A VALIDATION STUDY OF THE DIFFERENTIAL PERSONALITY INVENTORY (DPI).

PATRICK B. KAVANAUGH

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A VALIDATION STUDY OF THE
DIFFERENTIAL PERSONALITY INVENTORY (DPI)

by

Patrick B. Kavanaugh
M.A., University of Detroit, 1970

A Dissertation
Submitted to the Faculty of Graduate Studies through
the Department of Psychology in Partial Fulfillment
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Windsor, Ontario, Canada

1975
Abstract

This research study was designed to investigate the validity of the various scales of the Differential Personality Inventory (DPI) with a psychiatric population (N=60). The DPI was administered to the first 60 consecutively admitted patients to the Inpatient Service of the Detroit Psychiatric Institute who agreed to participate in the research investigation. The Psychotic Inpatient Profile (PIP) and the Whitaker Index of Schizophrenic Thinking (WIST) were the criterion variables against which the DPI scales were to be validated.

The central question that was explored: Are the predictor variables (DPI) related to the criterion variables (PIP and WIST)? The analysis of data relied mainly upon simple correlations between these two sets of variables.

Bartlett’s test (1950) was used to test the matrix for significance ($X^2 = 681; df = 378; p < .001$). While the predictions concerning the relationships between the predictor variables and the criterion variables were not very accurate, the results of this study indicate that some of the DPI variables (Cynicism, Depression, Infrequency, First Factor, Psychotic Tendencies) have demonstrated validity in this population. These scales were able to identify individuals with certain psychopathological characteristics, and, to differentially sort out these various individuals on the basis of the type of manifest psychopathology. Further research with the DPI is indicated.
Acknowledgements

I wish to express my gratitude to the members of my Dissertation Committee for their valuable suggestions, comments, and assistance; Martin Morf, Ph.D.; Roland Englehart, Ph.D.; Marvin Hyman, Ph.D. and Frank Auld, Ph.D. I particularly wish to express appreciation to my Committee Chairman, Frank Auld, Ph.D. for his invaluable counsel on all aspects of this Dissertation. It has been my good fortune to work closely with Dr. Auld throughout my clinical training at the University of Windsor.

I would also like to express gratitude to the ward staff of 4A, 5A, and 6A of the Detroit Psychiatric Institute for their cooperation and their conscientious involvement in the data collection; also, to Joe Hebel, M.S.W. for his assistance in coordinating and supervising the data collection.

Various friends, colleagues and supervisors have contributed to making this Dissertation possible. I would like to express my sincere appreciation to: James Kiellor, Ph.D.; Ralph Epstein, Ph.D.; Shukri Amin, Ph.D.; Jack Schinn, Ph.D.; and especially Marvin Hyman, Ph.D.

Finally, I would like to express my deepest gratitude and appreciation to Linda, my wife. Throughout my graduate training, she has made tireless contributions, valuable suggestions, and has been a constant source of support. In many ways, she is a silent author of this Dissertation.
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CHAPTER I

INTRODUCTION

The development of more adequate and sophisticated measuring scales has been of major interest to those concerned with assessment of personality traits in general and psychopathology in particular. Jackson (1964) has developed a personality questionnaire, The Differential Personality Inventory Form-L (DPI) which is based upon a rational rather than empirical method of test construction. This instrument is believed to provide measures of traits relevant to psychopathology. However, it has yet to be validated with a psychiatric population.

This research investigation is part of that effort to determine the validity of the DPI scales. The validation of this instrument has considerable practical significance, especially when one considers the potentials of computer diagnosis in personality assessment. Any method of computer-assisted diagnosis should make use of the most sophisticated test data available. The results of this study may prove to be useful as a platform for computer-assisted diagnosis of psychiatric patients.

The purpose of this study then is to investigate the validity of the Differential Personality Inventory Form-L (DPI) with a psychiatric population. The DPI was administered to the first 60 consecutively admitted patients to a psychiatric facility who were capable of
and agreeable to participating in the research investigation. The Psychotic Inpatient Profile (PIP) and the Witaker Index of Schizophrenic Thinking (WIST) were the criterion variables against which the DPI was validated. The central question explored was: Are the predictor variables (DPI) related to the criterion variables (PIP, WIST)? Analysis of the data will rely mainly upon simple correlations between the two sets of variables. It is expected that the criterion variables (WIST and PIP scales) will covary with the predictor variables (DPI scales) as their scale names would suggest.

The Differential Personality Inventory

The Differential Personality Inventory (DPI) Form-L is an objective test of personality traits developed by Jackson (1964) for the purpose of measuring variables believed to be relevant to psychopathology. The instrument consists of 15-20-item scales. Twelve of these 15 scales were developed to assess substantive dimensions of psychopathology in both males and females: Cynicism, Depression, Familial Discord, Health Concern, Hostility, Impulsivity, Irritability, Neurotic Disorganization, Psychotic Tendencies, Rebelliousness, Socially Deviant Attitudes, and Somatic Complaints. Three of the 15 scales were primarily developed as Validity Scales: Defensiveness, First Factor, and Infrequency (Jackson and Carlson, 1973). Scale construction for the DPI was
accomplished through substantively defined item pools prepared for each scale. A sequential strategy of item selection was then utilized yielding the 300 items to be answered either True or False. The scales, their reliabilities, and example items are listed in Table 1. Jackson and Carlson define the Validity scales in the following manner:

"The validity scales included Infrequency, which consists of highly improbable items designed to identify nonpurposive, invalid responding, Defensiveness, a scale in the tradition of the MMPI Lie scale and the Marlowe-Crowne "Social Desirability" scale; and the First Factor scale, which reflects a combination of valid, substantive, psychopathological content and tendencies to respond in an undesirable manner."

Jackson and Carlson, 1973, p215

The self-rating personality measure used in the same study further defines the DPI scales. Each subject was asked to rate himself on 13 bipolar dimensions. The self-ratings and the name of the corresponding DPI scale are reported in the study as follows:

<p>| Skeptical of others | 1 2 3 4 5 6 7 8 9 | Trusting of others | (Cynicism) |
| Cheerful, happy | 1 2 3 4 5 6 7 8 9 | Pessimistic | (Depression) |
| Critical of Family | 1 2 3 4 5 6 7 8 9 | Close family ties | (Familial Discord) |
| Seeks to maintain well-being | 1 2 3 4 5 6 7 8 9 | Unconcerned about health | (Health Concern) |
| Aggressive | 1 2 3 4 5 6 7 8 9 | Benevolent | (Hostility) |
| Self-controlled | 1 2 3 4 5 6 7 8 9 | Impulsive | (Impulsivity) |
| Irritable | 1 2 3 4 5 6 7 8 9 | Easy going | (Irritability) |</p>
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* Example items for each of the DPI scales may be found in Jackson and Carlson's article (1973, p 215).
Well organized 1 2 3 4 5 6 7 8 9 Disorganized
Compliant 1 2 3 4 5 6 7 8 9 Rebellious (Neurotic Disorganization)
Believe in looking out only for myself 1 2 3 4 5 6 7 8 9 Feel responsible to others (Rebelliousness)
Resistant to illness 1 2 3 4 5 6 7 8 9 Susceptible to illness (Socially Deviant Attitudes)
Stupid 1 2 3 4 5 6 7 8 9 Intelligent (Somatic Complaints)
Excellent mental health 1 2 3 4 5 6 7 8 9 Neurotic (Psychotic Tendencies)

Four research investigations pertaining to the DPI have been reported in the literature. Partington and Johnson (1968) investigated the prevalent assumption that alcoholics are homogeneous with respect to variables other than uncontrolled drinking behavior. An experimental form of the DPI (Form A) was administered as their psychometric measure to the 186 male alcoholics that comprised the sample. The reliability estimates obtained for the 12 substantive scales ranged from .64 for Rebelliousness to .86 for Depression. Their analyses of the data identified five distinct stable and replicable personality types.

Skinner and Jackson (1974) investigated alcoholic personality types using new personality measures and multivariate techniques in order to (1) identify and replicate distinct personality types among a large sample (282) of alcoholic patients and (2) to compare this empirically derived taxonomy with types established in two previous studies of alcoholics and with marker types
from three general diagnostic systems of psychopathology. The Differential Personality Inventory was used in this investigation along with other measures. The DPI was believed to reliably identify and confirm the existence of distinct subgroups within the sample. A sequential factor analytic strategy was employed. Eight bipolar typal dimensions were identified which defined one cluster of persons at each pole of each dimension. Projection of individual patients into the typal space yielded a successful classification rate of 56 per cent.

Jackson and Carlson (1973) sought to evaluate the validity of several scales from the DPI by demonstrating convergent as well as discriminant validity. Their sample consisted of 370 college Ss, living in University dormitories. Three measures were used in the study: (1) selected scales from the DPI, (2) a roommate rating scale, and (3) a self-rating scale. Reliability estimates for the 12 substantive scales ranged from .73 for Rebelliousness to .87 for Depression. Convergent and discriminant analyses were performed for the total sample as well as for each sex group separately. Convergent validities for the DPI variables were at statistically significant levels. For the total sample all convergent validities (correlations of the DPI scales with the relevant rating scales) were significant at the .001 level. For the male and female samples considered separately all but 2
of the 44 validities were significant at the .01 level. A multimethod factor analysis of the total sample revealed that every scale was loaded on a distinct factor also defined by the two criterion measures for the same trait. The same results were nearly achieved when the factor analysis was applied to males and females separately.

Trott and Morf (1972) administered the DPI, the MMPI, and the PRF to 151 college students for the following purposes: (1) to observe evidence of useful, descriptive constructs manifesting themselves across instruments (2) to examine the construct validity of frequently used scales (MMPI) or promising scales (DPI) measuring variables pertaining to psychopathology, and (3) to examine the relationship between normal and psychopathological behavior: a medical disease conception of "mental illness" as opposed to an emphasis on the social determinants of psychopathology.

A multi-method factor analysis was applied to the scale scores. The first 19 factors were rotated to a Varimax criterion and interpreted. The rotated factor matrix indicated that (1) a considerable proportion of the variance of both the DPI and the MMPI scales is attributable to the same factors (2) the DPI scales in comparison to the MMPI are factorially less complex and, in comparison to the PRF, possess sufficient degrees of convergent and discriminant validity to make further
research with the DPI scales promising, and (3) psychopathological behavior is intimately linked with interpersonal behavior in general and is best regarded as quantitatively rather than qualitatively different from normal behavior. It was also concluded that the DPI tends to place a heavier emphasis on the interpersonal aspects of pathological behavior, while the MMPI is based on the older disease model of pathology.

The results of these studies have been encouraging in their support of the DPI as a measure of personality variables relevant to psychopathology.

**What is to be used as a criterion for the DPI?**

In the past, personality questionnaires have been validated for the most part against diagnostic classification. Current APA psychiatric classification is based on the schema and principles proposed by Kraepelin.

**Kraepelin's System of Classification**

Kraepelin's system is organized around the concept that some psychoses, at least, are organically caused thus reflecting both the prevalent notion of the 19th century that mental illness was organically based and the general organic orientation of the field of psychiatry. In 1883, Kraepelin had published his first edition of *Psychiatry* which contained his nosology and division of "neuroses and psychoses" (Sahakian, 1968) filling a need which had existed for almost a century. His class-
ification scheme was generally accepted throughout the psychiatric world and its underlying rationale continues to provide the basis for present day APA personality classification. The rationale for his diagnostic system was to employ symptoms as the basis for the classification of mental disease. The goal of this classificatory system was to make the understanding of mental disorders as precise as was the knowledge of general paresis. To accomplish this goal, categories were established to which phenomena could be ordered according to regularities in the symptoms and thus the course of the illness. Kraepelin hoped for the subsequent discovery of a specific somatic malfunction responsible for each mental disease and postulated Central Nervous System impairment as the basis of mental disorder (Zilboorg and Henry, 1941). Within this classificatory system based on the model of the physical diseases, the assumption is made that there is a separateness between the various mental disorders. One has but to identify the disorder based on a specification of the pattern of symptoms to order the phenomenon to the appropriate category. The subsequent course of the disorder as in the physical disease should be predictable within certain parameters. In the realm of human behavior, however, the above rationale does not seem to be supported. For example, clinical experience tells us that the paranoid individual relies heavily
upon projection i.e. the process by which an objectionable internal tendency is unrealistically attributed to another person or to other objects in the environment instead of being recognized as part of one's self. However, a relatively unadaptive but moderate instance of defensive projection is such a reaction as "I think he dislikes me" in the absence of sufficient observational support. This is not a rare type of reaction among essentially normal people who, either in a crisis or chronically, feel uncomfortable with their negative feelings toward others. The difference is a continuous one in which, as we approach the pathological extreme, the projections become more frequent, arbitrary, and/or rigid. This continuous difference does not allow for the separation of individuals into unique mutually exclusive disease categories. In fact, it would be preferable to assess how much the individual relies upon denial, projection, etc. Rather than to use separate disease categories, it would seem to be more profitable to use a series of clinically relevant continua along which the location of the individual would be determined by assessing the frequency with which the individual demonstrates the particular behavior.

**Bleuler's and Freud's Contribution**

Eugen Bleuler was much less committed to any particular form of causality than was Kraepelin. They
were essentially in agreement in advocating an underlying organic trend; yet, in his view on schizophrenia, Bleuler went considerably beyond Kraepelin in taking account of psychological explanations of schizophrenic behavior and processes. He describes schizophrenia as a defect in thinking and suggests that the defect is due to a physical disease (Bleuler, 1950).

Freud's psychoanalytic contributions to the classification system are based on his proposition that anxiety is related to the neuroses. Originally, Freud believed that anxiety was the result of frustrated sexual urges. He was later to consider this earlier theory as but a special case of anxiety. How is anxiety then related to the neuroses? A brief historical sketch of some of Freud's key concepts in personality development begins with his proposed alteration in the theory of the hysterical neurosis by way of his contribution of the concept defense hysterias. Freud believed that the defense hysterias differed from Breuer's retention hysterias and from Charcot and Janet's traumatic hysterias in that "there was in them no question of either grave hereditary taint or of individual atrophic degeneration" (1894, p 61). Not only did this publication contradict the predominantly organic orientation in the field of psychiatry, but it introduced the concept of "defense". Freud here began to articulate his view of the intra-psychic personality organization of the individual. In
1923, Freud's view of psychic structure finally reached a coherent form with his publication on the structural theory of the mind: *The Ego and the Id*. With this publication, Freud introduced a new model of personality structure based on economic, topographic, and dynamic considerations. It dealt with the distribution, balance, and mutual interdependence of the instinctual forces, Eros and Thanatos, and the energies at their disposal, the libido and the destructive-energy -- or the economy of the mind; it dealt with the three mental provinces, the unconscious, preconscious, and conscious -- or the topography of the mind; and, it dealt with the three institutions of personality, the id, the ego and super-ego -- or the structure of the mind. Both the structure and function of the ego were discussed. The ego was seen as being a coherent organization of mental processes which arose from the identification with abandoned objects. Included in this concept of the ego were the unconscious defense mechanisms whose adaptive function it was to ward off anxiety. The introduction of the signal theory of anxiety and the further delineation of the mediating functions of the ego came with the publication of *The Problem of Anxiety* (1926). Freud's position was that the ego has many defenses at its disposal and that the ego initiates a particular defense in response to the anxiety signal. Defense in response to the anxiety signal
was postulated to be functionally related to the neuroses. Anxiety is a sign of the ego's weakness. When the ego is hard pressed by external reality, it develops "reality anxiety". When it is pressed by the superego, which creates a feeling of guilt or inferiority, "moral anxiety" appears. When the pressures of the id threaten to disrupt the ego, a "neurotic" anxiety develops. The expression of the anxiety generated may take a variety of avenues. Of those expressions of anxiety considered by Freud, bound anxiety as in the conversion hysterias and unbound anxiety as in anxiety reactions have influenced the classification system. The classification system has also been influenced by Freud's description of the character neurosis where behavior is ego-syntonic (i.e., acceptable in terms of social approval or the image a person has of himself) and his description of symptomatic neurosis, where symptoms are ego-alien.

**Critique of Personality Classification**

Since all official APA diagnostic classifications continue today in the Kraepelinian tradition, it would be of benefit to describe what is involved in the diagnostic process and also some of the problems and criticisms described in the literature. The individual presents information to the diagnostician who on the basis of the seriousness (e.g., suicidal or homicidal ideation) or prominence
(e.g., auditory and/or visual hallucination) of the symptomatology places the individual into a diagnostic category. For his part, the diagnostician usually focusses upon the descriptive aspects of symptomatology rather than upon the etiological factors, viewing the "psychological processes" as making up various discrete diagnostic categories. Categorization rests upon the diagnostician's highly inferential judgement process, which in turn is susceptible to a host of influences such as geographical location and hospital subcultures (Gurland et al., 1970), resulting in serious questions of diagnostic reliability (Asch, 1949; Arnhoff, 1954; Zubin, 1967; Cooper, 1967), and, the inclusion of individuals in the same category who are heterogeneous with respect to various criteria (King, 1954; Rotter, 1954; Ziegler and Phillips, 1961). The disturbing lack of comparability in diagnoses have led to criticisms addressed to the general inadequacies of the system (Phillips and Rabinovich, 1958; Leary and Coffey, 1955) and to suggestions for reform that range from advocacy of abolishment of the present system and starting anew (Menninger, 1955; Rogers, 1951) to proposing various types of modifications within the present system (Stoller, 1974; Foulds, 1955).

In general, it may be stated that as long as the criterion of diagnostic assessment is largely dependent upon the subjective integration of a different set of
facts for each individual and then placement of that individual into one of several mutually exclusive categories then the uniformity of results may be appropriately questioned. One alternative to the perplexing problems mentioned above is to describe behavior without allocating the individual to one category or another. That is, one can utilize a systematic method of quantitatively differentiating the behaviors to be found in all individuals along a continuum. The advocate of this alternative takes the position that the psychological processes apparent in the psychotic behaviors are also to be found in the behaviors of those individuals falling in the ranges considered to be neurotic or normal. For example, it is not the presence or absence of aggressive-destructiveness nor of sexual confusion that differentiates psychotic patients from others, as these thoughts and/or behaviors are also to be found in all peoples in our society. The diagnostic distinction to be made is a quantitative one. That is, the potential behaviors and distortions of cognition found within the psychotic range are not considered to be qualitatively different from those behaviors and cognitions to be found among others. Rather, the critical differentiation rests with the frequency with which one demonstrates the distorted cognitions and/or the behaviors in question i.e. aggressive-destructive behavior, paranoid projection, sexual confusion, etc.
An Alternative to APA Classification

Fiske (1971) has proposed six modes of personality measurement differentiated in terms of the various procedures employed to obtain the information from which indices are derived. He describes mode 5B as the observation of behavior via non-projective procedures such as through the use of behavior rating scales. The behaviors to be described by the scales are not intended to be attributes specific to the psychoses nor are they intended to be idiosyncratically defined. It would seem appropriate then to use scale-like measures focusing upon universal behaviors and to substitute these scales for the traditional role of diagnosis as criteria against which to validate a personality questionnaire such as the CPI.

The Psychotic Inpatient Profile and the Whitaker Index of Schizophrenic Thinking

The Psychotic Inpatient Profile (PIP) is one such instrument designed to measure frequency of behaviors and distorted cognitions yielding, at one extreme of the continuum, behaviors that fall into the psychotic range (Lorr and Vestre, 1968). The PIP taps a whole series of behaviors that in the extreme are indicative of psychosis: Excitement, Hostile Belligerence, Paranoid Projection, Anxious Depression, Retardation, Seclusiveness, Care Needed, Psychotic Disorganization,
Grandiosity, Perceptual Distortions (hallucination), Depressive Mood, and Disorientation. The PIP was developed to rate the frequency of the above behaviors of functional psychotics prior to treatment or while on a minimal to moderate drug dosage schedule. Normative tables are available for male and female patients seen shortly after hospitalization and prior to drug treatment and also for male and female patients rated while on drugs. The PIP yields 12 relatively independent measures of behavioral deviation, eight of which relate to distortions in cognition. (See Method section for the PIP Reliability and Validity.)

By extension of this rationale, it is appropriate to use the Witaker Index of Schizophrenic Thinking (WIST) (Witaker, 1973) as an additional criterion variable to measure frequency of cognitive distortions. As such, the WIST constitutes a sample of the individual's cognition and is not considered to be a self-report index/measure. (See Method section for WIST Validity and Reliability.)

When is the Patient to be Tested?

How can the subject's responses to the test be obtained when, more often than not, a newly admitted patient cannot respond appropriately to written or spoken language? Ideally, one would want to measure the personality functioning of the patient at the time
of admission, because hospitalization is usually decided on the basis of the individual's functioning immediately prior to admission. Observations via behavior rating scales may be obtained at the time of the patient's admission as this measure is relatively "independent" of the individual's personality organization. It is at this time, however, that the very problem which necessitates inpatient hospital treatment would, in the great majority of cases, prevent the individual from interacting "reasonably" with the immediate environment, much less to comprehend and respond to the minimal requirements of answering a personality inventory. In the great majority of cases in the State of Michigan, the individual at the time of admission represents a physical danger to himself and/or to others necessitating the immediate use of neuroleptic drugs. The effects are basically twofold: (1) the evolution of typical psychotic behavioral manifestations is prevented (Fouks et al., 1966) and, (2) the presenting psychotic behaviors, specifically, are modified (Klein and Davis, 1969; May, 1968).

At what point in the patient's hospital treatment course should he be approached for the paper and pencil task? Very few of the patients would be accessible for testing at the time of admission and those that would be accessible without medication or minimal doses of medication would not be representative of the population.
Chapman (1963) notes that to limit sample populations to only non-medicated individual's or those who can most easily be withdrawn from drugs is to utilize those with the least severe disturbances.

In general, the medication policy for in-patient services is to prescribe that dosage clinically felt to be indicated to reduce the individual's potential of being a danger to self or to others. This policy also makes the patient accessible for testing. To obtain behavior ratings at this time, however, would be to do so at a time of minimal psychotic behavioral manifestations. The pragmatic solution would be to obtain the behavioral ratings at the time of admission and the administration of the personality inventory when the patient is accessible for testing. Is this method of data collection at the expense of the purpose of this research project?

Assumption: Coherence and Continuity of Personality Organization

On a pragmatic basis, the assumption is made that drugs do interfere with the individual's degree of regression and the evolution of typical schizophrenic symptoms -- but do not change the individual's general style of relating to the world, of coping with external events, and the nature of his inner conflicts.
What are the theoretical propositions and research findings that would support the assumption that the nature of the inner conflicts and the individual's general style of negotiating with the environment as expressed during typical periods of his life are related to his functioning during periods of decompensation? Psychoanalytic ego psychology provides the general framework within which certain concepts are particularly relevant to this question, viz., id, ego adaptation, defense, stress, and cognitive style. Taken together these concepts assist one in understanding the coherence and continuity of personality organization from situation to situation. They also provide a conceptual basis for understanding psychoses as an adaptation to stress; an adaptation that was appropriate at earlier phases of the individual's psychic life.

**Psychoanalytic Ego Psychology**

Psychoanalytic ego psychology has developed and is based upon the broad foundations of Freud's early contributions in general; in particular, his discovery of the unconscious and his structural division of the personality into ego, id, and superego. His division of personality organization with unconscious aspects of each division has been further developed, elaborated, and in some aspects modified by the leading theorists of the ego-psychoanalytic school A. Freud and H. Hartmann. The
reader is referred to Appendix I for a discussion that traces the development of the structural division of "ego" and the subsidiary concepts of adaptation, defense, stress, etc. Appendix I also integrates these psychoanalytic ego concepts into an approach that aids in the functional understanding of the psychoses. What is presented here are those theoretical propositions and research findings that are most relevant to the assumption of coherence and continuity in personality organization.

A Conceptualization of Psychoses

Psychoanalytic ego psychology proposes that external stress and/or internal anxiety may result in the individual's abandonment of secondary process modes of organizing the facts of his experience. Stress refers to the demands made on the individual which require adaptation. It may be mild, severe or excessive in degree depending upon the objective characteristics of the stress situation and the enduring adaptive response dispositions and resources of the individual. On a psychological level, the severity of stress also depends on the way the individual perceives the stress situation. Excessive stress results in decompensation, that is, in lowered integration or organization of function. Seyle (1956) has shown that the process of decompensation on both biological and psychological levels of function involves three stages. During the first stage the course
of decompensation might involve increased alertness, emotional arousal, and intensified use of the ego defense mechanisms. During stage two, the individual may introduce exaggerated defensive measures as in the psychotic reactions in his efforts to maintain some measure of inner integration. If these defenses are not effective, then in stage three there may be severe psychological disturbances and disintegration reflected in the individual's thinking and behavior as with uncontrolled excitement, violence, stupor, etc.

All thought and behavior expresses a particular balance of ego dynamics and id dynamics; that is of progressive adaptive trends and regressive autistic trends. What is psychotic is not the anxiety but how the ego responds to it, whether progressively and adaptively or regressive and autisticly i.e. by restricting itself and making its own fragmentation into a permanent structure. The question arises: From where does the anxiety come? As the individual grows to biosocial maturity he comes to fear certain of his impulses and their internal representations. Realistically and unrealistically, he anticipates that the discharge of these feared impulses might result in loss of a significant person's love or possible punishment in the form of deprivation, physical attack or moral condemnation; also it is anticipated that if given any opportunity for discharge the impulse
will get out of hand. The pressure of the threatening impulses and the possibility of discharge generates reactions of anxiety. In the person who has the potentiality for psychoses, the defenses are desperate, thoroughgoing, uncompromising attempts to "eliminate" the threatening impulses and their internal representations. Reactions of guilt, shame, and disgust may be also involved. The initial phases of the distress reaction may then be used as indications by the ego that crisis over impulse control is developing, and may also be used as signals for initiating or intensifying defensive strategies. What happens when these defense mechanisms are not effective?

Under extreme stress, the individual's defenses which were appropriate at earlier developmental levels replace the more adaptive strategies, and the individual comes to rely upon frequent and massive projections and denials. Psychotic symptoms appear when the stable, developmentally advanced defenses (intellectualization, reaction formation, repression, etc.) fail to ward off the anxiety and are replaced by defenses belonging to early phases of the individual's mental life. The individual's deviations may appear first as a loss of a level previously achieved, as in the case of sexual organization, and second as a substitution of an earlier mode of function, as with magical thinking replacing reality-oriented thinking (Freemen, 1973). The frankly
psychotic individual continues to attempt to adapt to a world comprised of adult demands and of real people. However, he no longer has at his disposal the mature defenses and the mature adaptive maneuvers that he previously had available. His areas of ineffective adaptation and mediation also extend into major parts of his overt behavior (Cameron, 1963). In psychoses the individual appears to operate primarily by primary process principles (condensations of ideas and affects, displacements, syncretic, etc.). Ego psychoanalytic theory supports the assumption that the nature of the individuals conflict during periods of psychotic decompensation is related to the nature of his conflicts when mature defenses are operating effectively.

Cognitive Style Research

The coherence and continuity of personality organization from periods of decompensation through the reinstitution of developmentally advanced defensive strategies is supported also by cognitive style research. This research supports the proposition that the individual is characterized by identifiable enduring response dispositions (Schafer, 1954; Klein, 1949). These perceptual-cognitive response dispositions have been found to be influenced and shaped by developmental factors (Witkin et al., 1962; Witkin, 1964; Corah, 1965), to evolve in part as a function of maturation and life
experiences (Santostefano, 1970), and, to be strikingly stable over time (Bauman, 1951). The individual's cognitive style has also been shown to be related to particular expressions of pathology (Witkin et al., 1954; Taylor, 1956; Bryant, 1961; Powell, 1964; Janucci, 1964; Witkin, 1965) and to various kinds of schizophrenia (Zuckman, 1957; Bryant, 1961; Witkin et al., 1954). The reader is again referred to Appendix I for a more comprehensive and detailed discussion of the concept of "cognitive style" and relevant research findings.

Taken together, the theoretical propositions from ego-analytic psychology and the results of cognitive style research would indeed support the assumption that the nature of the individual's inner conflicts and his general style of negotiating with the external world are related to his functioning during periods of decompensation. Clinical observations give additional support to this assumption, which can be illustrated by case-study material from psychotics. The nature of the psychotic's conflicts during periods of decompensation and the nature of his conflicts when the more developmentally mature defenses are again being effective, is illustrated by the actively psychotic patient who upon admission to the ward was placed in full restraints while verbalizing his fear of being castrated by the nursing staff; and who prior to his discharge some days later, verbalized his preoccupation with and concern over
his wife's recent urging of him to make arrangements for a vasectomy.
CHAPTER II
DATA ANALYSIS

The purpose of this research study was to determine whether a relationship existed between two sets of measures. The first set of measures (the criterion variables) consisted of 12 economical and non-overlapping measures of behavioral deviation viz., the PIP, and also an additional criterion variable to measure the frequency of cognitive distortions viz., the WIST. The second set of measures (the predictor variables) consisted of a set of 15 economical and non-overlapping scales which attempt to measure important psychopathological traits that are related to current adaptation to life situation, viz., the DPI.

The central question that was investigated was as follows: Are the predictor variables (DPI) related to the criterion variables (PIP, WIST)? The analysis of data has relied mainly upon computing the simple correlations between the predictor variables and each of the criterion variables. The specific relationships that were expected to be found between the two sets of variables were:

<table>
<thead>
<tr>
<th>DPI Scale (Predictor Variable)</th>
<th>PIP scale and WIST (Criterion Variable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrequency</td>
<td>Psychotic Disorganization</td>
</tr>
<tr>
<td></td>
<td>Grandiosity</td>
</tr>
<tr>
<td></td>
<td>Disorientation</td>
</tr>
<tr>
<td></td>
<td>Whitaker Index of</td>
</tr>
<tr>
<td></td>
<td>Schizophrenic Thinking</td>
</tr>
<tr>
<td>Trait</td>
<td>Correlated With</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cynicism</td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Seclusiveness</td>
</tr>
<tr>
<td></td>
<td>Perceptual Distortion</td>
</tr>
<tr>
<td>Depression</td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Anxious Depression</td>
</tr>
<tr>
<td></td>
<td>Retardation</td>
</tr>
<tr>
<td></td>
<td>Seclusiveness</td>
</tr>
<tr>
<td></td>
<td>Grandiosity (negatively)</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood</td>
</tr>
<tr>
<td>Familial Discord</td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Perceptual Distortion</td>
</tr>
<tr>
<td>Health Concern</td>
<td>Anxious Depression</td>
</tr>
<tr>
<td></td>
<td>Seclusiveness</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood</td>
</tr>
<tr>
<td>Hostility</td>
<td>Hostile Belligerence</td>
</tr>
<tr>
<td></td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood (negatively)</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>Excitement</td>
</tr>
<tr>
<td></td>
<td>Retardation (negatively)</td>
</tr>
<tr>
<td>Irritability</td>
<td>Excitement</td>
</tr>
<tr>
<td></td>
<td>Hostile Belligerence</td>
</tr>
<tr>
<td></td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Anxious Depression</td>
</tr>
<tr>
<td></td>
<td>Grandiosity</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood</td>
</tr>
<tr>
<td>Neurotic Disorganization</td>
<td>Psychotic Disorganization</td>
</tr>
<tr>
<td></td>
<td>Whitaker Index of Schizophrenic Thinking</td>
</tr>
<tr>
<td>Psychotic Tendencies</td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Seclusiveness</td>
</tr>
<tr>
<td></td>
<td>Psychotic Disorganization</td>
</tr>
<tr>
<td></td>
<td>Grandiosity</td>
</tr>
<tr>
<td></td>
<td>Perceptual Distortion</td>
</tr>
<tr>
<td></td>
<td>Disorientation</td>
</tr>
<tr>
<td></td>
<td>Whitaker Index of Schizophrenic Thinking</td>
</tr>
<tr>
<td>Rebelliousness</td>
<td>Hostile Belligerence</td>
</tr>
<tr>
<td>Socially Deviant Attitudes</td>
<td>Depressive Mood (negatively)</td>
</tr>
<tr>
<td></td>
<td>Hostile Belligerence</td>
</tr>
<tr>
<td>Somatic Complaints</td>
<td>correlated with</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Defensiveness</td>
<td>correlated with</td>
</tr>
<tr>
<td>First Factor</td>
<td>correlated with</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood</td>
</tr>
<tr>
<td></td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Grandiosity</td>
</tr>
<tr>
<td></td>
<td>Paranoid Projection</td>
</tr>
<tr>
<td></td>
<td>Depressive Mood</td>
</tr>
<tr>
<td></td>
<td>Whitaker Index of</td>
</tr>
<tr>
<td></td>
<td>Schizophrenic Thinking</td>
</tr>
</tbody>
</table>
CHAPTER III

METHOD

Subjects

The subjects for this study consisted of the first 60 inpatients admitted to the Detroit Psychiatric Institute who were able and who were willing to participate in the research project. Those patients admitted to the locked wards (4A, 5A, 6A) of D.P.I. and who did not have obviously complicating medical illnesses or obvious neurological involvement were included in the sample.

The age range of the subjects included in the sample was from 18 to 60 years. The age range was selected in order to screen out early adolescent reactions and premature senility.

The following data was recorded on each of the subjects at the time of testing: Name, Age, Sex, Educational level, Marital Status, Medications, Race and Employment.

Of the 177 patients consecutively admitted to the Adult In-Patient Service of the Detroit Psychiatric Institute, 14 were 60 years of age or older and therefore not included in the study, two were transferred for medical reasons, 101 refused to take the Differential Personality Inventory, 60 agreed to answer the questions of the Differential Personality Inventory (see Table 2 for the characteristics of the tested sample).

The 14 patients who were 60 years of age and over
# TABLE 2
CHARACTERISTICS OF THE SAMPLE: TESTED GROUP AND NOT-TESTED GROUP
(N=161)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Tested Group (N=60)</th>
<th>Not-Tested Group (N=101)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Sex</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negro</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>White</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Mean Age</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>Mean Education</td>
<td>10.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Employment Rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionals &amp; Proprietors (large businesses)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Semi-Professionals</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Clerks</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Skilled Workers</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Proprietors (small businesses)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Semi-Skilled Workers</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Unskilled Workers</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
were not approached to answer the questions on the Inventory. Both of the patients who were transferred to medical facilities were transferred on the day of their admission; the first because of active T.B., the second because of physical injuries.

Each patient's occupation was rated according to the occupational rating scale provided by Warner et al. (1949). Because of the present state of the economy in Detroit, many of the patients had been laid off within the 4-6 months prior to their admission into the hospital. These patients were rated on the basis of the occupation they were engaged in before the lay-offs. Also, women who were not working were assigned the occupational status their husbands had had.

One hundred and sixty-one patients were rated on the Psychotic Inpatient Profile by a member of the ward staff (see Materials section for a detailed description of the Psychotic Inpatient Profile). The observations were made over a 3 to 4 day period of time from the date of admission and the ratings were subsequently recorded. The male patients who agreed to answer the DPI took the DPI on the average of 10.4 days from the date of their admission. Female patients averaged slightly longer, 10.69 days from the date of their admission.

All patients who took the DPI were on medication at the time of testing. The great majority of those patient's requiring medication were placed on chlorpromazine
(thorazine), a phenothiazine derivative (Prolixin, Prolixin Enanthate, Trilafan, etc.) or a butyrophenone derivative which is pharmacologically related to the phenothiazine compounds (Haldol). The dosage prescribed was that dosage and frequency believed to be necessary to preclude the patient's being a danger to self or to others. This was determined by the Senior Psychiatrist on each ward. Table 3 presents the types of medication according to their major groupings and also gives the median dosage and frequency of medication being received by the patient at the time of answering the Inventory. Table 4 provides a list of the medications of those patients who were receiving more than one type of medication at the time of testing.

Materials

The following materials were used in this research project:

The Psychotic Inpatient Profile (PIP) is a 96 item behavior inventory developed by Lorr & Vestre (1968) for use with recently admitted functional psychotics. At the end of a three day period of observation by experienced ward personnel the patient's currently observable behavior is rated on a 4 point scale from "Not at all", (0), through "Occasionally", (1), "Fairly Often", (2), to "Nearly Always", (3). Seventy-four of the items are rated in this fashion. The remaining 22 items are based on the rater's interactions with the patient and are scored as "True" or "False".
<table>
<thead>
<tr>
<th>Drug</th>
<th>Median Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpromazine</td>
<td>600mg/day</td>
</tr>
<tr>
<td>Trifluoperazine</td>
<td>40mg/day</td>
</tr>
<tr>
<td>Thoridazine</td>
<td>400mg/day</td>
</tr>
<tr>
<td>Fluphenazine-Enanthate</td>
<td>50mg/day</td>
</tr>
<tr>
<td>Haloperidal</td>
<td>20mg/day</td>
</tr>
<tr>
<td>Amitriptyline HCL</td>
<td>200mg/day</td>
</tr>
</tbody>
</table>

*Triavil is a combination anti-depressant (Amitriptyline HCL) and anti-psychotic (perphenazine).*
### TABLE 3

**MEDICATION TYPES AND MEDIAN DOSAGE PER DAY: TESTED SAMPLE (N=54)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Median Dosage</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>600mg/day</td>
<td>400mg/day</td>
</tr>
<tr>
<td>Trifluoperazine</td>
<td>40mg/day</td>
<td>20mg/day</td>
</tr>
<tr>
<td>Thoridazine</td>
<td>400mg/day</td>
<td>400mg/day</td>
</tr>
<tr>
<td>Fluphenazine-Enanthate</td>
<td>50mg/day</td>
<td>25mg/day</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>20mg/day</td>
<td>20mg/day</td>
</tr>
<tr>
<td>Amitriptyline HCL</td>
<td>200mg/day</td>
<td>250mg/day</td>
</tr>
<tr>
<td>*Triavil</td>
<td></td>
<td>200mg/day</td>
</tr>
</tbody>
</table>

pressant (Amituptlyline HCL) and
### TABLE 4

**MEDICATION TYPES AND MEDIAN DOSAGE PER DAY AT THE TIME OF TESTING OF PATIENTS RECEIVING MORE THAN ONE TYPE OF MEDICATION**

(N=6)

#### MALE

<table>
<thead>
<tr>
<th>Patient #</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Chlorpromazine 600mg a day; Trifluoperazine 20mg a day</td>
</tr>
<tr>
<td>#2</td>
<td>Chlorpromazine 300mg a day; Haloperidol 20mg a day</td>
</tr>
<tr>
<td>#3</td>
<td>Chlorpromazine 800mg a day; Haloperidol 20mg a day</td>
</tr>
<tr>
<td>#4</td>
<td>Fluphenazine Enanthate 50mg a 2wk; Trifluoperazine 40mg a day</td>
</tr>
</tbody>
</table>

#### FEMALE

<table>
<thead>
<tr>
<th>Patient #</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Chlorpromazine 400mg a day; Trifluoperazine 10mg a day</td>
</tr>
<tr>
<td>#2</td>
<td>Chlorpromazine 300mg a day; Haloperidol 20mg a day</td>
</tr>
</tbody>
</table>
These 22 items include such items as, "Claims he has a divine mission (#76), Reports that voices order or command him to do things" (#89), etc. The PIP yields 12 economical and relatively independent measures of behavioral deviation, eight of which pertain to manifest behavior syndromes: Excitement (EXC), Hostile Belligerence (HOS), Paranoid Projection (PAR), Anxious Depression (ANX), Retardation (RTD), Seclusiveness (SEC), Care Needed (CAR), Psychotic Disorganization (PSY); and, four of which relate to distortions in cognition: Grandiosity (GRN), Perceptual Disorganization (PCP), Depressive Mood (DPR), Disorientation (DIS). The scales, their reliabilities, and example items are listed in Table 5. The PIP rating scale will be found in Appendix II.

Lyerly (1973) reports that the only published reliability information on the PIP consists of intraclass correlation coefficients represent the degree of agreement between two independent raters. These range from .74 to .99 with a median of .88.

Eleven of the 12 syndrome scores (all except SEC) have been found to detect significant differences at the .05 level between open-ward and locked ward patients; and 9 of the 12 syndrome scores (RTD, DIS, DPR are the exceptions) detect significant differences between patients rated shortly after admission and patients rated shortly before discharge (Lyerly, 1973; Lorr & Vestre 1968).
<table>
<thead>
<tr>
<th>Scale</th>
<th>Abv.</th>
<th>Reliability*</th>
<th>Example Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitement</td>
<td>EXC</td>
<td>.80</td>
<td>Talks in a loud voice.</td>
</tr>
<tr>
<td>Hostile Belligerence</td>
<td>HOS</td>
<td>.88</td>
<td>Loses temper when dealing with other patients</td>
</tr>
<tr>
<td>Paranoid Projection</td>
<td>PAR</td>
<td>.87</td>
<td>Acts as though the hospital is persecuting him.</td>
</tr>
<tr>
<td>Anxious Depression</td>
<td>ANX</td>
<td>.86</td>
<td>Looks worried and nervous.</td>
</tr>
<tr>
<td>Retardation</td>
<td>RTD</td>
<td>.81</td>
<td>Whispers when he speaks</td>
</tr>
<tr>
<td>Seclusiveness</td>
<td>SEC</td>
<td>.81</td>
<td>Is good company.</td>
</tr>
<tr>
<td>Care Needed</td>
<td>CAR</td>
<td>.88</td>
<td>Needs help in dressing.</td>
</tr>
<tr>
<td>Psychotic Disorganization</td>
<td>PSY</td>
<td>.84</td>
<td>Makes up new and unusual words.</td>
</tr>
<tr>
<td>Grandiosity</td>
<td>GRN</td>
<td>.99</td>
<td>Claims he has a divine mission.</td>
</tr>
<tr>
<td>Perceptual Distortion</td>
<td>PCP</td>
<td>.74</td>
<td>Says voices say &quot;bad&quot; things about him.</td>
</tr>
<tr>
<td>Depressive Mood</td>
<td>DPR</td>
<td>.89</td>
<td>Feels hopeless and despairing, beyond help</td>
</tr>
<tr>
<td>Disorientation</td>
<td>DIS</td>
<td>.89</td>
<td>Knows hospital location.</td>
</tr>
</tbody>
</table>

*Intraclass correlation coefficients
The Whitaker Index of Schizophrenic Thinking (WIST) was developed by Whitaker as an estimate of the degree to which an individual is thinking in a schizophrenic manner at a given time. The WIST is made up of 3 sub-tests viz., Similarities (9 multiple choice items), Word Pairs (9 multiple choice items), and New Inventions (7 multiple choice items) for a total of 25 items. Of the two WIST forms, Form A was used for this research investigation. The verbal content of Form A is more emotionally charged and anxiety provoking than is that of Form B. The WIST format is as follows: Printed instructions are provided at the beginning of each subtest. A stimulus word, phrase, or sentence is presented with 5 randomly arranged alternative answers following. Without guidance or feedback from the examiner, the patient checks his choice of answer. Each set of 5 alternatives consist of one correct answer (scored 0) and 4 answers which are scored in order of their increasing incorrectness. The four alternative answers consist of (1) a loose association scored 1, (2) a reference association scored 2, (3) a clang association scored 3 and, (4) a nonsense association scored 4. According to Whitaker’s standard procedure for administering the test: after the subject has indicated his first choice for all items, the examiner reviews the answers and informing the patient as to which are incorrect asks him to choose the correct one. For each incorrectly answered item the score value of the
wrong answers are determined from the appropriate Scoring Key and are entered on the WIST form. For example, #2 of the Similarities Subtest, Form A:

1. Hurt
   brost...........2 4 nonsense
   injure..........3 0 correct
   attack me.......1 reference
   cut.............1 loose
   blurt...........3 clang

The patient's first answer is "blurt" a clang association and is thus scored 3, his second choice is "brost" a nonsense association scored 4; his third choice is "injure" which is correct and is scored 0.

After this procedure for each incorrect answer is completed, the scores are summed and are recorded in the TOTAL box at the end of each subtest. The total WIST score is obtained by summing the three subtest totals and summing this total with the time required by the patient to give his initial answers. The present author has dispensed with the inquiry phase of administration. Scores are based entirely on the subject's first response to the items.

The most recent procedure for validation of the WIST involved a comparison of WIST scores against the ratings of schizophrenic reactions recorded by psychologists and psychiatrists. The rating technique consisted of rating three patient groups on three separate dimensions viz., cognitive, affective, and behavioral signs of schizophrenic reactions. Ratings were done without knowledge of other ratings or the test results. Rater
agreement on the classification of subjects as schizophrenic vs. non-schizophrenic was between 80 and 90 percent. A chi-square analysis of the classifications according to the rating criteria and the classifications according to the WIST for each of six comparisons was performed. All of the chi squares were significant at the .001 level. Form A was found to correctly identify schizophrenic subjects with an 80 percent discriminatory efficiency and a 77 percent discriminatory efficiency when attempting to identify schizophrenic subjects as either "chronic" or "acute". Intra-test reliability of the WIST Forms, Hoyt reliability coefficients, are approximately .80 for each Form (Whitaker, 1973). The WIST Form A will be found in Appendix III.

The Differential Personality Inventory (DPI) Form-L was developed by Jackson (1964) as an objective measure of variables believed to be related to psychopathology. As previously described, this instrument consists of 15 20-item scales. Twelve of these 15 scales were developed to assess substantive dimensions of psychopathology in both males and females: Cynicism (CYN), Depression (DEP), Familial Discord (PDS), Health Concern (HLC), Hostility (HOS), Impulsivity (IMP), Irritability (IRY), Neurotic Disorganization (NDS), Psychotic Tendencies (PST), Rebelliousness (REB), Socially Deviant Attitudes (SCA), and Somatic Complaints (SMC). Three of the 15 scales were primarily developed as Validity Scales: Defensiveness (DEF),
First Factor (FFC), and Infrequency (INF). Scale construction for the DPI was accomplished through substantively defined item pools prepared for each scale. A sequential strategy of item selection was then utilized yielding the 300 items to be answered True or False (Jackson and Carlson, 1973). The DPI questionnaire will be found in Appendix IV.
CHAPTER IV
PROCEDURE

Upon admission onto Ward 4A, 5A, or 6A the patient was assigned to one of the Nursing Staff on that ward for the 3 to 4 day period of observation. At the end of the observation period the PIP form was filled out.

The patient was approached by the examiner for administration of the WIST and the DPI within a week of his/her admission. If the patient was not yet accessible for testing, he/she was approached at least once per week thereafter in order to enlist his/her participation in the research project. The patient's participation was encouraged until that point that the patient either twice declined, agreed to participate, or was discharged from the hospital. The patient was informed that the answers to the various questions would give us more information about himself and we would be in a better position to devise a treatment program from which he might benefit. The patient expressed consent to participate in written form. This consent form will be found in Appendix V.

In order to insure confidentiality the patient's last name was deleted from the answer sheet and from the PIP.

All patients admitted to the three wards were rated on the PIP whether or not they took the DPI and WIST.
CHAPTER V
RESULTS

The first step in looking at the data was to compute the degree of agreement between the PIP raters. Every tenth patient who was admitted to the In-Patient Service was assigned to be rated by two members of the ward staff. This double rating procedure was done without the ward staff's knowledge. The degree of agreement, product-moment correlations, for each of the behavior types rated is presented in Table 6.

Pearson's Product-Moment correlations were then computed between each of the criterion variables (PIP and WIST) and each of the predictor variables in the DPI. The correlation matrix for the total sample is presented in Table 7. In order to rule out the possibility that these correlations had been randomly generated, Bartlett's test (1950) was used to test the matrix for significance ($X^2 = 681; \text{df} = 378; p = .001$).

The results of the hypothesized relationships between the criterion variables (PIP and WIST) and the predictor variables (DPI) are presented in Table 8. The relationships that were significant at the .05 level were: Cynicism with Paranoid Projection (.30), First Factor with Paranoid Projection (.28), Depression with Anxious Depression (.27), Psychotic Tendencies with Seclusiveness (.24), Depression with Depressive Mood (.23), First factor with Depressive Mood (.21), and Infrequency with Whitaker's Index of
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Table 7. Correlations of DPI Scales For 60 Patients

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* .05 = .25
** .01 = .33
*** .001 = .42
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### TABLE 8
PREDICTED CORRELATIONS OF DPI SCALES WITH PIP AND WIST SCALES (N=60)

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\( \ast .05 = .21 \)

\( \ast\ast .01 = .30 \)

\( \ast\ast\ast .001 = .39 \)
## TABLE 8

**PREDICTED CORRELATIONS OF DPI SCALES WITH PIP AND WIST SCALES**

*(N=60)*

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Schizophrenic Thinking (.44). Pearson Product-Moment correlations were then computed for the two sex groups separately. (Table 9 presents the correlation matrix for males; Table 10 presents the correlation matrix for females.) Those correlations that differed significantly between the male and the female samples are listed in Table 11. Significant differences between males and females were found for three of the hypothesized relationships.

As would be expected with this particular psychiatric population, the mean scale scores of the DPI are elevated above those scores obtained by Jackson and Carlson (1973) with a university population. Table 12 provides a comparison of the means and S.D.s. for the total sample obtained in Jackson's study with those obtained in the present study. The mean scale scores of the DPI from the present study which differ significantly from the mean scale scores obtained by Jackson and Carlson (1973) are also presented in Table 12. All of the DPI mean scale scores differ significantly except for the Impulsivity scale and the Rebelliousness scale. The mean scale scores of the psychiatric sample are significantly more pathological than those scores of the university sample. The one exception is the Rebelliousness scale on which the university sample has a significantly higher score. Table 13 presents a similar comparison of the means and standard deviations of the two studies on the basis of sex.

In comparing the PIP means of the present study with
### Table 9. Correlations of DPI Scales

**Males (N=25)**

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* .05 = .40

** .01 = .51
Table 9. Correlations of DPI Scales with PIP Scales
Males (N=25)

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### Table 10. Correlations of DPI Scales

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* .05 = .33
** .01 = .43
*** .001 = .53
Table 10. Correlations of DPI Scales with PIP Scales
Females (N=35)

<p>| DPI SCALES | CYN | DEP | FDS | HLC | HOS | IMP | IRI | NDS | PSS | REP | SDA | SMC | DEF | PPC |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| -.01       | .06 | .25 | .13 | -.02 | .05 | .13 | .30 | .04 | -.02 | .26 | .16 | -.03 | .02 |
| -.00       | .01 | -.11 | .08 | .26 | -.16 | *42 | .04 | -.40 | -.11 | .24 | .00 | .06 | .03 |
| *40        | .23 | .07 | .14 | .18 | -.27 | .23 | -.05 | .11 | .20 | -.02 | .32 | -.09 | *35 |
| .24        | .29 | .26 | .08 | .22 | .15 | -.25 | -.15 | -.14 | .02 | -.02 | *35 | .15 | .02 |
| .08        | .16 | .19 | -.00 | .01 | -.02 | -.18 | -.17 | -.15 | -.01 | .06 | -.39 | .10 | .09 |
| .27        | .06 | -.18 | .00 | .16 | -.06 | -.15 | -.05 | .17 | -.05 | -.01 | -.02 | *36 | .05 |
| .17        | .10 | .34 | -.04 | .19 | -.32 | -.10 | .03 | -.03 | .04 | -.04 | -.06 | .07 |
| .27        | .07 | .21 | .04 | .04 | -.17 | -.30 | .07 | -.13 | -.19 | .19 | -.02 | -.01 | .06 |
| .03        | .03 | .09 | .00 | -.24 | .15 | -.11 | -.08 | -.01 | .16 | .24 | -.11 | .12 | .24 |
| -.00       | -.09 | .14 | -.16 | .12 | -.22 | .03 | .07 | -.10 | -.17 | -.08 | -.09 | -.11 | .18 |
| .03        | .21 | .18 | -.09 | -.29 | .05 | .01 | -.18 | -.12 | -.13 | .10 | -.29 | .07 | .07 |
| .14        | .19 | .27 | .08 | .16 | -.17 | -.14 | .04 | -.07 | -.29 | .20 | -.26 | .05 | *41 |
| -.13       | -.02 | .21 | -.06 | .09 | -.19 | -.06 | -.15 | -.05 | -.07 | -.19 | -.18 | .20 | .09 |</p>
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### TABLE 12

**COMPARISON OF THE DPI MEAN SCALE SCORES**

A UNIVERSITY SAMPLE WITH A PSYCHIATRIC SAMPLE

**SIGNIFICANT DIFFERENCES**

(N=60)

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TABLE 13

COMPARISON OF MEANS AND STANDARD DEVIATION OF THE DPI IN A UNIVERSITY SAMPLE WITH A PSYCHOPATHIC SAMPLE: MALES AND FEMALES

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those of Lorr's drug-free sample (1968) (see Table 14), it may be concluded that the mean scores are comparable and that the subjects of the present study are indeed representative of a seriously disturbed psychiatric population.

A comparison of the PIP means between those who refused to take the Differential Personality Inventory and those who agreed to take it are presented in Table 15. A discriminant analysis of the 161 PIPs was then performed to determine whether the "tested group" has certain characteristics, as measured by the PIP, that differentiate that group from the non-tested group. The ability of the PIPs to make the expected discrimination between the tested and not tested groups was significantly above the chance level. The discriminant analysis correctly classified 141 of the 161 patients for an 88% correct classification and identification. On the basis of chance alone, one would expect 53% correct classification (see Table 16). This analysis, done with the Statistical Analysis System computer program (1972) did not pool the within-groups Sum of Squares Cross Product matrices, because these are not homogeneous.

A Canonical Correlation Analysis of the relationships between the DPI variables and the criterion variables was then computed to identify the "components" of the predictor variables (DPI) that were most highly related (linearly) to the "components" of the criterion variables. This statistical procedure has been characterized as a "double-barrelled principal-components analysis" (Tatsuoka, 1971).
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<td>Not-Tested Group Mean (N=101)</td>
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<td>Retardation</td>
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<td>7.75</td>
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TABLE 16
DISCRIMINANT ANALYSIS USING PIP:
TESTED AND NOT-TESTED GROUPS

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<th>Not-Tested</th>
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Discriminant Function Coefficients Using
Pooled Within-Groups Matrix

**b - coefficients:**
- Excitement, -.00101;
- Hostile Belligerence, -.0032;
- Paranoid Projection, .00002;
- Anxious Depression, -.00014;
- Retardation, -.00003;
- Seclusiveness, -.00041;
- Care Needed, -.00064;
- Psychotic Disorganization, .00042;
- Grandiosity, .00006;
- Perceptual Distortion, .00048;
- Depressive Mood, -.00002;
- Disorientation, .00052.

**beta - coefficients:**
- Excitement, -.023;
- Hostile Belligerence, -.005;
- Paranoid Projection, .0005;
- Anxious Depression, -.003;
- Retardation, -.001;
- Seclusiveness, -.033;
- Care Needed, .014;
- Psychotic Disorganization, .003;
- Grandiosity, .005;
- Perceptual Distortion, .011;
- Depressive Mood, -.000;
- Disorientation, .017.
Each pair of functions is determined so as to maximize the correlation between the new pair of canonical variates, subject to the restriction that they be independent of previously derived linear combination. Only one linear combination correlated significantly between the predictor variables and the criterion variables (see Table 17). Table 18 presents the correlation coefficients between the variables of group 1 (the PIP ratings and the WIST) and the first canonical variate of group 1 and between the variables of group 2 (the DPI scales) and the first canonical variate of group 2. As can be seen, the variables of group 1 with the highest relationships to the first canonical variate are Paranoid Projection and the WIST; the variables of group 2 with the highest relationships to the first canonical variate are Infrequency, Cynicism, Familial Discord, and Defensiveness.
<table>
<thead>
<tr>
<th>Canonical Variable</th>
<th>Mean of Group 1 Canonical Variable (from PIP)</th>
<th>Mean of Group 2 Canonical Variable (from DPI)</th>
<th>Canonical Correlation</th>
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<td>Canonical Correlation</td>
<td>$\chi^2$</td>
<td>df</td>
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## TABLE 18

**CORRELATION COEFFICIENTS BETWEEN CANONICAL VARIABLE #1 OF GROUPS 1 AND 2, AND THE VARIABLES OF GROUPS 1 AND 2**

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<th>Canonical Variable #1 Group 2 (DPI)</th>
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<td>Depression</td>
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<td>.307</td>
<td>.011</td>
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<td>Familial Discord</td>
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<td>.465</td>
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<td>.085</td>
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CHAPTER VI
DISCUSSION

The purpose of the present study has been to investigate the validity of the Differential Personality Inventory with a psychiatric population. The central question was asked: Are the DPI variables related to the PIP and WIST variables? While the predictions concerning the relationships between the predictor variables and the criterion variables have not been very accurate, the results of this study indicate that some of the DPI variables (Cynicism, Depression, Infrequency, First Factor, Psychotic Tendencies) have demonstrated validity in this population.

The results of the present study are especially interesting in considering the question of the validity of the DPI scales when one considers the recent and extensive work of Overall and Klett (1972). They have focused their research efforts on the use of empirical methods for the classification of psychiatric patients into groups based on similarities among individuals without regard for any previously existing classification scheme of mental disorders. Their research procedure is as follows: several observations or measurements are made on each individual using the Brief Psychiatric Rating Scale (BPRS). Similar to Lorr's
PIP rating scale used in this study, the BPRS has for its starting point manifestations of behavior known to be associated with psychiatric pathology. On the basis of these BPRS observations, it appeared that some individuals were more alike and some were more different from others. Overall and Klett found that certain modal patterns tend to recur with substantial frequencies and they subsequently inferred that these patterns represent homogeneous subtypes.

From a pool of 6,400 BPRS profiles, 2,000 profiles were randomly selected for the purpose of defining the most representative or most frequently occurring patterns of manifest psychopathology in the general psychiatric population. Six cluster prototypes emerged from their higher order analysis of the 2,000 BPRS profiles of psychiatric patients: (1) Simple Anxious Depression, (2) Hostile Depression, (3) Retarded Depression, (4) Paranoid-Hostile-Suspicious, (5) Withdrawn-Disorganized Schizophrenia, and (6) Florid Thinking Disorder.

DPI variables that correlated significantly with the PIP variables in the present study appear to reflect 5 of these 6 cluster profiles. Before comparing the significant correlations of the present study with the six cluster-profiles, it would be worthwhile to look at Lorr's definitions of the relevant PIP variables, and at Whitaker's definition of the WIST. Lorr (1968) defines five of the PIP variables as follows: (1) PAR
(Paranoid Projection) as a syndrome characterized by suspicion, restiveness, complaints concerning care and treatment, and ready annoyance to imagined slights. (2) ANX (Anxious Depression) as an anxious, bewildered depression. (3) DPR (Depressive Mood) as a syndrome characterized by self-reports of dejection, hopelessness, and failure. (4) SEC (Seclusiveness) as a dimension measuring degree of interpersonal interaction. (5) HOS (Hostile Belligerence) as hostile and obscene language, belligerence, and a tendency towards combativeness.

Whitaker defines (6) the WIST as a measure of an index of schizophrenic thinking. A comparison of Overall and Klett's 6 cluster prototypes with five of the significant correlations of the present study is presented in Table 19. The DPI variables with the exception of HOS correlated significantly with the criteria variables.

The cardinal test of the validity of the DPI in this study is the ability of the DPI scales to identify individuals with certain psychopathological characteristics, and, to differentially sort out these various individuals on the basis of the type of manifest psychopathology. When one considers Overall and Klett's six cluster-prototypes as defining the most representative or most frequently occurring patterns of manifest psychopathology in the general psychiatric population, it is of particular interest that the DPI scales most closely related
**TABLE 19**

**COMPARISON OF OVERALL AND KLETT'S 6 CLUSTER PROTOTYPES WITH CORRELATIONS OF KAVANAUGH'S STUDY**

<table>
<thead>
<tr>
<th>Overall and Klett's Six Cluster-Prototypes</th>
<th>DPI Variable</th>
<th>PIP Variable</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Simple Anxious Depression</td>
<td>Depression</td>
<td>Anxious</td>
<td>.27</td>
</tr>
<tr>
<td>(2) Hostile Depression</td>
<td>Hostility</td>
<td>Hostile Belligerence</td>
<td>.04</td>
</tr>
<tr>
<td>(3) Retarded Depression</td>
<td>Depression</td>
<td>Depressive Mood</td>
<td>.23</td>
</tr>
<tr>
<td>(4) Paranoid-Hostile-Suspicious</td>
<td>Cynicism</td>
<td>Paranoid Projection</td>
<td>.30</td>
</tr>
<tr>
<td>(5) Withdrawn-Disorganized Schizophrenia</td>
<td>Psychotic Tendencies</td>
<td>Seclusiveness</td>
<td>.24</td>
</tr>
<tr>
<td>(6) Florid Thinking Disorder</td>
<td>Infrequency</td>
<td>Whitaker Index of Schizophrenic Thinking</td>
<td>.44</td>
</tr>
</tbody>
</table>
to these prototypes have emerged in the present study as correlating significantly with those PIP scales that are comparable to Overall and Klett's BPRS scales.

Those DPI scales that one would expect to be significantly elevated in this sample above a University sample have indeed done so (see Table 12).

The results of the Discriminant Analysis descriptively tells one the kind of sample that can be tested. Those patients who are more communicative and less seclusive are more apt to take the DPI. If the patient tended to complain or to talk about his/her hallucinatory experiences, then the patient is likely to be tested.

The canonical analysis reveals that the paranoid dimension is most highly related to the first canonical variable.

**Comments on Various Scales of the DPI**

The Depression scale demonstrates considerable sensitivity in measuring depression in the present sample. This scale related to both Anxious Depression and Hostile Depression.

Two of the three validity scales, Infrequency and First Factor, have correlated significantly with PAR, DFR, and WIST. The First Factor Scale consists of "items which reflect a combination of valid substantive psychopathological content and tendencies to respond in an undesirable manner" (Jackson and Carlson, 1973, p.215).
Its significant correlations with DFR and PAR lead one to conclude that this scale does, indeed, measure psychopathology. Infrequency has been defined as a scale comprising "highly improbable items designed to identify nonpurposeful, invalid responding" (Jackson and Carlson, 1973, p 215). Its significant correlation with the WIST in this psychiatric sample is the highest coefficient reported here. Evidently, this scale not only detects invalid responding, it also detects thought disorder.

The DPI Hostility scale failed to correlate significantly with any of the hypothesized criterion variables. Evidence for the validity of this scale is present in its elevation above the University sample as reported by Jackson and Carlson (1973). However, the Hostility scale has not demonstrated differential validity in this study.

The Psychotic Tendencies scale failed to correlate significantly with the criterion variables that its scale name would suggest. Trott and Morf (1972) in a multimethod factor analysis of the DPI, PRF, and MMPI noted that the PST scale appeared to "...reflect a variety of tendencies, among them the tendency to respond undesirably, some or all of the tendencies reflected by MMPI Schizophrenia (e.g. bizzarre mentation, social alienation), extreme and pathological interpersonal
sensitivity, and a lack of achievement motivation associated with severe psychopathology." (p 100-101)

The significant correlation of the PST scale with Seclusiveness in the present study seems to support Trott and Morf’s (1972) findings and provides further evidence that the PST scale is more a measure of pathological withdrawal, isolation, and social alienation from others.

Clinical Utility of the DPI

It would follow from the results of this present study with the DPI that the results fit certain clinical expectations, and, that considering the total profile configuration tells one something more than the individual scales alone. For example, from Table 12 one may begin to specify that with the DPI profile reflecting a functional psychosis, there will be a significant overall elevation of scales. The exceptions would be the Rebelliousness, Impulsivity, Irritability and First Factor scales. From Table 18, one may specify that Infrequency (-.489), Defensiveness (-.468), Cynicism (.454) and Familial Discord (.465) are significant scales of the DPI with this type of psychiatric population. It is also noteworthy that with a DPI profile configuration reflecting a functional psychosis, two of the three Validity scales, Infrequency and First Factor, also function as Clinical scales.
Welsh and Dahlstrom (1958) have conducted a number of studies on MMPI profile configurations. They have specified certain criteria that differentiates patients along a presumed dimension of psychopathology. One of their main conclusions is that it is not required that every scale play a significant role in the profile configuration.

Illustrations 1 and 2 provide a graphic comparison of the results of Kavanaugh's study with Jackson and Carlson's (1973) study. These profile configurations (males and females) are based upon the mean DPI scale scores from both studies.

Further research and validation studies of the various scales of the DPI is indicated. It is recommended that future research would investigate the validity of the DPI scales with those populations which would tend to exhibit the characteristic that the DPI scale names would suggest; for example, Familial Discord, Health Concern, Neurotic Disorganization, Irritability, and Somatic Complaints with a neurotic outpatient population; Socially Deviant Attitudes, Impulsivity, Rebelliousness, and Hostility with a prison population, etc. One might begin to expect that with certain populations certain scales would be elevated, others would be depressed, and the remaining scales would fluctuate at random. Two ways are suggested for the further specif-
ILLUSTRATION 1

FEMALE PROFILE SHEET; A COMPARISON OF MEAN
SCALE SCORES FROM A UNIVERSITY SAMPLE (N=55)
WITH A PSYCHIATRIC SAMPLE (N=35)

<table>
<thead>
<tr>
<th></th>
<th>University Sample</th>
<th>Psychiatric Sample</th>
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<td>INF</td>
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<td>DEP</td>
</tr>
<tr>
<td>Mean Scores</td>
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<td>4.4</td>
</tr>
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</table>

<table>
<thead>
<tr>
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<th>University Sample</th>
<th>Psychiatric Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF</td>
<td>GYN</td>
<td>DEP</td>
</tr>
<tr>
<td>Mean Scores</td>
<td>2.5</td>
<td>11.1</td>
</tr>
</tbody>
</table>

---

Psychiatric

University
ILLUSTRATION 1

PROFILE SHEET: A COMPARISON OF MEAN DPI SCORES FROM A UNIVERSITY SAMPLE (N=270) WITH A PSYCHIATRIC SAMPLE (N=35)

<table>
<thead>
<tr>
<th>Health Concern</th>
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<th>Psychiatric Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hos</td>
<td>Imp</td>
</tr>
<tr>
<td>--------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Hos</td>
<td>5.7</td>
<td>9.3</td>
</tr>
<tr>
<td>Imp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nds</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Reb</td>
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20, F2
ILLUSTRATION 2

MALE PROFILE SHEET: A COMPARISON OF MEAN DEPRESSION SCALE SCORES FROM A UNIVERSITY SAMPLE (N=100) WITH A PSYCHIATRIC SAMPLE (N=25)

[Graph showing comparison between University and Psychiatric samples for various scales]

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<th>CYN</th>
<th>DEP</th>
<th>FDS</th>
<th>HLC</th>
<th>HOS</th>
<th>IMP</th>
<th>IRY</th>
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<th>PST</th>
<th>REB</th>
<th>SDA</th>
<th>SMC</th>
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</thead>
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<td>3.8</td>
<td>11.0</td>
<td>8.2</td>
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</table>

Psychiatric Sample

<table>
<thead>
<tr>
<th>Mean Scores</th>
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<th>CYN</th>
<th>DEP</th>
<th>FDS</th>
<th>HLC</th>
<th>HOS</th>
<th>IMP</th>
<th>IRY</th>
<th>NDS</th>
<th>PST</th>
<th>REB</th>
<th>SDA</th>
<th>SMC</th>
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<tbody>
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<td>11.1</td>
<td>10.3</td>
<td>9.0</td>
<td>9.8</td>
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<td>9.0</td>
<td>10.5</td>
<td>10.1</td>
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ILLUSTRATION 2

PROFILE SHEET: A COMPARISON OF MEAN DPI
SCORES FROM A UNIVERSITY SAMPLE (N=100)
WITH A PSYCHIATRIC SAMPLE (N=25)

University Sample

Psychiatric Sample

<table>
<thead>
<tr>
<th>DS</th>
<th>IMP</th>
<th>IRY</th>
<th>NDS</th>
<th>PST</th>
<th>REB</th>
<th>SDA</th>
<th>SMC</th>
<th>DEF</th>
<th>FCC</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>10.2</td>
<td>11.5</td>
<td>8.4</td>
<td>3.8</td>
<td>11.0</td>
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<td>0</td>
<td>10.5</td>
<td>10.5</td>
<td>10.7</td>
<td>10.1</td>
<td>9.0</td>
<td>10.5</td>
<td>10.1</td>
<td>8.9</td>
<td>9.7</td>
</tr>
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</table>
ication of DPI profile configurations; first, to replicate the present study, and, second, to replicate earlier studies that have been done with the MMPI to ascertain configurational profiles. It is also recommended that, wherever possible, this kind of behavioral description (PIP, BPRS, etc.) be used rather than Kraepelinian - originated ICD - type classification schemes.
The central plan of the following discussion is to briefly trace the development of the structural division of "ego" and the subsidiary concepts of adaptation, defense, etc. and to integrate these concepts into an approach that will aid in the functional understanding of the psychoses.

In his earlier writings Freud had vaguely referred to the ego as representing "the person", "the self" or "consciousness". However, in 1923 he published his structural theory of the mind: 《The Ego and the Id》. The structural hypothesis dealt with both the structure and function of the ego. The ego was seen as being a coherent organization of mental processes which arose from the identification with abandoned objects. Included in this concept of the ego were those structures felt to be responsible for resistances and were themselves considered to be unconscious, i.e., the defensive structures. The ego functions so as to transform the energies of instinctual drives into energies of its own. The mediating functions of the ego were further delineated in 《The Problem of Anxiety》 (1926). The position presented was that the ego has many defenses at its disposal and that the ego initiates a particular defense in response to an anxiety signal. Freud brought external reality back into the center of his theory and for the first time a conception of adaptation is implied. His theory of the ego provided a unitary
solution to the ego's relations to reality and to the instinctual drives.

With her classic publication, *The Ego and Mechanisms of Defense* (1936), A. Freud introduced the concept of defense against external stimuli. Her contributions developed and elaborated both the concept of the ego and the concept of defense. Her approach was one of focusing upon the specific defensive strategies; to do so is considered to be the first step in gaining knowledge of the ego itself in both pathological and normal personality development. A. Freud set the concept of defense more firmly into the structural framework. She emphasized that defenses are not simply manifestations of pathology but are essential aspects of normal personality development. Defense against external stimuli becomes the model for defense against inner danger. This integration of defense with reality relations broadened the foundations for psychoanalytic ego psychology.

H. Hartmann (1937) further differentiated the ego into its various functions. He was in agreement that defense's are part of normal personality development and play a major role in the individual's adaptive behavior. The prototype of later ego functions and defense mechanisms is the way that the infant mediates between his body and external events and stimulation. The earlier defensive maneuvers are used later by the ego in an active way to protect itself from anticipated danger from with-
in as well as from anticipated danger from without (1959).
Hartmann's differentiation of the various ego functions
contrasted with Freud's original structural hypothesis
(1923). According to Hartman certain aspects of the ego
do not necessarily occur as the result of a conflicting
encounter with reality, viz., perception, motility and
language. These ego functions constitute basic adaptive
mechanisms and form the nucleus of a sphere of adaptive
psychological functioning that is relatively independent
of instinctual conflict. These ego functions have, in
Hartmann's phraseology, "primary autonomy". The defense
mechanisms of the ego result from behavior that resolves
external conflict. Eventually, they can be freed from
the conflict through the process of neutralization.
Hartmann refers to these functions of defense as having
"secondary autonomy". These adaptive ego functions of
secondary autonomy, i.e., defense mechanisms, become the
characteristic preferred ways of mediating with conflict
in the future. Hartmann sees the ego as being partly
conflict-born and synthetic in function and partly conflict-
free and executive in function.

Iampl-De Groot (1957) agrees with the position that
internal defense is modeled after external defense and
that defense mechanisms have their origin in the course
of normal development of ego functions. Pathological
defense mechanisms differ from "normal" defense mechanisms
in that they are: "...pathologically exaggerated or distorted regulation and adaptation mechanisms which in themselves belong to normal development." (1957, p 118)

How might one define ego? Defense? and, what is the functional relationship between these two concepts? Specificity in definition of the ego is perhaps not possible as "the ego" is not directly observable. An attempt to operationally define the ego would result in an endless list of functions (Hartmann, PSA 1957). However, a definition of the ego may be approached from the conceptual intrapsychic level and from the interpsychic - adaptive level.

The ego and the id are believed to differentiate from a common matrix with certain ego potentials being present at birth, e.g., perception, motility. The ego arises out of the infant's continuous interactions with somatic and external reality and, as it gradually differentiates, it begins to take on some vital functions in the personality organization. Before discussing these vital functions it is necessary to introduce additional constructs: the id, primary process, and the secondary process. The id is a construct that refers to that part of the mental apparatus wherein lies the source of the basic drives or instincts in man: sex and aggression. The id operates, or is guided, by the primary process in that immediate gratification of impulse is sought and
desired with little regard to external circumstances. Wish, need, and fantasy are the irrational bases for organizing facts of experiences and provide the impetus for unmodulated discharge of drives. The ego is functionally defined as the mediator between the id, the superego and external reality. The ego takes into account external demands of the situation, anticipates consequences of one's actions and functions in accordance with the reality principle and secondary process principles. Its vital functions for the preservation of personality integration center upon preventing the id (which is wholly unconscious) from direct expression or representation in the system conscious or the system pre-conscious. To accomplish this goal the ego functions so as to channel and control the instinctual drives into derivative expressions so as to mesh with external reality and internal standards. To assist in this task the ego relies upon the unconscious defense mechanisms at its disposal.

From an interpsychic - adaptive level the ego may be conceptualized in the following way: If one is to think of life as being a continuous process of interchange, negotiation, and adaptation with the environment, the question of specificity of definition becomes tangential. Above all else, the ego is a process, the essence of which is to master, to integrate, and to make sense of experience. The essence of the "ego" construct is to give
purpose; to free man from inborn or instinctive patterns of behavior. Man can thus remember the past, contemplate the present, and plan for the future. Rather than rigid patterns of behavior, man's actions can become goal-directed:

"The boundary (between ego and id) is the boundary between instinctual and purposive processes...The scheme of processes in the id would then be, in short, instinct - instinctual expression; those of the ego, however, are task-task-solving, or attempted solution."

(Waelder, 1960, p 177)

Defense, a subsidiary concept of the ego, may be defined in terms of unconscious processes that:

"...rely on intrapsychic maneuvers or operations by means of which they may block any and all discharge of threatening impulses. These operations usually entail denying conscious representation to ideas, affects and other impulses associated with the threatening impulses themselves. Otherwise, if these impulse representations gained consciousness, they would bring the individual that much closer to being dominated by the rejected impulses themselves, and would tend to stir up intense anxiety, guilt and other painful feelings."

(Schafer, 1954)

A Conceptualization of Personality Development

As the infant grows to biosocial maturity his thinking and behavior becomes organized less by primary process principles and more by secondary process principles. That is, in normal personality development the drive-determined autism of the young child is indifferent to reality
and logic and is organized around the vicissitudes of the drives; it is oriented toward immediate, direct and uncontrolled discharge of impulse; it is fluid, undiscriminating, and unreflective; it ignores relations of time, place identity, and causality (Freud, 1911). With repeated contact of the child with the environment over a prolonged period of time, childhood megalomania is replaced by a recognition of the power of natural forces. The reality sense develops through a series of repressions to which the child is compelled through adaptation to renunciations demanded by experience (Ferenczi, 1913). These processes develop secondarily under the impact of external reality. As an adult, the veridical, socially adaptive thinking of the adult is predicated upon the delay of immediate, direct, and uncontrolled discharge of impulses; it is oriented toward reality and logic; it is reflective and considers consequences of behavior. The primitive levels of psychic functioning that are organized by primary process principles, however, do not go out of existence with the attainment of advanced levels of adaptation in thought and behavior. Rather, with each advance in differentiation new and interrelated structures emerge and achieve a new hierarchical integration, thus diminishing with each new advance the syncretism which characterized the preceding level in the hierarchy. Each aspect of the individual (drives, defenses, thinking, behavior,
differentiates in this fashion. The more primitive levels coexist with and are always ready to replace the more advanced levels (Werner, 1950). Advanced stages are but superimposed upon lower ones and even supported by them (Werner and Kaplan, 1963). All current experiences no matter how neutralized or specific they seem to be, have relevance to the more primitive, more syncretic unconscious categories.

Cognitive Style Research

In 1947, David Rapaport sired a series of research projects under the title of the Perceptual Project. This Perceptual Project sought to explore the apparent consistencies in the ways that individuals perceive their world and come to terms with it (Klein, 1953). The underlying rationale for this research project was: if the perceptual processes are conceived as being the point of contact or the medium through which reality is filtered, then would it also not be here that the selective and adaptive controls of personality come into play? Rapaport regarded his work as developing the efforts of Kraepelin and Bleuler to find in the forms of thinking the criteria for distinguishing various pathological entities. This was in contrast to focusing upon thought content. The general feeling was that with the development of ego psychology the way had again been opened to a systematic approach to the structure of thinking.
Thought organization was felt to be the key to the specifications of personality dynamics.

Results of the early research investigations indeed evidenced individual consistencies in cognitive and perceptual functioning:

"All these studies lead to a simple but cogent point: forms of perceiving are closely connected with other ongoing events of the organism...There is, in short, consistency in a person's thought processes - a cognitive style. Evidence from several directions leads us to believe that such fundamental styles of thinking reflect really basic dispositions in personality."

(Klein, 1949, p 96)

This "cognitive style" has different dimensions one of which is the individual's style of perceiving. This more or less selective organizing and distorting style reflects relatively stable character trends that have grown out of conflict and compromise. The particular style of perceiving indicates the favored ways by which the individual equilibrates tension between internal imperatives (drives) and external demands (environment). Subsequent research demonstrated that ego control principles take form in perception through perceptual activities and were found to be consistently utilized in neutral situations as well as in stress situations (Klein, 1951); represented longitudinally stable arrangements of cognitive processes that shape the expression of intentions and needs under a variety of conditions (Schimek, 1967); evolves in part as a function of maturation and life
experiences and become enduring aspects of an individual's cognitive functioning and adaptive style (Santostefano, 1970, p 76); and, extends across both perception (immediate) and intellectual functioning (symbolic) (Shapiro, 1965).

The "cognitive styles" themselves are believed to have evolved from, to have been shaped by, and to be expressions of major personality trends and predispositions. They are enduring, integrated response tendencies which have remained in the service of enduring configurations of drives, defenses, and adaptive efforts by the individual.

The individual's cognitive style may be viewed as being as integrated functional aspect of the individual's character structure (Schafer, 1954) and as such can be modified only slowly and with great difficulty. A key question becomes: Is the consistency and continuity of one's cognitive-perceptual organization also demonstrable in periods of decompensation?

Developmental Factors and Stability Over Time

Research addressed to the exploration of the factors that contribute to the development of one's particular cognitive style has pointed to the importance of the mother-child interactions in the child's normal course of personality development (Witkin et al., 1962). The mother's own level of differentiation is believed to be significantly related to the degree of differentiation attained by the child (Witkin et al., 1962; Witkin, 1964). However, as the child grows older, his level of cognitive differentiation
tends to be more consistent with that of his opposite-sexed parent than with the same sexed parent (Sorah, 1965).

Once the individual's cognitive style is functionally established it has been found to be strikingly stable over time even when changes in important life circumstances such as marriage, divorce, and psychotherapy occurred (Bauman, 1951). Longitudinal studies reflect the relative stability of cognitive style during the growth years. Children who show more developed differentiation in the areas considered at one age tend to have the same relative standing at other ages as well (Witkin, 1965). One's cognitive style has been found to be stable over time, to be identifiable through the individual's specific acts (Shapiro, 1965) and to be consistently utilized in neutral situations as well as in stress situations (Klein, 1951).

**Relationship to Pathology and Defensive Strategies**

Cognitive style has been shown to be related to the particular expression of pathology (Witkin et al., 1954; Taylor, 1956; Bryant, 1961; Powell, 1964; Janucci, 1964; Witkin, 1965). For example, an articulated and highly differentiated cognitive style has been found among obsessive-compulsives, neurotics with organized symptom pictures, as well as with borderline patients with a well-developed defensive structure (Zuckman, 1957). Process-schizophrenics have been found to be significantly more
field-dependent than reactive-schizophrenics (Bryant, 1961); paranoids have been found to have an articulated cognitive style (Witkin et al., 1954; Janucer, 1964; Powell, 1964) and to be more field-independent (Taylor, 1956) as contrasted with psychotics who hallucinate and tend to be more filed-dependent (Powell, 1964).

The studies of cognitive style have been conducted against the general background of psychoanalytic theory. In general, the control principles such as leveling, sharpening and focal attentions are believed to be emergent secondary process structures "...which are cousins to the ego structures conceived of earlier under the general rubric of defense" (Gardner, 1959). The cognitive controls which go to make up one's cognitive style are like defense mechanisms in that they develop in the course of normal personality development (Gardner et al., 1962), that both function according to relatively homogeneous principles, and that attention deployment or attention dynamics may be the common process underlying defense and cognitive style (Gardner, 1959). Research exploring the relationship between cognitive control principles and defense have yielded some fruitful results. Individuals who utilize repression as their principal mechanism of defense and who are prone to developing symptoms of an hysterical variety generally manifest cognitive controls such as leveling, limited focusing, limited scanning, and field-dependence. In-
individuals who utilize isolation as their most characteristic mode of defense and who are prone to obsessional symptoms were found to characteristically exhibit such control principles as sharpening, focusing, extensive scanning, and filed independence (Holzman and Klein, 1956; Gardner, 1959, 1962, 1962). These consistencies in the individual's stylistic functioning are, as previously mentioned, stable over time but also have been found to be invariant to drugs, ECT, and experimental attempts to alter the style (Bauman, 1951; Shapiro, 1965; Witkin, 1965).
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IN APPENDICES B-D, LEAVES 85-109,
NOT MICROFILMed.

Appendix B. "Psychotic Inpatient Profile", by Maurice Lorr, Ph.D. and Norris D. Vestre, Ph.D. Published by Western Psychological Services, Publishers and Distributors, 12031 Wilshire Boulevard, Los Angeles, California, U.S.A. 90025.

Appendix C. "WIST Protocol Booklet", by Leighton C. Whitaker, Ph.D. Published by Western Psychological Services, Publishers and Distributors, 12031 Wilshire Boulevard, Los Angeles California, U.S.A. 90025.

Appendix D. "Differential Personality Inventory", Form L; by Douglas N. Jackson and Samuel Messick.
APPENDIX E
CONSENT FORM

I hereby consent to an interview with__________, which I understand is for the purpose of examining the way that I think and feel about different things.

I understand that the answers I give will be held in confidence. I also agree to permit the ward staff to communicate their impressions of me to be used in conjunction with the information from the interview.

(Signed)____________________

(Date)____________________
Bibliography


Jackson, D., Messick, S. *Differential Personality Inventory (Form A).* London, Ontario: University of Western Ontario, 1964.


Trott, M., and Morf, M. A multimethod factor analysis of the Differential Personality Inventory, Personality Research Form, and Minnesota Multiphasic Personality Inventory. Journal of Counseling Psychology, 1972, 19, 94-103.


**Vita Auctoris**

1941 Born in Detroit, Michigan to Bernard J. and Helen C. Kavanagh

1955 Completed elementary school, St. Mary's of Redford; Detroit, Michigan

1959 Graduated from the University of Detroit Highschool

1966 Graduated from the Detroit Institute of Technology; B.A. Psychology

1970 Graduated from the University of Detroit, M.A. Clinical Psychology

1971 Accepted into the University of Windsor Doctoral Program in Clinical Psychology

### Employment

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<th>Position and Details</th>
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<td>4/73 - Present</td>
<td>Wake Psychology Clinic, Part time Staff Psychologist.</td>
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<tr>
<td>4/72 - 10/73</td>
<td>Adult Psychiatric Clinic, Half-time Staff Psychologist.</td>
</tr>
<tr>
<td>9/72 - 8/73</td>
<td>Psychological Center, University of Windsor, Half-time Internship.</td>
</tr>
<tr>
<td>9/71 - 4/72</td>
<td>University of Windsor, Dept. of Psychology, Diagnostic Assistantship.</td>
</tr>
<tr>
<td>8/70 - 8/71</td>
<td>Boulevard Vocational Halfway House, Full-time Psychologist - Director.</td>
</tr>
<tr>
<td>12/69 - 9/71</td>
<td>Child Development Center, Full-time Staff Psychologist.</td>
</tr>
<tr>
<td>7/69 - 12/69</td>
<td>Sinai Hospital of Detroit, Diagnostic Adult Practicum.</td>
</tr>
<tr>
<td>3/69 - 8/69</td>
<td>Children's Center of Wayne County, Diagnostic Child Practicum.</td>
</tr>
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