriented, "abient-adient", in their general reactions to the environment.

It was the purpose of this study to examine whether these directional tendencies could in fact be demonstrated empirically. It was hypothesized in this study that on two perceptual tasks, Hutt's Adaptation of the Bender-Gestalt Test and a specially constructed Adaptation of the Stroop's Color Word Test, process and reactive schizophrenics would reflect abient or adient orientations to the environment. Specifically, process schizophrenics would avoid the environment (abience), tending to visually center on material, while reactive schizophrenics would approach the environment (adience), tending to visually scan a wide variety of material regardless of its relevance to the task.

The present study has resulted in non-supportive results in regards to the hypothesis that schizophrenics classified as process and reactive are avoidant and approach

oriented in their perceptual behavior respectively. This lack of support for the critical hypotheses may have been the result of several factors. This inconsistency of the results raised at least two issues for consideration, the validity of the test instruments (HABGT and ASCWT) and a questioning of the empirical reality of the constructs under investigation in this study--abience-adience and approach-avoidance in terms of behavior. Design problems such as sampling limitations were also noted in this study as a possible factor, in the inconsistencies of the results.

Future research in this area may want to further explore the concept of abience-adience and approach-avoidance in its relationship to the process-reactive continuum as this has not been completely ruled out by the results of this study. The question of a probable relationship between the behaviors of abience-adience and styles of perceptual defense or coping strategies also seem to follow as an area for further research. In addition, the issue of reactives being developmentally closer to normals in their perceptual abilities than process schizophrenics seem to be seriously questioned by this study and merits further study. Research along these lines would represent a significant contribution in further developing the dimensions of the process-reactive continuum as a way of understanding schizophrenia.

FOOTNOTE

[1]Some of the original protocols with the raw data were stolen. The author did have recorded the scores of most of these protocols.

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APPENDIX A

APPENDIX A

SCALE FOR ADIENCE-ABIENCE

Circle weights and add algebraically.

Weight	Factor	Weight	Factor	Weight	Factor
-2	Space, 1	+1 -2	Mod. Clos. Diff., 6a Marked Cl. Diff., 6b	+2 -2	Rot. Abs. 9a Rot. Sev. 9b
-2 -2	Height, 2a Height, 2b	+1 -2	No Cross. Diff., 7a Marked Cr. Diff., 7b	+2 -2	No. Frag. 10a Frag. Sev. 10c
+1	Use of Page, 3	+2 +2 -2	Incr. Angul., 8a Incr. Angul., 8b Decr. Angul., 8c	+1 -1 -2	No. Simpl., 11a Mod. Simpl., 11b Marked Simpl., 11c
+1 -2	Method. Seq., 4a Irreg. Seq., 4b				
+2 -1	1st Fig., Norm, 5a 1st Fig., Abn. 5b			+1 -2	No. Elab., 12a Marked Elab., 12b

TOTAL SCORE = _____

APPENDIX B

APPENDIX B

Scoring Sheet
Colors to be Named by Subject

Condition 1

RED BLUE RED GREEN RED
GREEN

GREEN GREEN RED GREEN
ORANGE ORANGE

ORANGE BLUE BLUE GREEN
BLUE RED

ORANGE RED ORANGE BLUE
ORANGE BLUE

Condition 2

RED BLUE RED GREEN RED
GREEN

GREEN GREEN RED GREEN
ORANGE ORANGE

ORANGE BLUE BLUE GREEN
BLUE RED

ORANGE RED ORANGE BLUE
ORANGE BLUE

Condition 3

RED BLUE RED GREEN RED
GREEN

GREEN GREEN RED GREEN
ORANGE ORANGE

ORANGE BLUE BLUE BLUE BLUE
RED

ORANGE RED ORANGE BLUE
ORANGE BLUE

Condition 4

RED BLUE RED GREEN RED
GREEN

GREEN GREEN RED BLUE
ORANGE ORANGE

ORANGE BLUE BLUE GREEN RED
RED

ORANGE GREEN ORANGE BLUE
ORANGE BLUE

APPROVAL SHEET

The thesis submitted by Vickie M. Mays
has been read and approved by the following committee:

Dr. James Johnson, Director
Associate Professor, Psychology, Loyola

Dr. Thomas Petzel
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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

June 22, 1978
Date

James E. Johnson
Director's Signature