THE UNIVERSITY OF CALGARY

Normal, Acute and Chronic Groups: Exploring A Normalized MMPI Interpretation

by

Patricia Cameron

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "Normal, Acute and Chronic Groups: Exploring a Normalized MMPI Interpretation" submitted by Patricia Cameron, in partial fulfillment of the requirements for the degree of Master of Science.

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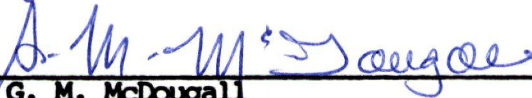

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ABSTRACT

The focus of the MMPI is almost exclusively negative. Research with nonclinical groups indicates this focus may be too narrow in that it fails to identify individual strengths where present. Research exploring this shortcoming with clinical groups is sadly lacking.

The aim of this study was to explore the feasibility of broadening the MMPI descriptor base in the positive direction for both clinical and nonclinical groups. Using positive and negative sets of adjectives three groups of raters were asked to rate three groups of subjects identified as 'normal', acutely distressed and chronically mentally ill.

Results reveal that raters for all groups showed a willingness to endorse both positive and negative characteristics of the subjects they rated, despite the fact all subjects were rated on personality dimensions which, according to MMPI profiles, included the presence of psychopathology. In addition, no relationship was indicated in terms of the amount of raters' endorsement of either positive or negative characteristics and the degree of psychopathology as indicated by subjects' MMPI scale scores. It is suggested that taken together these findings may indicate, despite presence or degree of psychopathology, persons retain many inherent or learned adaptive features, to the point these can and should be identified and drawn upon in a systematic manner in both the assessment and treatment process. Moreover, given further

research efforts, the MMPI could serve as the ideal tool with which to provide such a systematic and balanced inventory of both client liabilities and assets.

Limitations of the study are discussed and recommendations made for future research.

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Several people were important in the completion of this work by offering their support and cooperation.

First, this thesis is dedicated to my family, and in particular to my brother Gary, whose determination and courage during the course of his rehabilitation has shown me the power of the human spirit.

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CHAPTER I

INTRODUCTION

This study concerns one of the most widely known objective personality testing instruments in use today: The Minnesota Multiphasic Personality Inventory (MMPI). The test was first developed in 1940 by Hathaway and McKinley in an attempt to construct an objective measuring tool for routine psychiatric case assessments. In addition, the authors hoped the inventory would provide an objective estimate of psychotherapeutic effect over time. (Hathaway, 1965)

Although originally intended for use with clinical populations, and extensively used for clinical assessment since its inception, the MMPI has recently come to be used with numerous nonclinical groups in addition to being adapted for use with adolescents (e.g., Marks, Seeman & Haller, 1974). Owing to its accuracy, ease of administration and scoring, the MMPI has in many instances come to be the test of choice in such diverse settings as personnel selection, vocational counselling, most if not all clinical settings and with numerous student groups for a variety of purposes. (Graham, 1977)

As popular as it has been, however, the MMPI has undergone its share of criticism. One such criticism is that the original 10 clinical scales are based solely upon psychopathologic nosology -- the only criterion of health being that there be few scores above a set cutting point: "In effect, it is based on a definition which makes no positive

requirements for psychological health." (Mehlman & Kaplan, 1958, p.118) As a result of this definition, in whatever capacity the MMPI is used, for persons who obtain elevated profile scores the resulting interpretation focuses almost exclusively upon negative, i.e. pathological, characteristics. It leaves little, if any room to off-set this interpretation with whatever more adaptive features an individual may possess. This statement is substantiated by the results of a study by Gilberstadt and Duker (1965). They found that of approximately 130 descriptive adjectives used for elevated MMPI scores, fully 90% were clearly uncomplimentary to the individual. Examples include selfcentred, superficial, apathetic, stubborn, immature, etc.

Historically, this predominantly "negative bias" originated with the construction of the MMPI when it was standardized using a psychiatric population of Minnesota adults. From this developed descriptors for each of the MMPI scales which, given the author's original goals, were purely descriptive of psychopathology and were not developed for more normal-range or adaptive aspects of human functioning.

A second, overriding factor leading to the existence of this negative bias is based in the marriage of psychiatry and medicine, and psychiatry's consequent adherence to a medical model. The medical model defines health negatively, i.e., as the absence of illness or disease. (Wright & Fletcher, 1983) This definition has had the overall effect of focusing upon identifying an individual's deficits while clearly placing

insufficient emphasis on existing assets. As a corollary to using this definition of health, mental health professionals have over the years been trained in detecting liabilities associated with their client's illness. Hence, workers have invariably been provided the tools to assist in the objective measurement of these liabilities - the MMPI being such a tool.

This negative orientation appears to permeate the perceptions of those who stand in care-giver positions. Possibly the most startling evidence of this is highlighted by the now classic study "On Being Sane in Insane Places" by Rosenhan (1973). This study describes how the behavior of eight normal people, upon admission to a psychiatric facility, was systematically interpreted and labelled as symptomatic of psychological disturbance. Those behaviors, which under other circumstances would have been regarded as normal, were entirely overlooked or profoundly misinterpreted - one possible consequence of training care-givers to detect illness - not health.

Lending further support to this observation, Gordon (1981) discusses how, with the current trend toward deinstitutionalization of mental health facilities, we have forgotten in the process to deinstitutionalize the staff who have been trained for and worked within these same institutional settings. An associated goal, and one too frequently ignored, concerns addressing the changes that will be required in altering the negative focus of such assessment tools as the MMPI which are used

pervasively throughout these same settings.

Wright and Fletcher (1983) argue that this long-standing preoccupation with the negative also tends to underrate the abilities of clients in treatment. Often they are perceived as less able and more dependent than they need be. They have been and will continue to be devalued and their role as active, self-determining participants in the treatment plan will be diminished.

Finally, Dahlstrom, Welsh and Dahlstrom (1972, Vol.1), considered among the foremost authorities on the MMPI, have made reference to the need to focus on the more positive aspects of client functioning. They indicate that the clinician, in interpreting MMPI profile results, must constantly be aware that efforts towards rehabilitation must be based upon the client's existing "assets, capacities and strengths." (p.291) What they fail to address however is how the clinician is to glean this information from the current MMPI design. Based on the previously noted findings of Gilberstadt and Duker (1965), any clinician would be hard pressed to assess these attributes given the existing standard MMPI interpretations for elevated profile scale scores.

Historically, while attempts at inclusion of client assets in the diagnostic and treatment process have been minimal, it is not a novel concept. Witryol and Boly (1954) note it can be found in Roger's client-centred approach which speaks of 'positive growth potential', and if one searches can be found in psychoanalytic therapies in the rather vaguely

defined concept of 'ego strength'. While acknowledging these attempts, the authors also criticize them as regarding ". . .positive personality characteristics in such general terms as to reduce implementation to little more than a strong profession of faith or to provide only spuriously useful concepts. . ." (Witryol & Boly, 1954, p.p. 64-65)

The logical extension of this criticism has been a call by Wright and Fletcher (1983) for the development of a systemic tool addressing the need for a balanced inventory of client assets and liabilities. A similar need has been identified by Kunce and Anderson (1976), but more specifically in terms of further expanding the MMPI descriptor base to include positive aspects of client functioning. Their rationale for attempting to develop such a balanced MMPI descriptor repertoire includes the following:

1) A more balanced repertoire of adjectives which would allow for identification of both adaptive and maladaptive features of functioning". . . avoids description of patients in terms of liability statements only (which clinical psychologists seem over-inclined to do)." (Hovey, 1967, p. 123)

2) A more balanced descriptor repertoire would ". . . provide a more fully comprehensive basis for formulating realistic assessment of human potential." (Kunce & Anderson, 1976, p. 776)

3) A more balanced descriptor repertoire would alleviate the common shortcomings of assessment procedures in ". . concentrating on negative aspects of functioning, with insufficient concern for positive aspects." (Wright & Fletcher, 1983, p. 229)

The preliminary work of Kunce and Anderson (1976) and Kunce (1979)

at attempting 'positive' expansion of the MMPI descriptor repertoire will serve as the basis for the current research. However, as will be discussed in the following chapter, this preliminary work was largely aimed at exploration of the feasibility of positive adjectives being appropriate for 'normal' subjects experiencing situational stress at the time of MMPI administration. Equally important however, is that psychiatrically disabled groups continue to be devalued by a society which is persistently reminded of their liabilities and short-comings.

In keeping with the rationale advanced by Kunce and Anderson (1976), the purpose of the present study is to explore further the utility of the MMPI descriptor repertoire with both psychiatric and non-psychiatric groups.

CHAPTER II

LITERATURE REVIEW

In a comprehensive literature review, Kunce and Anderson (1984) note that when the MMPI is used with non-psychiatric groups, attenuated interpretations are based on the standard norms originally developed for psychiatric groups. These interpretations are frequently inadequate and misleading in that they focus almost exclusively on psychopathological behavioral descriptors ". . . that fail to acknowledge client strengths and positive personality traits when present." (Kunce & Anderson, 1984, p. 41) They define two major groups where the inadequacy of these standard negative interpretations are highlighted, defined as follows:

> . . . (1) clients whose lives are relatively intact, who function well on their jobs but who in increasing numbers are seeking counselling or psychotherapy from private therapists or from agencies that do not deal with grossly disturbed clients; and (2) individuals who have not sought help but instead are asked to take the test for purposes that have nothing to do with treatment - purposes such as personnel selection and promotion, graduate school admissions, and research studies on creative persons and other special groups. (Kunce and Anderson, 1984, p.41)

At the outset, it has been argued that to use the MMPI with such nonpsychiatric groups is in itself inappropriate given the original standardization and overall purpose of the MMPI. This position is aptly stated by Butcher and Tellegen (1978, p.621):

> The MMPI is often mistakenly considered to be an all-purpose personality assessment instrument that is sensitive to 'normal-range' personality attributes. Consequently, some researchers use the MMPI with groups for which a different instrument might be appropriate. The standard clinical MMPI scales are measures

> of psychopathology, not general personality. The MMPI should not be made to do what it is not designed to do.

With this statement, Butcher and Tellegen remind researchers and users of the MMPI alike that the problem is not so much in the design of the MMPI as it is in the manner in which it is being used. However, a number of counter-arguments suggest a call for a moratorium on MMPI use with non-psychiatric groups may not in fact be the most feasible solution:

1) In the most recent nationwide survey of tests used by psychologists (Lubin, Larsen & Mattarazzo, 1984), the MMPI continues to be the most widely used objective personality assessment instrument in both psychiatric and non-psychiatric settings. Due to its ease of administration and scoring it is unlikely this trend will change.

2) There now exists a dearth of research on the MMPI in non-psychiatric settings. To relegate this research to back shelves on the assumption it is misguided is by far over-simplifying the issue. Rather it behooves researchers to be alerted to the consistency of findings that a purely pathological descriptor base is inadequate for a number of non-psychiatric groups and to explore alternative interpretive options based on these findings.

3) As discussed in the Introduction to this research, regardless of

whether the MMPI is used with psychiatric or non-psychiatric groups, its negative orientation has potentially damaging effects. Attempts should be made to counter the inherently negative orientation of the MMPI with whatever adaptive features of functioning any individual taking the test may possess.

The major non-psychiatric groups where numerous studies point to standard MMPI interpretations as inadequate include student groups at both graduate and undergraduate levels, and creative groups.

Dobson and Stone (1951) found that 33% of the males and 27% of the females of their college sample had one or more clinical scores above seventy. These subjects were said to be functioning well in their academic studies, in addition to having no previous or current involvement in counselling services. Similarly, over one-fourth of Schofield's (1953) sample of medical students had one or more scores greater than seventy; those with elevated scores had the same or higher grade point averages as other students who did not elevate the MMPI.

Dean and Richardson (1964) found that male students in graduate schools in general show especially high M/f scores which often average more than seventy. Related to this Barger and Hall (1964); Goodstein, Crites and Heilbrun (1963), and Kennedy et al., (1960) report elevated scores in these instances appear more reflective of high intelligence, sensitivity and achievement than of disturbance. A similar array of evidence exists with respect to student elevations on the Pd scale where

subjects revealed such positive characteristics as assertiveness, ambition and intelligence. (Osborne, Sanders & Young, 1956; Sutker & Allain, 1983; Schofield, 1953)

A study by Sopchak (1952) examined MMPI scores of 482 college students at the University of Maine, studying general psychology. Results revealed that 5% of the women exceeded a T-score of 70 on at least one clinical scale, while at least 5% of the men exceeded this level on all but three of the scales.

Norman and Redlo (1952) administered the MMPI to 149 male senior and graduate students at the University of Mexico. Mean profile scores show students obtained T-scores above the published norm on all of the MMPI clinical scales. Similarly Clark (1953) in a comprehensive study, administered the MMPI to over 1,400 students entering the University of California over two consecutive Fall semesters. He found that on all scales the mean for college men is above the norm, while on all but three scales the mean for college women also exceeded this norm. Based on these findings he stated he felt it necessary to alter the 'critical' score when one is interpreting the profiles of college students.

Murray et al., (1965) administered the MMPI to a sample of 375 college students preparing for teaching careers. Both college males and females had significantly higher Pd scale scores than those of the respective Minnesota normal groups. The authors recommended the development of separate Pd norms for college populations. Expanding on this

recommendation Goodstein (1954), in a comprehensive study of over 5,000 students from eight colleges, found the occurrence of elevated scores, without the presence of emotional disturbance, to be so pervasive as to ". . . support the idea that separate norms for college students as a group are not only desirable but essential." (Goodstein, 1954, p. 439)

Rees and Goldman (1961) administered the MMPI to 200 subjects defined as 'creative' based on self-report questionnaires identifying actual production of specific creative works. They found that their Art group received scores above the published norms on all scales of the MMPI. Moreover, they were unable to detect evidence supporting these scale elevations were related to maladjustment.

Barron (1969), in a comparison of writers and architects, notes that based on standard MMPI interpretations, creative groups consistently emerge as having more psychopathology than do the more representative members of this group. In fact, the average creative writer was found to score in the upper fifteen percent of the general population on all of the MMPI clinical scales. MacKinnon (1962) reports similar findings for his group of creative architects. Subjects earned scores which on the average were five to ten points above the general norm, with all male subjects obtaining extremely high peaks on the M/f scale. Rather than attributing these scores to the presence of psychopathology, MacKinnon notes these scores are ". . . less suggestive of psycho-pathology than of good intellect, complexity and richness of personality,

general lack of defensiveness, and candor in self-description - in other words, an openness to experience and especially to experience of one's inner life." (MacKinnon, 1962, p.488)

Other researchers who support the contention that elevated MMPI scores can have positive behavioral implications include Rosen and Rosen (1957), who administered the MMPI to a group of 21 union business agents. Scale elevations were found on four of the MMPI clinical scales (Hs; Hy; Pd; and Ma). However the authors found a relationship between high scale scores and success within the agent's organization. They conclude the majority of personality characteristics indicated by the agent's peak scores, and which under other circumstances would have been considered negative, were utilized for positive purposes within the role and demands the agents had to perform (e.g. tendency toward overactivity and enthusiasm; personable but with little emotional depth; fear of failure, etc.).

Hovey (1953) had nursing supervisors make ratings of both assets and liabilities of 137 student nurses and compared these ratings with the students' MMPI profiles. His results indicate that some traits of positive value, as well as ones of negative value are associated with elevations of various scales. Examples of these are as follows:

Scale	Positive Attributes	Negative Liabilities
High Hy	friendly; cooperative	immature

High Pd	initiative; active participant; desires responsibility	aggressive
High Pa	outgoing	lacks self-confidence
High Pt	neat; ingenious	poor socializer
High Sc	active participant; initiative	immature

(Hovey, 1953; p.p. 143-144)

Again the conclusion drawn by the researcher is that elevated MMPI scores can represent positive as well as less desirable personality attributes.

In summary, many researchers have stated reluctance to attribute elevations on MMPI clinical scales to the presence of emotional disturbance. Rather, there is research evidence from non-psychiatric groups to support the attribution of these deviations to more positive and perhaps more highly developed personal assets and resources than is found in the general population. The consistency of such findings raises the question of whether standard MMPI interpretations are in fact too narrow in scope (i.e. negatively oriented) to provide accurate and fair personality descriptions for a number of non-psychiatric groups. Moreover, a comprehensive view of the literature reveals no published research exists which attempts to counter this negative orientation of the major MMPI clincial scales with more adaptive features of personality for

psychiatric groups. As discussed in the Introduction to this research, the problem then remains as to the impact of using a largely negative descriptor base for psychiatric groups who elevate MMPI clinical scales. The question again arises as to whether this negative orientation offers a fair, humane and constructive approach to personality assessment and subsequent treatment for these groups, especially when considering that effective treatment plans should take into account client assets and strengths.

Unfortunately, despite the plethora of evidence suggesting existing MMPI interpretations are too negatively focused for fair and accurate assessments, particularly for non-psychiatric groups, attention to alternative interpretive methods has been largely ignored.

Kunce and Anderson (1976) have offered one possible solution: based on the consistency of evidence that non-psychiatric groups frequently elevate MMPI clinical scales, but without evidence of existing psychopathology, they hypothesized that each MMPI clinical scale represents an underlying personality dimension which can be manifested behaviorally in either a positive or a negative form. The form manifested depends upon the degree of distress an individual is experiencing at any given point in their life.

Based on this hypothesis, they undertook to delineate both positive and negative descriptors appropriate for each of the underlying personality dimensions on each of the MMPI clinical scales. These descriptors

were derived from a review of some of the major references on the MMPI (e.g. Carkhuff, Barnett & McCall, 1965; Drake & Oetting, 1959; Duckworth & Duckworth, 1975; Good & Brantner, 1974; Hathaway & Meehl, 1951; Hovey, 1953), and upon their own clinical experience. From this review they selected both positive and negative sets of adjectives for each of the ten scales. They then placed these in juxtaposition ensuring no one adjective was repeated for more than one scale. The results of their work is shown in Table 1.

The following excerpts from Kunce and Anderson (1976) outline how such a descriptor base can be utilized in understanding and interpreting, either positively or negatively, elevated MMPI scale scores.

> The Depression (D) scale in the normal personality appears to reflect an evaluative behavioral orientation, i.e., a penchant for sorting our what is right and wrong, what is good and bad. Relative adaptive behaviors are modest, deliberate, intuitive, contemplative, and objective. These same attitudes, when augmented by stress, typically result in a person's becoming overly critical and self-dissatisfied. When these attitudes turn inward, the behavior is manifested by painstaking guilt over actual deeds, increased worry and anxiety about anticipated events, and/or by excessive and prolonged depression over misfortunes.
>
> The readiness to assert oneself and to express one's physical energy and drive appear to be the adaptive counterparts of the dimension measured by the MMPI Psychopathic (Pd) scale. Relative descriptors are enterprising, assertive, frank, and adventurous. Individuals with this attribute adjust rapidly to new situations and show initiative and drive. Under frustration the assertiveness can transform readily to hostile aggression and culminate in exaggerated and maladaptive social difficulties.
>
> A conception of schizophrenia as synonymous with withdrawal from reality obscures the adaptive counterpart behaviors measured by the Schizophrenia (Sc) scale. The ability to think divergently

TABLE 1
MMPI Counterpart Behaviours

Scale	Underlying Dimension	Counterpart Behaviors	
		Positive	Negative
Hypochondriasis (Hs)	conservation	conscientious, careful, considerate, sincere	dependent, irritable complaining, bodily preoccupations
Depression (D)	evaluation	deliberate, objective contemplative, realistic	critical, anxious, depressed, pessimistic
Hysteria (Hy)	expression	empathetic, responsive, sensitive, optimistic	denial, psychosomatic reactions, suggestible, overreactive
Psychopathic Deviate (Pd)	assertion	energetic, enterprising, venturesome, social	hostile, manipulative, impulsive, antisocial
Masculinity/ Femininity (Mf)	role flexibility	colorful, dilettante, interesting	self-recrimination, sex-role deviancy, identity confusion, unconventional
Paranoia (Pa)	inquiring	investigative, curious, questioning, discriminatory	grandiose, hypersensitive, suspicious, distrustful
Psychasthenia (Pt)	organization	methodical, systematic, convergent thinker, organized	rigid, compulsive, obsessive, ritualistic
Schizophrenia (Sc)	imagination	spontaneous, creative, imaginative, divergent thinker	bizzare, irrational, confused, idiosyncratic
Mania (Ma)	zest	enthusiastic, eager, wholehearted, exuberant	hyperactive, ineffectual, disorganized, agitated
Social Introversion (Si)	autonomy	independent, self-reliant, free lance	reclusive, asocial, alienated

Source: J.T. Kunce and W.P. Anderson, "Normalizing the MMPI," Journal of Clinical Psychology, 1976, 32, 776 - 780.

> and act creatively is a distinctly unique asset. Free, spontaneous, avant-garde, and imaginative are relevant descriptors. The ability to detach oneself from "what is" and to imagine as to "what could be" becomes, however, a liability when carried to an extreme. Preoccupation with one's own fantasies culminates in distinctly nonfunctional, bizzare, and idiosyncratic behavior rather than creative, socially contributing behavior.
>
> (Kunce & Anderson, 1976, p.p. 777-778)

Kunce (1979) undertook to explore the application of his and Anderson's sets of descriptors. His subjects consisted of six case files described as follows:

> Each person was experiencing considerable situational distress at the time of MMPI administration, but none required psychiatric help and three managed using their own personal and social resources. All were caucasian and had middle-class backgrounds, but varied considerably in age, educational level and intelligence. (Kunce, 1979, p. 309)

From the results of these case explorations Kunce (1979) reports that each of the subjects had an adaptive behavioral repertoire adequately predicted by his and Anderson's descriptors. Moreover, the traditional psychopathological interpretive stance would have missed identifying these adaptive features and would have provided misleading assessments. Kunce concludes from this exploration ". . . that MMPI scores can be used with a wide range of people to identify adaptive personality resources in addition to maladaptive behaviors . . ." (Kunce, 1979, p.326)

The only published follow-up study attempting to address Kunce and Anderson's (1976) concept is one by Graham and McCord (1985). These

authors obtained MMPI's from 101 male and 101 female college subjects, who denied past or current treatment for psychological problems. All subjects were paired on the basis of knowledge of the other's personality and were requested to complete a form describing their relationship. Subjects were then requested to complete two forms of the Adjective Checklist, one describing themselves, the other describing their partner. Point-biseral correlation coefficients were calculated. Results revealed the majority of correlations were between elevated clinical scale scores and negative personality characteristics as defined by the Adjective Checklist.

A flaw in the Graham and McCord study is their use of the Adjective Checklist as the descriptor base. The Kunce and Anderson (1976) contention is premised on the supposition that each MMPI clinical scale measures an underlying dimension of personality, which is manifested either positively or negatively depending on level or degree of distress. Their attenuated descriptor base was carefully selected to reflect this underlying dimension for each scale. In order to test the contention adequately, Graham and McCord should have utilized the Kunce and Anderson descriptor base and subjects who were experiencing a range of distress in their current life situation.

Moreover, while valuing the work of Kunce and Anderson as a critical step toward addressing the negative nature of the MMPI descriptor base, the writer wishes to note certain methodological weaknesses in the

research conducted by Kunce (1979). The first concerns the author's failure to measure objectively the proposed adjectives. Kunce (1979) reports his conclusion is based on discussions with friends of the subjects and his own perceptions of the subjects' personalities. It does not appear that he made any attempts toward a systematic evaluation of the applicability of the descriptors for his subject group. The second methodological weakness is that Kunce does not report any statistical outcomes used to ascertain the significance of his findings. Finally, Kunce's sample consisted of subjects who were undergoing situational stress at the time of MMPI administration. He did not attempt to research the applicability of these descriptors with either a normal-range sample (i.e. control group, experiencing no major life stresses at the time of MMPI administration), or with a more severely disturbed sample.

Statement of the Problem

The MMPI has come to be one of the most widely used objective personality tests for both clinical and nonclinical groups - a trend which does not appear will abate in the forseeable future. To date a significant amount of research literature has accumulated which strongly suggests the inherently negative nature of the MMPI is inadequate and misleading when used with 'normal-range' groups. In addition, and of

equal importance, is that psychiatrically disabled and/or emotionally disturbed groups continue to be stigmatized and devalued both in their role as citizens and clients. To date, it does not appear there has been research to address this negative orientation of the MMPI with clinical groups.

In an attempt to offset this negative focus, the problem that this study addresses is whether the MMPI descriptor repertoire can be broadened in the positive direction to include both adaptive and maladaptive descriptors for elevated MMPI scores for both psychiatric and non-psychiatric groups. Using those descriptors identified by Kunce and Anderson (1976) the current study will explore this potential with a range of groups. The non-psychiatric representation will include subjects drawn from a "normal" sample, who profess to have no past or current psychiatric involvement. In addition, due to the exploratory nature of this research, attempts will be made to cover a broad range of persons experiencing psychiatric problems. Therefore, rather than limiting the subject selection to specific diagnostic categories, selection will be based on the two broad groupings of acute and chronic disorder. In this way it is anticipated the study will address better both the range of diagnostic categories included in the MMPI and also better reflect the diversity of individuals who experience psychiatric disorders in general.

Research Considerations

The methodology previously used in this type of investigation included the use of raters (eg., Hovey, 1953; Kunce, 1979). Accordingly in this study, systematic use of raters is employed as a means to rate the application of Kunce and Anderson's adjectives.

Due to the exploratory nature of this study, and the lack of previous reasearch data addressing Kunce and Anderson's descriptors, the initial inquiry of this study will be posed in the form of the following questions:

(1) Do designated raters consider that the Kunce and Anderson (1976) MMPI descriptors reflect both adaptive and maladaptive behavioural styles for one or more of those MMPI scales which are elevated by normal group subjects?

(2) Do designated raters consider that the Kunce and Anderson (1976) MMPI descriptors reflect both adaptive and maladaptive behavioural styles for one or more of those MMPI scales which are elevated by psychiatric group subjects?

Should these questions be responded to in the affirmative, the following hypotheses, stated in null form, can be tested:

Ho1 No differences exist among the three groups with respect to raters' endorsement of the positive adjectives.

Ho2 No differences exist among the three groups with respect to raters' endorsement of the negative adjectives.

CHAPTER III

METHODOLOGY

Research participants consisted of two broad groups: subjects and raters. Subjects comprised those persons who consented to participate in the research and consequently were administered the MMPI. Raters comprised those persons who consented to participate in the research and consequently rated a subject using the MMPI Adjective Rating Scale Index. (See page 33 for a description of this instrument.)

SUBJECTS

Normal group subjects

Normal group subjects (N=20) were drawn from three classes of spring and summer students enrolled in the B.Ed. program at the University of Calgary. Final subject selection consisted of 13 females and 7 males with a mean age of 25 years. All subjects who participated stated they had no previous or current psychological problems which required treatment, and all subjects produced valid MMPI profiles in addition to having a T-score greater than or equal to 65 on one or more of the MMPI clinical scales.

Criteria for each of the two clinical groups (i.e. acute and chronic) was arrived at in consultation with a local psychiatrist

involved in the diagnosis and treatment of acute and chronic mental illness, and through extrapolation from the DSM III which frequently designates acute disorder as being less than six months in duration, and chronic disorder as long-standing illnesses of at least two years duration (DSM III, 1980). For purposes of clear distinction between the two psychiatric groupings included in this study, these two polarized time periods will be used as one of four criteria in the selection of acute and chronic subjects.

Acute group subjects

Acute group subjects (N=20) were drawn from two pyschiatric inpatient units at the Holy Cross Hospital, Calgary. Final subject selection consisted of 17 females and 3 males with a mean age of 38.9 years. All 'acute' subjects who participated:

- were experiencing psychological problems which necessitated their current admission to hospital.
- had experienced the problem for no greater than six months prior to this admission.
- had been relatively psychologically stable for two years prior to the onset of the problem(s).
- had produced a valid MMPI profile in addition to having a T-score greater than or equal to 65 on one or more of the MMPI clinical

scales.

Chronic group subjects

Chronic group subjects (N=20) were drawn from Calgary Association of Self Help, a local agency which provides community based services for chronically mentally ill persons. Final subject selection consisted of 18 males and 2 females with a mean age of 34.7 years. All 'chronic' subjects who participated:

- had a diagnosed mental illness for which they had been receiving treatment for greater than two years.
- had few, if any, meaningful social contacts; had sporadic work histories and disrupted family lives.
- had been involved in various rehabilitation programs since the onset of their illness (i.e. residential, occupational or vocational programs).
- had produced a valid MMPI profile in addition to having a T-score greater than or equal to 65 on one or more of the MMPI clinical scales.

(See Table 2 for a summary of age and gender information on each subject group).

TABLE 2

Summary of Gender and Age Information for Normal, Acute and Chronic Subjects

		Normal		Acute		Chronic	
		Sex	Age	Sex	Age	Sex	Age
Subjects	1	F	20	F	44	M	31
	2	F	26	F	43	M	32
	3	M	31	F	33	M	42
	4	M	38	F	54	M	33
	5	F	22	M	47	M	26
	6	F	24	F	50	M	54
	7	F	24	M	18	M	26
	8	F	22	F	39	F	31
	9	M	23	F	37	M	47
	10	M	23	F	31	M	46
	11	F	29	F	25	M	28
	12	F	24	F	41	M	26
	13	F	25	F	45	M	22
	14	M	21	F	27	M	25
	15	F	32	F	64	M	30
	16	M	23	F	39	F	40
	17	F	23	F	41	M	35
	18	F	24	F	27	M	29
	19	M	24	M	50	M	55
	20	F	22	F	22	M	35
MEAN AGE		25.00		38.85		34.65	
SD		4.35		11.60		9.64	
TOTAL (F)		13		17		2	
(M)		7		3		18	

RATERS

For purposes of this study attempts were made to approximate the approach of Kunce (1979) in the utilization of raters. Whereas if would have been ideal to have a one-to-one ratio of raters to subjects, the small staffing components of the agencies consenting to participate, and the requirement that raters have sufficient knowledge of the subject before providing a rating, meant that this ratio was not attainable. Therefore the number of raters participating totaled 20, 13 and 14 for the normal, acute and chronic groups respectively. No rater rated more than two subjects within the acute group, and no more than four subjects within the chronic group. For the normal group, raters consisted of friends and family of individual subjects, as no one homogeneous group existed who could rate this group. For the two clinical groups, the agency mandates for service provision are different. The Holy Cross Hospital provides professional therapeutic services to psychiatrically disabled individuals, thereby requiring trained therapists as staff. The Self Help agency is mandated to provide nonclinical, supportive services and therefore employs paraprofessionals to fulfill its mandate. As a result raters for the three groups vary with respect to training backgrounds. Additional information on the three rater groups is listed as follows.

Normal group raters

Normal group raters (N=20) consisted of 17 friends, two spouses and one fiancee of the normal group subjects. All were reported by the subject as capable of rating him/her using the MMPI Adjective Rating Scale Index. All raters, following completion of the Index, reported they were sufficiently knowledgeable of the subject they had rated to feel they had provided accurate ratings of the characteristics identified in the Index.

Acute group raters

Acute group raters (N=13) consisted of the subjects' prime therapists on the inpatient unit at the Holy Cross Hospital, who had been engaged in a therapeutic capacity with the subject they rated for a minimum of ten days. All raters reviewed the MMPI Adjective Rating Scale Index prior to completing it and reported they felt sufficiently knowledgeable of the subject to be able to provide an accurate rating of the characteristics listed in the Index.

Chronic group raters

Chronic group raters (N=14) consisted of employees of Calgary

Association of Self Help. All are technically considered paraprofessionals (i.e. none had professional affiliations or memberships with recognized groups in the Social Services industry, but all had at least two years' experience working with the chronically mentally ill.) Each of the raters was designated as a subject's 'advisor' through the Association (the person whom the subject interacted with for purposes of support, advise, referral information, etc.). Each rater had a minimum of twice weekly contact with the subject for a two month period, and each professed to have sufficient knowledge of the subject to provide ratings of the characteristics identified on the MMPI Adjective Rating Scale Index.

MATERIALS

Minnesota Multiphasic Personality Inventory (MMPI)

The MMPI is an objective, standardized personality test instrument consisting of 550 self-reference statements. Sixteen of these are repeated bringing the total test format to 566 statements, to which the respondent replies true, false or cannot say. Scoring of the test is objective and can be done either manually or by computer scoring. Either procedure yields a test profile or psychogram composed of four validity scales: L(Lie), F(Infrequency), ?(cannot say), K(Faking Good) and ten

clinical scales: 1,(Hs: Hypochondriasis), 2,(D: Depression), 3,(Hy: Hysteria), 4,(Pd: Psychopathic Deviate), 5,(M/f: Masculinity-femininity), 6,(Pa: Paranoia), 7,(Pt: Psychasthemia), 8,(Sc: Schizophrenia), 9,(Ha: Hypomania) and 10,(Si: Social Introversion).

Five of the clinical scales are routinely 'K-corrected' (i.e. Hs; Pd; Pt; Sc; and Ma). This procedure is intended to take into account defensive test-taking attitudes of respondents and to elevate scores in accordance with this. Graham (1977) notes that the K scale has been found to be much more complex than originally intended, and fluctuates significantly depending on socioeconomic status of the respondent. He points out, however, that while there is little empirical evidence supporting its routine use, virtually all information on profile interpretation is based on K-corrected scores. Therefore he recommends that "K-correction be used routinely unless separate norms and interpretive data are available for uncorrected scores." (Graham, 1977, p.23) Given that no such norms are as yet available, and that the original Kunce (1979) study indicates the use of K-corrections for the MMPI profiles involved, the writer similarly chose to use K-correction in scoring of the MMPI test protocols used in this research.

Actual MMPI development began when Hathaway and McKinley collected a large group of items from psychological and psychiatric case histories, textbooks and earlier published scales of personal and social attitudes; identified approximately 1,000 items and reduced these to 504 relatively

independent items based upon their professional judgement. They then began the standardization process by selecting two criterion groups: 'Minnesota normals' and 'Minnesota psychiatric patients'. The normal group consisted of relatives, friends and visitors of patients at the University of Minnesota hospitals. Graham (1977) reports this group was augmented by several other groups of 'normals', including a group of recent high school graduates, a group of Work Progress Administration workers, and some medical patients at the University of Minnesota Hospitals.

The clinical group included patients representing all of the major psychiatric diagnostic categories being utilized clinically at the time of the test construction; these included hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychathenia, schizophrenia and hypomania.

Each person was asked to respond to the original 504 items.. Separate scales were derived by empirically determining those items that differentiated between the group of normals and the clinical group. The scales derived were cross validated on a new group of normals and new members of the clinical group. Those items that did not differentiate between the two groups were dropped.

At a later date the masculinity-femininity (M/f) scale was developed and included among the clinical scales as a measure of masculine-feminine interest patterns. However, because of the equivocal meaning of this

scale and its relative inutility as a clinical measure it has been excluded from this study (see Wong, 1984 for a discussion on the short-comings of the M/f scale).

Completed MMPI profile sheets provide the clinician with a raw score as well as a standard score (T-score) for each of the MMPI scales. T-scores have a mean of 50 and a standard deviation of 10, and provide the basis for comparison between the respondent and the group of Minnesota normals on whom the test was standardized. On the profile, the lines at T-scores of 30 and 70 are darker to indicate the low probability - approximately .025 (Greene, 1980) - of exceeding these limits in either direction.

In general, there is little interpretation data available for low scoring individuals. Greene (1980) attributes this neglect to the traditional assumption that, whereas high scores signified the presence of psychopathology, low scores represent the opposite, i.e. absence of traits and/or behaviors that are present for high scores, thereby implicitly assuming psychological adjustment. There continues to be some debate surrounding this assumption (eg. Listiak and Stone, 1971), but as yet no empirical evidence exists to confirm or disconfirm the meaning of MMPI low scores.

Graham (1977) notes that while it is generally accepted that high scores do signify the presence of some form of psychopathology depending on the scale or scales elevated, the actual definition of a high score

has varied considerably throughout the literature: "Some writers consider a T-score above 70 as a high score. Others have defined high scores in terms of the upper quartile in a distribution. Still others have presented descriptors for several T-score levels. Another approach has been to identify the highest scale in the profile (high point) irrespective of its T-score value. A careful examination of the literature suggests that basically the same general picture of high scoring individuals emerges regardless of which of the above definitions is utilized." (Graham, 1977, p.33).

A second term found throughout the MMPI literature is 'moderate elevations'. Again the definition has varied considerably, but operationally is a T-score of between 60-70 (Greene, 1980), or a T-score between 65-75 (Graham, 1977). Both these definitions can fluctuate depending on the author and/or which scale is being addressed. The original Kunce and Anderson (1976) formulation of counterpart descriptors was intended to address persons from a 'normal' group who obtained moderate elevations (defined in their later 1984 publication as a T-score between 60-70).

Based on Graham's statement that largely the same picture emerges for high scoring persons, and given that the aim of the present study is to expand on the work of Kunce and Anderson (1976), it was decided to use the more rigorous definition of elevated scores and consider only those scores greater than or equal to a T-score of 65 as an acceptable clinical

scale elevation.

Levitt and Duckworth (1984) note that measuring the validity and reliability of the MMPI is complicated by the fact the inventory is comprised of many different scales, each with it's own reliability and validity. Nevertheless they note the inventory as a whole has been found to be reasonably effective for it's original task of diagnosing problem behavior and emotions. The validity further varies with the population examined. The test has been subject to thousands of studies (Taulbee, et al., 1977; Buros, 1978) and, not surprisingly, seems to work best with diagnosing those who are severely disturbed and demographically most like the original Minnesota normative sample (i.e. white and middle-class).

Reliability studies show that there is considerable evidence for the test's reliability, but again, depending on the group measured and/or the scale studied. Test-retest reliabilities reported range from the .50's to the low .90's. Certain scales reflecting mood, such as scale 2, are quite variable over time, whereas other scales supposedly measuring more enduring personality characteristics, such as scale 4, have much higher test-retest reliability. Levitt and Duckworth (1984) note that some split-half reliabilities are especially low, which is not surprising in view of the heterogeneity of some of the scales.

MMPI Adjective Rating Scale Index (RSI)

This scale was developed by the writer and consists of a Likert-type measuring instrument (ranging from strongly agree to strongly disagree), comprised of 54 of the 77 adjectives identified by Kunce and Anderson (1976). (see Appendix A) It consists of nine sets of adjectives corresponding to each of the clinical MMPI scales included in this study. Each set is comprised of three positive and three negative adjectives selected from those proposed by Kunce and Anderson. Adjectives were selected on the basis of those felt to be most easily understandable for potential raters, and randomly assigned within sets to avoid as much as possible positive or negative response sets by the prospective raters.

The writer then pre-tested the rating scales by requesting five different persons to use the entire rating scale describing someone they knew. As closely as possible these five people approximated the background and training of probable raters in the actual research:

- Two raters were 'lay-people' who had no involvement in a helping profession nor clinical or related training (both were elementary school teachers). They were asked to think of a friend who, to the best of their knowledge had no previous or current involvement in treatment for emotional difficulties, and to rate this person using the RSI.
- Two persons were 'paraprofessionals' (a B.A. in sociology and psychology respectively) who were involved in a supportive (vs. clinical)

capacity with someone experiencing emotional difficulties. They were requested to complete the RSI with this person in mind.

- The remaining individual was a professionally trained clinician (MSW) in private practice. She was requested to complete the RSI with a specific client in mind.

Each of these raters advised the researcher as to the following:

a) whether each of the adjectives was understandable.

b) whether the rating scale range (i.e. strongly agree to strongly disagree) was appropriate and adequate.

c) general remarks and comments.

Each of the lay-persons and the paraprofessionals expressed confusion over the term 'convergent thinker' (positive category; Pt scale from the original Kunce and Anderson adjectives). The alternative adjective 'organized' was suggested and endorsed as a replacement. Originally the writer had hesitated in including this adjective as it appeared somewhat redundant in comparison to 'methodical' and 'systematic'. However on the basis of the pilot study, it was felt inclusion would be the 'lesser of two evils'. All other comments were positive as to comprehension and appropriateness of the rating range offered.

The RSI has not been tested for reliability or validity. This lack of reliability and validity data is considered a limitation of the study. However, no other appropriate instrument exists with which to test the application of Kunce and Anderson's descriptors. Therefore,

the writer devised a scale in order to establish some minimum face validity to the adjectives proposed by Kunce & Anderson (1976).

PROCEDURE

The three agencies from which the subjects and raters were drawn were contacted for consent to conduct research. Criteria for consent involved three broad requirements:

1) Subjects and raters provided informed consent prior to participating in the research. (see Appendix B)

2) Subjects and raters were guaranteed anonymity and voluntary participation.

3) Research would not interfere with the normal day-to-day operation of the agencies involved.

Actual data collection occurred between May to September, 1985.

Normal group data collection

The writer approached two spring classes and one summer class of B.Ed. students at the University of Calgary.

During each of these times prospective subjects were provided information regarding the research; copies of both the MMPI (Form R) and MMPI Adjective Rating Scale Index were distributed for perusal, and

returned to the writer; criteria for eligibility was outlined as defined in the description of subjects.

In one instance, those students consenting to participate were administered the MMPI during actual class time. Upon completion each subject was requested to provide the name and phone number of a prospective rater whom the subject felt would be able to complete accurately the MMPI Adjective Rating Scale Index. At this time it was also explained to each subject that, depending on his/her MMPI profile, this rater may or may not be requested to participate. For the two remaining classes, the writer was granted permission only to request subject participation. The same procedure was followed as outlined above, with the exception that, for persons who consented to participate, individual times were established outside of class time for test administration and obtaining the name and phone number of a potential rater.

Following MMPI administration, test protocols were scored manually using the standard MMPI scoring keys. If the subject obtained a T-score of > 65 on one or more of the clinical scales (excluding the M/f scale) and a valid MMPI profile, his/her designated rater was contacted by phone.

For the normal group, a total of 36 MMPI's were administrated. Of these, 13 female and 3 male subjects did not obtain a T-score of ≥ 65 on any of the appropriate MMPI clinical scales and so were excluded from further participation in the research.

For those twenty subjects who obtained appropriate profiles, individual raters were contacted by phone within one week of MMPI administration. Of the twenty raters, nineteen had been informed of possible contact by the subject. One who had not been informed requested time to contact the subject for permission. Once done, he willingly consented to participation.

All raters were provided the same information as the subjects with respect to the purpose of the research. In addition, each rater was reassured that the results of his/her rating would be held in strict confidence, and in particular that the subject had previously agreed these results would not be revealed to him/her. Raters were provided basic information on the RSI. The writer then read out the set or sets of adjectives corresponding to the scale which the subject elevated, and asked if they strongly agreed, agreed, were neutral, disagreed or strongly disagreed that this adjective described the subject in question. Rater's responses were recorded at this time for later analysis.

At the completion of the rating, raters were asked to identify the nature of their relationship to the subject (eg: friend, family member, etc.) and if they felt sufficiently knowledgeable of the subject to have provided the rating. Of the twenty raters, one reported feeling she was not an appropriate rater (a spouse of the subject, explaining she was considering divorce). Both this subject and rater data were excluded from the research. An additional subject profile and rater was obtained,

bringing the total MMPI administration to thirty-seven and total number of raters contacted to twenty-one.

Clinical group data collection

For both clinical groups (i.e. acute and chronic), contact persons were established in each of the agencies, one through Calgary Association of Self Help and two through the Holy Cross Hospital - one each for the two inpatient units from which both subjects and raters were drawn. The writer met individually with each contact person to explain the purpose of the research and the criteria for both subject and rater selection. Each contact person was responsible for providing names of appropriate, potential subjects and ensuring that an appropriate rater would be available should the subject consent to participate and produce an appropriate MMPI profile.

The writer arranged for weekly communication with the contact person to obtain potential subject names. Once obtained, the writer met with each individual, again explained the purpose as outlined previously and administered the MMPI upon consent.

For the acute group, a total of 23 MMPI's were administered. Of these, 2 females produced invalid profiles (i.e. F = T of 90 and 92 respectively) and one female, of German descent, experienced great difficulty with the wording. All were excluded from the research.

For the chronic group, a total of 28 MMPI profiles were administered. Of these, three males and two females were unable to complete the test. Two males and one female produced invalid profiles (i.e. two random response; one F = T-score of 83) and hence were also excluded from the research.

Once appropriate profiles were obtained, each designated rater was provided a copy of the MMPI Adjective Rating Scale Index and requested to rate the subject using the set or sets of adjectives which correspond to the scale(s) which the subject had elevated. Again all subjects were rated within one week of MMPI administration. No raters refused to participate, nor felt they were unable to rate the subject.

For the normal group, a number of students chose not to participate in the research. Characteristics of these persons are not available. Similarly, for the acute group, three of the persons chose not to participate and for the chronic group, in addition to those who withdrew (i.e. did not complete the test), five persons refused to participate. No effort was made to collect data on these individuals, respecting their right to refuse any form of participation in the research.

CHAPTER IV

RESULTS

The major problem explored in the present study is whether the adjectives identified by Kunce and Anderson (1976) would be endorsed by raters in describing subjects who obtained clinical scale elevations (i.e., $T \geq 65$) on one or more of the MMPI scales.

The purpose of undertaking this exploratory research was threefold:

1) To explore whether the MMPI descriptor base can be broadened to assess both positive and negative behavioral attributes within a 'normal' group.

2) To explore whether the MMPI descriptor base can be broadened to assess both positive and negative behavioral attributes within two clinical groups, i.e., acute and chronic.

3) Given that the above two questions are answered in the affirmative, to determine whether endorsement rates of the Kunce and Anderson (1976) descriptors are significantly different for all three groups.

TREATMENT OF THE DATA

The raw data collected for purposes of this study consisted of twenty MMPI protocols for each group of subjects (total of sixty) and a corresponding number of MMPI Adjective Rating Scale Indexes completed by

raters.

Upon completion of each subjects' MMPI, protocols were scored manually using the standard MMPI scoring keys developed for form-R use. Only those T scores $\geq$ 65 were included for purposes of this research.

The mean scale score for each subject was calculated, followed by a calculation of the 'mean of the mean' for each group in order to obtain overall comparison figures.

Correlational analysis was conducted comparing the relationship between subjects' age and overall mean profile scores. No analysis was done with respect to gender and scores, as the distribution of males and females within groups is highly skewed. (see Table 2)

In order to analyze the raters' data, certain of the categories were collapsed so as to ensure a sufficient number of responses within each category:

- both agree categories (i.e. strongly agree and agree) were collapsed into one to form the 'agree' category.
- both disagree categories (i.e. strongly disagree and disagree) were collapsed into one to form the 'disagree' category.
- the neutral category was left separate.

The number of raters' responses falling into each of these categories were separately added for both positive and negative adjective endorsements, followed by a calculation of the percentage of endorsements in any one category (agree, neutral or disagree). For example, in

analyzing raters' endorsement of positive adjectives for the normal group (Table 5A), the data shows that of the twenty normal group subjects, two obtained elevations of $\geq$ 65 on Scale 1 of the MMPI. Therefore two raters were requested to complete the corresponding category on the RSI. For the first adjective of this scale, i.e., conscientious, the figures listed in Table 5A were reached as follows:

- one adjective x two raters = two endorsements
- agree = $\frac{\text{two endorsements}}{\text{two raters}}$ = 100%
- neutral = $\frac{\text{zero endorsements}}{\text{two raters}}$ = 0%
- disagree = $\frac{\text{zero endorsements}}{\text{two raters}}$ = 0%

Using this formula, six tables were developed in order to show separately raters' endorsements of both positive and negative adjectives for all three groups.

Edgington (1980) notes that parametric statistical tables are applicable only to random samples. The requirements for a random sample are basically that ". . . the sampling procedure used gives all possible samples of n individuals within a specified population the same probability of being drawn." (p.2) Violations of this procedure include using all available subjects without employing a sampling procedure of any kind - i.e., using a 'first come; first serve' procedure for eligible subjects, which was the method of selection in the present study. Given this procedure, the assumption of a normal distribution cannot reasonably

be made. However, Edgington (1980) also states that " when questions of violations in parametric assumptions arises, determination of significance by means of a randomization test is a ready answer." (p.57)

Randomization tests work on the basis of multiple permutations (i.e. divisions) of the data in question. A test statistic (eg. t) is first calculated using the standard formula for independent t tests. However, rather than determining significance of t by using standard t tables, multiple t calculations are conducted by randomly assigning outcomes between groups. The resulting number of t's greater than or equal to the original t value are divided by the number of divisions that were calculated. This figure then indicates the actual probability of significant differences. Statistical inferences made from randomization tests, in the absence of random sampling, can be applied only to subjects actually used in the experiment and are not to be considered generalizable to other subjects or groups not included in the research.

For all randomization tests conducted in the present study, the number of permutations requested equals 1,000. The criteria of .05 is designated as the acceptable minimal level for significance.

The hypotheses stated in this research were tested by means of randomization one-way ANOVA and t tests. In order to calculate the means necessary for testing, all raters' responses to adjectives were assigned numerical weights ranging from one to five for the positive adjectives and reverse scored for the negative adjectives (outlined as

follows):

Positive	1	2	3	4	5
	SA	A	N	D	SD
Negative	5	4	3	2	1

All coded data was entered into the computer and the SPSS program was used to calculate raters' mean response to each adjective (in those instances where a rater's responses did not total 54, the total number of adjectives, the difference was entered as missing data). The means obtained were then separated for the positive adjectives (N = 27) and for the negative adjectives (N = 27) for all groups. These scores were then used to compute the ANOVA and t test probabilities.

Finally, some post hoc analyses were undertaken. The purpose of this undertaking was to ascertain whether, as subjects' scale score elevations increased for any group, endorsement rates for positive adjectives correspondingly decreased and for negative adjectives, correspondingly increased. Subjects' MMPI scale scores were divided into five point ranges up to and including a T range of 120 - 124. The percentages of raters' endorsement of positive and negative adjectives within each range was calculated. This percentage figure, along with the mean range figure (eg. the mean of the range 120 - 124 is 122) was used to conduct a correlational analysis utilizing the designated randomization test program.

FINDINGS

Tables 3, A, B and C show the results of the individual MMPI scores obtained by each subject. For the normal group, T-scores range from 65 to 83, the overall group average being 70.40. For the acute group the T-scores range from 65 to 115, the group average totaling 81.52. Chronic group T-scores range from 65 to 120, with a group average of 78.87.

Table 4 shows the results of the correlational analysis conducted between subjects' age and scale score averages. For both the normal group ($r = 0.134$; $p = 0.568$) and the acute group ($r = 0.408$; $p = 0.094$) no significant relationship is indicated between these two variables.

For the chronic group however, a significant negative relationship is indicated ($r = -0.548$; $p = 0.012$). A review of the actual figures used in this calculation reveals that as subjects' age increases, scale score elevations correspondingly decrease.

In order to respond to the guiding questions of this research, descriptive statistics were undertaken which calculated the overall percentage rates of adjective endorsement by raters within each group (the actual procedure and formula employed were outlined earlier under 'Treatment of the Data'). The guiding questions being responded to were stated in Chapter II as follows:

1) Do designated raters consider that the Kunce and Anderson (1976) MMPI descriptors reflect both adaptive and maladaptive behavioral styles

TABLE 3A

MMPI CLINICAL SCALE SCORES FOR NORMAL GROUP SUBJECTS (T ≥ 65)

Scale	Hs	D	Hy	Pd	Pa	Pt	Sc	Ma	Si	Mean Elevation Score
Subjects 1	71	68	74	65	66	78				70.33
2		73								73.00
3								75		75.00
4		65		66						65.50
5								65		65.00
6								70		70.00
7					67			83		75.00
8				71						71.00
9					65	71	67		74	69.25
10				65				75		70.00
11					67			70		68.50
12								65		65.00
13								75		75.00
14					67		73			70.00
15							80	78		79.00
16		76								76.00
17				69				68		68.50
18		65				65			67	65.67
19	65		67	69		69	69			67.80
20		71		70			66			69.00
Mean Group Score										70.40

TABLE 3B

MMPI CLINICAL SCALE SCORES FOR
ACUTE GROUP SUBJECTS (T ≥ 65)

Scale	Hs	D	Hy	Pd	Pa	Pt	Sc	Ma	Si	Mean Elevation Score
Subjects 1	97	86	77	94	86	110	115	83	75	91.44
2	75	85	85							81.67
3		73	84	79	85	88	86	68		80.43
4	80	85	79			72	75		82	78.83
5	87	105	87	100	83	104	103		77	93.25
6	91	94	93	71	94	96	97	70		88.25
7					65					65.00
8	66	73		74	82	66	94		71	75.14
9	76	96	79	86	85	81	101		75	84.88
10					67					67.00
11					70					70.00
12				76	79			86		80.33
13	76	82	82	69	88		66	68		75.86
14	67		73	97	82	98	110	88		87.86
15	80	71	77	76		68	75			74.50
16	65			76						70.50
17						77			65	71.00
18				69	73	66	69	75		70.40
19	66	69		86	70	65				71.20
20				65						65.00
Mean Group Score										81.52

TABLE 3C

MMPI CLINICAL SCALE SCORES FOR
CHRONIC GROUP SUBJECTS (T ≥ 65)

Scale	Hs	D	Hy	Pd	Pa	Pt	Sc	Ma	Si	Mean Elevation Score
Subjects 1	76	92	69	81	96	89	120	70	79	85.78
2	72	72	82	95	100	90	113	75		87.38
3								66		66.00
4		75		84	67	79	78			76.60
5	72	82	72	85	94	89	120			87.71
6	72	80	69	74	70	69	81	86		75.13
7	75	87		81	79	77	107			84.33
8				71						71.00
9		76		90	82	69	80		66	77.17
10	70	82	65	71		71	76			72.50
11	67	77	65	94	79	82	95	76		79.38
12	70	89	65	71	82	83	109			81.29
13	75	73	77	91	88	87	107	82		85.00
14				69			71	81		73.67
15	85	108	69	91	100	98	120		69	92.50
16	88	87	80	71			77			80.60
17				68						68.00
18		69		81	88	76	94	83	69	80.00
19		66								66.00
20	80	87	85	79	83	84	112	88		87.25
Mean Group Score										78.87

TABLE 4

CORRELATIONAL ANALYSIS BETWEEN SUBJECTS' AGE AND MEAN MMPI SCALE SCORE

	Normal Group (N = 20)	Acute Group (N = 20)	Chronic Group (N = 20)
correlation coefficient	0.134	0.408	- 0.548
two tailed probability	0.568	0.094	0.012

for one or more of those scales which are elevated by 'normal' group subjects?

2) Do designated raters consider that the Kunce & Anderson (1976) MMPI descriptors reflect both adaptive and maladaptive behavioral styles for one or more of those scales which are elevated by acute and/or chronic group subjects?

Tables 5 A, B and C contain the breakdown of the percentage of raters' endorsement of the positive adjectives for all groups. Tables 6 A, B and C contain a similar breakdown of responses to the negative adjectives for all groups and Table 7 provides a synopsis of overall percentage figures of raters' responses to both sets of adjectives for all groups.

Results from these descriptive statistics show 71.32 percent of the responses of the normal group raters indicate agreement that the positive adjectives used are descriptive of the subjects they rated, 18.60 percent of responses indicate a neutral stance and 10.08 percent of responses indicate disagreement that the positive adjectives used are descriptive of the normal group subjects. (see Table 5A)

For the acute group raters, the distribution of positive adjective endorsement across categories is more evenly distributed: 35.74 percent of raters' responses indicate agreement that the positive adjectives used are descriptive of the acute subject group; 33.68 percent of responses indicate a neutral stance and 30.58 percent of responses indicate

TABLE 5A

NORMAL GROUP RATERS' RESPONSES TO
POSITIVE ADJECTIVES FOR NORMAL GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1 Hypochondriasis	Conscientious	(N = 2)	100.00	0.00	0.00
	Careful		100.00	0.00	0.00
	Considerate		100.00	0.00	0.00
2 Depression	Objective	(N = 6)	50.00	50.00	0.00
	Deliberate		33.33	33.33	33.34
	Realistic		66.66	16.67	16.67
3 Hysteria	Empathetic	(N = 2)	100.00	0.00	0.00
	Optimistic		50.00	50.00	0.00
	Sensitive		100.00	0.00	0.00
4 Psychopathic Deviate	Energetic	(N = 7)	85.71	14.29	0.00
	Social		85.71	14.29	0.00
	Enterprising		57.14	28.57	14.29
6 Paranoia	Investigative	(N = 5)	60.00	40.00	0.00
	Curious		100.00	0.00	0.00
	Questioning		60.00	40.00	0.00
7 Pychasthenia	Methodical	(N = 4)	25.00	25.00	50.00
	Organized		50.00	25.00	25.00
	Systematic		25.00	50.00	25.00
8 Schizophrenia	Creative	(N = 5)	100.00	0.00	0.00
	Spontaneous		80.00	0.00	20.00
	Imaginative		100.00	0.00	0.00
9 Hypomania	Enthusiastic	(N = 10)	90.00	10.00	0.00
	Exuberant		90.00	10.00	0.00
	Wholehearted		90.00	10.00	0.00
0 Social Introversion	Free-lance	(N = 2)	0.00	0.00	100.00
	Independent		0.00	0.00	100.00
	Self-reliant		0.00	100.00	0.00
Total Mean Percentage of Responses			71.32	18.60	10.08

TABLE 5B

ACUTE GROUP RATERS' RESPONSES TO
POSITIVE ADJECTIVES FOR ACUTE GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1 Hypochondriasis	Conscientious	(N = 12)	58.33	25.00	16.67
	Careful		66.67	25.00	8.33
	Considerate		50.00	41.67	8.33
2 Depression	Objective	(N = 11)	18.18	45.46	36.36
	Deliberate		45.46	54.54	0.00
	Realistic		27.27	27.27	45.46
3 Hysteria	Empathetic	(N = 10)	60.00	30.00	10.00
	Optimistic		20.00	30.00	50.00
	Sensitive		80.00	20.00	0.00
4 Psychopathic Deviate	Energetic	(N = 14)	21.43	42.86	35.71
	Social		42.86	21.43	35.71
	Enterprising		21.43	28.57	50.00
6 Paranoia	Investigative	(N = 14)	28.58	35.71	35.71
	Curious		42.86	42.86	14.28
	Questioning		85.72	7.14	7.14
7 Pychasthenia	Methodical	(N = 12)	33.33	25.00	41.67
	Organized		25.00	41.67	33.33
	Systematic		25.00	33.33	41.67
8 Schizophrenia	Creative	(N = 11)	18.18	63.64	18.18
	Spontaneous		9.09	18.18	72.73
	Imaginative		18.18	54.55	27.27
9 Hypomania	Enthusiastic	(N = 8)	25.00	12.50	62.50
	Exuberant		25.00	0.00	75.00
	Wholehearted		50.00	25.00	25.00
0 Social Introversion	Free-lance	(N = 5)	0.00	80.00	20.00
	Independent		0.00	40.00	60.00
	Self-reliant		0.00	80.00	20.00
Total Mean Percentage of Responses			35.74	33.68	30.58

TABLE 5C

CHRONIC GROUP RATERS' RESPONSES TO POSITIVE ADJECTIVES FOR CHRONIC GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1 Hypochondriasis	Conscientious	(N = 12)	30.00	20.00	50.00
	Careful		40.00	10.00	50.00
	Considerate		33.33	33.33	33.34
2 Depression	Objective	(N = 16)	6.25	18.75	75.00
	Deliberate		25.00	56.25	18.75
	Realistic		6.25	6.25	87.50
3 Hysteria	Empathetic	(N = 11)	36.36	18.18	45.46
	Optimistic		18.18	18.18	63.64
	Sensitive		63.64	9.09	27.27
4 Psychopathic Deviate	Energetic	(N = 18)	44.44	11.12	44.44
	Social		66.66	16.67	16.67
	Enterprising		22.22	22.22	55.56
6 Paranoia	Investigative	(N = 13)	15.39	7.69	76.92
	Curious		61.54	23.08	15.38
	Questioning		53.84	23.08	23.08
7 Pychasthenia	Methodical	(N = 14)	35.71	21.43	42.86
	Organized		35.71	21.43	42.86
	Systematic		35.71	28.58	35.71
8 Schizophrenia	Creative	(N = 16)	43.75	25.00	31.25
	Spontaneous		50.00	31.25	18.75
	Imaginative		43.75	37.50	18.75
9 Hypomania	Enthusiastic	(N = 9)	55.56	22.22	22.22
	Exuberant		45.45	22.22	33.33
	Wholehearted		33.33	44.45	22.22
0 Social Introversion	Free-lance	(N = 4)	75.00	0.00	25.00
	Independent		75.00	0.00	25.00
	Self-reliant		75.00	0.00	25.00
Total Mean Percentage of Responses			38.64	21.83	39.53

TABLE 6A

NORMAL GROUP RATERS' RESPONSES TO
NEGATIVE ADJECTIVES FOR NORMAL GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1	Dependent		50.00	0.00	50.00
Hypochondriasis	Irritable	(N = 2)	0.00	0.00	100.00
	Complaining		0.00	0.00	100.00
2	Critical		16.66	0.00	83.34
Depression	Anxious	(N = 6)	33.33	16.67	50.00
	Pessimistic		16.67	16.67	66.66
3	Over-reactive		0.00	0.00	100.00
Hysteria	Suggestable	(N = 2)	100.00	0.00	0.00
	Denying		0.00	0.00	100.00
4	Impulsive		42.86	0.00	57.14
Psychopathic	Hostile	(N = 7)	0.00	14.29	85.71
Deviate	Manipulative		14.29	28.57	57.14
6	Distrustful		0.00	20.00	80.00
Paranoia	Hypersensitive	(N = 5)	60.00	20.00	20.00
	Suspicious		20.00	0.00	80.00
7	Ritualistic		25.00	50.00	25.00
Pychasthenia	Rigid	(N = 4)	25.00	0.00	75.00
	Compulsive		25.00	25.00	50.00
8	Irrational		0.00	20.00	80.00
Schizophrenia	Confused	(N = 5)	0.00	20.00	80.00
	Bizzare		0.00	60.00	40.00
9	Disorganized		30.00	10.00	60.00
Hypomania	Agitated	(N = 10)	20.00	20.00	60.00
	Hyper		30.00	30.00	40.00
0	Asocial		0.00	50.00	50.00
Social	Reclusive	(N = 2)	0.00	50.00	50.00
Introversion	Alienated		0.00	50.00	50.00
Total Mean Percentage of Responses			20.15	18.61	61.24

TABLE 6B

ACUTE GROUP RATERS' RESPONSES TO
NEGATIVE ADJECTIVES FOR ACUTE GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1	Dependent		83.34	8.33	8.33
Hypochondriasis	Irritable	(N = 12)	41.67	50.00	8.33
	Complaining		50.00	8.33	41.67
2	Critical		36.36	18.18	45.46
Depression	Anxious	(N = 11)	81.82	9.09	9.09
	Pessimistic		63.64	9.09	27.27
3	Over-reactive		50.00	30.00	20.00
Hysteria	Suggestable	(N = 10)	70.00	20.00	10.00
	Denying		0.00	20.00	80.00
4	Impulsive		57.14	21.43	21.43
Psychopathic	Hostile	(N = 14)	42.86	14.28	42.86
Deviate	Manipulative		50.00	28.57	21.43
6	Distrustful		42.86	35.71	21.43
Paranoia	Hypersensitive	(N = 14)	57.14	42.86	0.00
	Suspicious		28.57	42.86	28.57
7	Ritualistic		8.33	50.00	41.67
Pychasthenia	Rigid	(N = 12)	41.67	16.66	41.67
	Compulsive		41.67	33.33	25.00
8	Irrational		18.18	27.27	54.55
Schizophrenia	Confused	(N = 11)	27.27	27.27	45.46
	Bizzare		0.00	9.09	90.91
9	Disorganized		25.00	37.50	37.50
Hypomania	Agitated	(N = 8)	37.50	12.50	50.00
	Hyper		12.50	37.50	50.00
0	Asocial		60.00	0.00	40.00
Social	Reclusive	(N = 5)	40.00	0.00	60.00
Introversion	Alienated		20.00	20.00	60.00
Total Mean Percentage of Responses			41.24	24.74	34.02

TABLE 6C

CHRONIC GROUP RATERS' RESPONSES TO
NEGATIVE ADJECTIVES FOR CHRONIC GROUP SUBJECTS

MMPI Scale	Adjective	N of Respondents	Agree (%)	Neutral (%)	Disagree (%)
1 Hypochondriasis	Dependent	(N = 12)	50.00	8.34	41.66
	Irritable		50.00	25.00	25.00
	Complaining		50.00	33.33	16.67
2 Depression	Critical	(N = 16)	68.75	18.75	12.50
	Anxious		75.00	18.75	6.25
	Pessimistic		68.75	18.75	12.50
3 Hysteria	Over-reactive	(N = 11)	81.82	0.00	18.18
	Suggestable		45.46	27.27	27.27
	Denying		27.27	9.09	63.64
4 Psychopathic Deviate	Impulsive	(N = 18)	61.11	22.22	16.67
	Hostile		27.78	16.67	55.55
	Manipulative		44.44	22.22	33.34
6 Paranoia	Distrustful	(N = 13)	38.46	38.46	23.08
	Hypersensitive		61.54	15.38	23.08
	Suspicious		46.15	38.46	15.39
7 Pychasthenia	Ritualistic	(N = 14)	28.57	28.57	42.86
	Rigid		50.00	28.57	21.43
	Compulsive		78.57	21.43	0.00
8 Schizophrenia	Irrational	(N = 16)	75.00	18.75	6.25
	Confused		81.25	6.25	12.50
	Bizzare		50.00	37.50	12.50
9 Hypomania	Disorganized	(N = 9)	66.67	11.11	22.22
	Agitated		88.89	11.11	0.00
	Hyper		44.44	55.56	0.00
0 Social Introversion	Asocial	(N = 4)	0.00	25.00	75.00
	Reclusive		25.00	25.00	50.00
	Alienated		25.00	25.00	50.00
Total Mean Percentage of Responses			55.16	22.12	22.72

TABLE 7

Synopsis of Percentages of Raters' Responses to Adjectives for all Groups

Positive Adjectives

Group	Agree	Neutral	Disagree
Normal	71.32%	18.60%	10.08%
Acute	35.74%	33.68%	30.58%
Chronic	38.64%	21.83%	39.53%

Negative Adjectives

Group	Agree	Neutral	Disagree
Normal	20.15%	18.61%	61.24%
Acute	41.24%	24.74%	34.02%
Chronic	55.16%	22.12%	22.72%

disagreement that the positive adjectives used are descriptive of the acute subject group. (see Table 5B)

For chronic group raters, 38.64 percent of responses indicate agreement that the positive adjectives used are descriptive of the chronic group subjects, 21.83 percent of responses indicate a neutral stance and 39.53 percent of raters' responses indicate disagreement that the positive adjectives used are descriptive of the chronic group subjects. (see Table 5C)

For the negative adjectives, 20.15 percent of normal group raters' responses indicate agreement that the adjectives they used are descriptive of normal group subjects; 18.61 percent of responses indicate a neutral stance and 61.24 percent of raters' responses indicate disagreement that the negative adjectives used are descriptive of the normal group subjects. (see Table 6A)

For acute group subjects, 41.24 percent of the raters' responses indicate agreement with the negative adjectives; 24.74 percent indicate a neutral stance and 34.02 percent of responses indicate disagreement that the negative adjectives used are descriptive of the subjects. (see Table 6B)

Finally, chronic group raters' responses indicate 55.16 percent agreement with the negative adjectives; 22.12 percent of responses indicate a neutral stance and 22.72 percent of raters' responses indicate disagreement that the negative adjectives used are descriptive of the

chronic group subjects. (see Table 6C)

Parametric testing (i.e. randomization one-way ANOVA and independent t tests) was undertaken to test the original hypotheses put forth in Chapter II. Null hypotheses one and two state no difference exists among the three subject groups examined with respect to rater endorsement of positive or negative adjectives.

Results from the ANOVA examining this statement, with respect to positive adjectives only, indicate a highly significant difference (p = .001) between raters' mean endorsement scores among the three groups, therefore null hypothesis one is rejected. (see Table 8) Similarly, results from the ANOVA comparing raters' mean responses to the negative adjectives also indicate highly significant differences (p = .001) among the three groups and therefore null hypothesis two is rejected. (see Table 8)

In order to pinpoint further where among the three groups these differences exist, six separate t tests were conducted; three comparing possible group differences for rater endorsement of positive adjectives, and three comparing possible group differences for rater endorsement of negative adjectives.

Results from these t tests for the positive adjectives comparing mean score differences between the normal and acute groups (p = .001), and the normal and chronic groups (p = .001) indicate highly significant differences. No differences are indicated between the mean scores of

TABLE 8

Analyses of Variance for Differences in Adjective Endorsement Among Normal, Acute and Chronic Group Raters

Positive Adjectives

Group	Number of Cases (Adjectives)	Mean	SD	Two Tail Probability
Normal	27	2.22	0.82	0.001
Acute	27	2.94	0.49	
Chronic	27	2.96	0.41	

Negative Adjectives

Group	Number of Cases (Adjectives)	Mean	SD	Two Tail Probability
Normal	27	2.38	0.636	0.001
Acute	27	3.03	0.557	
Chronic	27	3.33	0.450	

positive adjective endorsement for the acute and chronic groups (p = .850). (see Table 9)

Results from the t tests for the negative adjectives comparing mean score differences for these same three sets of groups indicate significant differences in raters' adjective endorsement between the normal and acute groups (p = .001); between the normal and chronic groups (p = .001) and between the acute and chronic groups (p = .029). (see Table 9)

Results from the post hoc correlational analysis examining the relationship between subjects' scale score elevations and raters' endorsement of positive and negative adjectives are shown in Table 10. The null hypotheses in this instance are stated as follows:

Ho3 No significant relationship exists with respect to subjects' MMPI clinical scale scores and raters' endorsement of positive adjectives.

Ho4 No significant relationship exists with respect to subjects' MMPI clinical scale scores and raters' endorsement of negative adjectives.

The results from the correlational analysis for the positive adjectives indicate no relationship exists between normal group subjects' scale scores and normal group raters' endorsement of adjectives (r = .783; p = .239); between acute group subjects' scale scores and acute group raters' endorsement of adjectives (r = -.526; p = .062); or between

TABLE 9

Results of t Tests for Group Comparisons
of Differences in Rater Endorsement of Adjectives

Positive Adjectives

Groups Compared	Number of Cases (Adjectives)	Mean	SD	Two Tail Probability
Normal	27	2.22	0.82	0.001
Acute	27	2.94	0.49	
Normal	27	2.22	0.82	0.001
Chronic	27	2.96	0.41	
Acute	27	2.94	0.49	0.850
Chronic	27	2.96	0.41	

Negative Adjectives

Groups Compared	Number of Cases (Adjectives)	Mean	SD	Two Tail Probability
Normal	27	2.38	0.64	0.001
Acute	27	3.03	0.56	
Normal	27	2.38	0.64	0.001
Chronic	27	3.33	0.45	
Acute	27	3.03	0.56	0.029
Chronic	27	3.33	0.45	

TABLE 10

Correlational Analyses Between Subjects' MMPI Scores Grouped by Range and the Percentage of Raters' Endorsement of Adjectives

Positive Adjectives

	Normal Group (N = 4)	Acute Group (N = 11)	Chronic Group (N = 11)
correlation coefficient	0.783	- 0.526	- 0.254
two tailed probability	0.239	0.062	0.427

Negative Adjectives

	Normal Group (N = 4)	Acute Group (N = 11)	Chronic Group (N = 11)
correlation coefficient	0.108	- 0.197	0.260
two tailed probability	1.000	0.549	0.447

chronic group subjects' scale scores and chronic group raters' endorsement of adjectives ($r = -.254$; $p = .427$). These results confirm null hypothesis three for all groups. (see Table 10)

Results from the correlational analysis for negative adjective endorsement similarly provide confirmation of null hypothesis four for all three groups (normal: $r = .108$; $p = 1.000$; acute: $r = -.197$; $p = .549$; chronic: $r = .260$; $p = .447$) indicating no relationship between subjects' scale scores and raters' endorsement of negative adjectives. (see Table 10)

CHAPTER V

DISCUSSION

SUBJECTS' RESULTS

The mean of the means of MMPI scores for the normal, acute and chronic groups are 70.40, 81.52 and 78.87 respectively. As one would expect, the average is considerably lower for the normal versus the clinical groups. The acute group average is slightly higher than that of the chronic group. This may be due to the sudden onset and severity (i.e. warranting psychiatric admission) of the acute subjects' distress. One explanation as to why the difference between these two scores is not even more pronounced is that acute subjects had been in hospital for at least 10 days prior to MMPI administration. Treatment during this time (eg. chemotherapy/psychotherapy) may have reduced the level or degree of distress, resulting in a reduction of symptoms and corresponding lowering of MMPI scores. To the extent this happened, the effect is to make the acute group scores functionally similar to those of the chronic group.

The correlational analysis of subjects' age and scale scores revealed that as chronic group subjects' ages increase, there is a corresponding decrease in profile elevations. This relationship has been documented elsewhere (Greene, 1980), the explanation being that persons with a chronic mental illness have become so adjusted to their long-standing problems, that they can still feel "good" about themselves

while at the same time admitting problems. Conversely, while results from the correlational analysis for the acute group did not achieve significance ($r = .408$; $p = .094$), they do suggest a trend in the opposite direction, i.e., as age increases, profile elevation increases. In this instance it may be that, when mental illness occurs at a later age, persons are somewhat less prepared and less resilient in dealing with emotional problems. For the normal group, as expected, no trend or relationship is indicated by the correlational analysis ($r = .134$; $p = .568$).

RATERS' RESULTS

Results from the descriptive statistics show the normal group subjects obtained by far the greater percentage of rater endorsement of positive adjectives (71.32%) and least endorsement of negative adjectives (20.15%). Caution is suggested in interpretation of this finding in that ratings in this instance were provided by friends and family of the subjects. This relationship increases the probability of greater positive adjective endorsement and lesser negative adjective endorsement, despite the guarantee of confidentiality of responses provided to the raters. This problem notwithstanding, the outcome for the normal group is as expected and in agreement with previously outlined research results where student groups are consistently found to have more positive

attributes than are indicated by standard MMPI interpretations (eg., Goodstein, 1954; Sopchak, 1952; Clark, 1953). These results then lend support to Goodstein's (1954) contention that the development of new student norms is essential if the MMPI is to continue to be administered to this population.

Results of acute group ratings show the least amount of positive adjective endorsement among all three groups (35.74%), along with a somewhat higher endorsement of the negative adjectives (41.24%). While the finding of greater negative versus positive endorsement, and overall least positive adjective endorsement among groups is understandable given the severity of the acute subjects' emotional trauma, it is also noteworthy that, despite this, raters were still willing to endorse a substantial number of positive characteristics for their subject group.

Results from the descriptive statistics for the chronic group show raters described their subjects as most positive (38.64%) and most negative (55.16%) of the two clinical groups. A number of possible explanations can be considered with respect to this finding. The first may be provided by Greene's (1980) explanation that many chronically mentally ill persons develop a great many coping mechanisms in adjusting to their illness. Thus, these individuals can present themselves in a positive light while at the same time admitting problems. In addition to this, unlike acute subjects, all chronic subjects were 'in remission' at the time of testing and coping in the community with the assistance of

various professional support systems. Chronic group raters were then able to observe their subjects 'at their best' and presumably more able to detect positive client attributes. However, despite this endorsement of positive characteristics, the much greater endorsement of negative characteristics by raters for this group (55.16%) would appear to reflect the severity of the illness being experienced by these subjects. As outlined previously, all chronic subjects suffered from recurring mental illness, had poor premorbid adjustment and required numerous support systems in order to sustain themselves minimally in the community.

With respect to raters' endorsements falling into the neutral category for both positive and negative adjectives, a trend is found in that neutral endorsement is least for the normal group (18.60% and 18.61% respectively); followed by the chronic group (21.83% and 22.12% respectively) and greatest for the acute group (33.68% and 24.74% respectively). One explanation for this trend may lie in the varying types of relationships the three rater groups had with the subjects they rated. For the normal group, raters were friends and family of the subjects. One would expect they then knew subjects more intimately and so were able to decide more firmly whether an adjective was descriptive of the subject they rated. Chronic group raters often saw their subjects on a daily basis and interacted with them in a variety of ways (eg., social, supervisory, supportive, etc.). Again, their knowledge of the

subjects they rated would have at minimum been more general than for the acute group raters who observed their subjects in one setting and in one capacity. The scope of the chronic raters' knowledge of their subjects would have allowed them to be more definitive in their overall rating of the subjects.

In summary, results from the descriptive statistics for both positive and negative adjectives appear to support the feasibility of MMPI interpretation being approached in a broader manner for both the normal and clinical groups. Raters for all subject groups showed a willingness to endorse a substantial number of positive behavioral attributes of the subjects they rated, despite the fact they were rating them on personality dimensions which, according to subjects' MMPI profiles, involved the presence of psychopathology.

Given this outcome of raters' responses to the adjectives, parametric testing was undertaken in responding to the null hypotheses stated in Chapter II.

ANOVA results for the positive adjectives ($p = .001$) and for the negative adjectives ($p = .001$) indicate highly significant differences exist among the mean adjective endorsement scores of the three rater groups.

t Test results for the positive adjectives indicate normal group raters agreed the positive adjectives were descriptive of their subjects to a significantly greater extent than did either acute group raters

(p = .001) or chronic group raters (p = .001). These results are as expected and may also be congruent with the Kunce and Anderson (1976) proposition that the greater the degree of emotional distress, the less applicable will be the positive adjectives. In this instance, both clinical groups were experiencing emotional distress while normal group subjects denied any major life stressors at the time of MMPI administration.

t Test results for the positive adjectives comparing the clinical groups indicate no difference exists in raters' mean endorsement scores (p = .850). One possible explanation for this finding, as was presented in the discussion of the descriptive statistics, is that chronic group subjects were seen in a more positive light than the nature of their illness would indicate. Conversely, acute subjects, while in the midst of their illness, would manifest fewer positive behaviors. These two factors occurring simultaneously would tend to increase positive adjective endorsement for the chronic group, while decreasing endorsement for the acute group, and thus result in the finding of no difference in raters' mean endorsement scores for these adjectives.

t Test results for the negative adjectives indicate significant differences exist between all three group comparisons of raters' mean endorsement scores.

Normal group raters agreed to a significantly less extent that negative adjectives were descriptive of their subjects than did acute

group raters ($p = .001$) or chronic group raters ($p = .001$). Again, this finding is as anticipated and would support Kunce and Anderson's contention.

t Test results for the negative adjectives comparing the clinical groups indicate chronic group raters agreed the negative adjectives were descriptive of their subjects to a significantly greater extent than did acute group raters ($p = .029$). These results may reflect the severity and breadth of the disabilities of the chronically mentally ill versus the acutely mentally ill subjects used in this study. Unfortunately, for the clinical groups no data was gathered as to whether one clinical group was experiencing any greater degree of emotional distress than was the other. Therefore it is not possible to ascertain whether adjective endorsement is related to degree of distress as is suggested by Kunce and Anderson.

Findings from the parametric tests then indicate that significant differences exist with respect to raters' endorsement of adjectives between the various groups compared. The one exception to this is the raters' endorsement of the positive adjectives for the acute and chronic groups.

Caution is required in any further interpretation of these findings. In those instances where differences are found, it is not possible to ascertain whether they are due to differences among or between subject groups (eg., differences in degree of emotional distress), or among or

between various rater groups (eg., differences in training backgrounds and/or in relationships with the subjects). This can only be determined through further research which controls for such variables as outlined above.

POST HOC ANALYSIS

Results from each of the correlational analyses, for both positive and negative adjectives, indicate no relationship exists between the degree of subjects' scale elevations and raters' endorsement (i.e. agreement) of adjectives. (see Table 10) This finding may be congruent with Graham's (1977) assertion that essentially the same picture emerges for high scoring individuals. It may also support the contention that despite the onset or presence of psychopathology, persons retain identifiable positive behavioral characteristics, in addition to manifesting behaviors congruent with the specific pathology. This explanation would be congruent with the previous finding that raters willingly endorsed a number of positive characteristics of the subjects they rated, notwithstanding the presence of psychopathology as indicated by MMPI profiles.

CHAPTER VI

IMPLICATIONS AND CONCLUSIONS

SUMMARY OF MAJOR FINDINGS

It has long been accepted that assessment and rehabilitation efforts with the emotionally disturbed should take into account client assets and strengths, along with identification of pathology, in order to maximize treatment outcome for the client. Unfortunately, as noted by Witryol and Boly (1954), attempts at such positive identification have amounted to little more than ". . . a profession of faith. . .", as reflected in the predominantly negative orientation of many of our clinical assessment tools.

The MMPI, used extensively throughout both clinical and nonclinical settings, is an example of such a tool. Developed in 1940 for the purpose of detecting psychopathology, the descriptor base features fully 90 percent negative adjectives used for client assessment and subsequent treatment purposes.

Research on the MMPI has highlighted the case that this bias is perhaps too negative to provide fair and accurate assessments for a number of nonclinical groups (eg. Barron, 1969; Rosen & Rosen, 1957; Goodstein, 1954). A related question, and one not addressed in the literature, is whether this shortcoming may also be the case for clinical

groups.

The aim of the present study was to explore this possibility using subjects drawn from both nonclinical and clinical settings. The major finding of this research is that for all groups, raters showed a willingness to endorse both negative and positive attributes of the subjects they rated - despite the fact they were rating them on personality dimensions which, according to subjects' MMPI profiles, included the presence of psychopathology. Moreover, no relationship is indicated in terms of the amount of rater endorsement of either set of adjectives and the degree of psychopathology indicated by subjects' MMPI scale score elevations within any one group. Taken together these findings may indicate that despite presence or degree of psychopathology, persons retain many inherent or learned adaptive features, to the point these can still be identified and drawn upon in the assessment and treatment process.

Certainly a question related to the above, and one requiring further research, is whether without a systematic method of identifying positive client characteristics these would still have been included in the assessment and development of a treatment program for the client.

Results from this research also indicate that raters differed between groups with respect to their endorsement of the adjectives presented (the exception being between the two clinical groups and the number of positive adjective endorsements made by raters). Tentatively

stated, these overall results are as expected in that the normal group was identified as most positive and least negative of all groups. For the clinical groups the acute was identified as least positive and least negative, while the chronic was most positive and most negative. Looked at in this light, the amount of positive and negative adjective endorsement for the acute group is the most restricted (i.e. least positive and least negative). As discussed previously these overall results may reflect the more restricted nature of the relationship of the acute group raters to the acute group subjects. In general however, further research controlling for homogeneity of raters among all groups is essential before attempting conclusions from these results.

LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

One of the first limitations that must be considered is the lack of validity and reliability of the MMPI Adjective Rating Scale Index (RSI). Due to the exploratory nature of this research and the lack of any other adequate measuring tool, the writer devised this instrument in order to conduct the research. For its development the writer used those adjectives identified by Kunce and Anderson (1976). This approach to the instrument construction lends itself to a degree of content validity in as much as the selected adjectives are based on expert opinion. Wiggins (1973) however does note some questionable assumptions

to this approach such as differences in interpretation of the semantic meaning of the test items and human bias involved in the expert opinion.

The lack of inter-rater reliability has limited the interpretation of the data. Unfortunately, due to practical limitations (i.e. small staffing components of the agencies involved and the requirement that raters have some knowledge of the subject they rated) it was not possible to establish this factor within the scope of this study. Further research is essential in this regard alone, which should be designed to have greater than one rater per subject, in order to establish some baseline inter-rater reliability for this instrument.

In addition to eliminating the possibility of establishing inter-rater reliability, other limitations relating to the small staffing components of the agencies involved included not being able to establish one rater group for both clinical group subjects, nor being able to obtain a one-to-one ratio of raters and subjects within groups. In the first instance, having to use three distinctly separate rater groups to rate three separate subject groups eliminated the possibility of any reasonable comparisons across groups. In the second instance, the lack of a one-to-one ratio increases the probability of a significant effect occurring due to a rater bias. Further research efforts, with access to a larger rater/subject pool, could eliminate both these limitations within the research design.

Subjects and raters vary with respect to their contribution to the

frequency data. This is in part due to inclusion of only T-scores $\geq$ 65 on MMPI scales, and the fact that subjects varied considerably in the profiles they produced. While it might be helpful to include ratings on all scales regardless of subjects' scale score, a much larger pool of subjects would again be required to entirely eliminate the problem of diversity of subject profiles.

An additional limitation involved not having administered a stress test to subjects at the time of MMPI administration. This resulted in not being able to ascertain whether endorsement of adjectives was in any way related to the level or degree of stress being experienced by subjects, as suggested by Kunce and Anderson (1976). Moreover, collection of either subject or rater demographic data was minimal in the current research. Relationships between MMPI results and such variables as education and SES have been found to exist (eg. Green, 1980). It is possible these variables may have had a bearing on the current results. Future research should account for these factors and the extent of their impact on research findings.

Finally, there are limitations inherent in the voluntary nature of both subject and rater participation. It may be that those persons choosing not to participate somehow differed from those who consented to participate.

In conclusion, the results of this study should not be generalized to groups or persons beyond those actually involved in the present

research. Future research designs should exert greater controls of those variables outlined above in order that results can be considered in more conclusive terms, and can be generalized to persons or groups beyond those actually involved in the research.

Notwithstanding the above limitations, the results of this research do suggest the need for a re-evaluation of the tendency to focus on client disabilities to the exclusion of strengths and abilities. The writer affirms Witryol and Boly's (1954) and Wright and Fletcher's (1983) assertion that we must go beyond our belief in the positive, and pay at least as much attention to developing a systematic means of detecting individual assets as has been given to detecting individual liabilities. In support of the work of Kunce and Anderson and based on the results of this study, the MMPI, one of the most widely respected and most widely used assessment instruments today, would seem a likely candidate with which to begin such efforts.

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APPENDIX A

THE MMPI ADJECTIVE RATING SCALE INDEX

Below is a list of nine sets of adjectives. The adjectives are listed in such a way that you may 'voice' your opinion from strongly agreeing that the adjective accurately describes the person you are rating, to strongly disagreeing that the adjective accurately describes this person. Please respond in terms of your perceptions of the person at the present time. There are no right or wrong answers; this depends solely upon your judgement. Circle only ONE response for each adjective. Please be as objective as you can in completing this scale.

The key for your responses is as follows:

Strongly Agree SA

Agree A

Neutral N

Disagree D

Strongly Disagree SD

I. a) conscientious

SA A N D SD

b) careful

SA A N D SD

c) dependent

SA A N D SD

d) considerate

SA	A	N	D	SD

e) irritable

SA	A	N	D	SD

f) complaining

SA	A	N	D	SD

II. a) objective

SA	A	N	D	SD

b) critical

SA	A	N	D	SD

c) anxious

SA	A	N	D	SD

d) deliberate

SA	A	N	D	SD

e) realistic

SA	A	N	D	SD

f) pessimistic

SA	A	N	D	SD

III. a) over-reactive

SA	A	N	D	SD

b) empathetic

SA	A	N	D	SD

c) optimistic

SA A N D SD

d) suggestible

SA A N D SD

e) denying

SA A N D SD

f) sensitive

SA A N D SD

IV. a) energetic

SA A N D SD

b) impulsive

SA A N D SD

c) hostile

SA A N D SD

d) social

SA A N D SD

e) manipulative

SA A N D SD

f) enterprising

SA A N D SD

V. a) investigative

SA A N D SD

b) distrustful

SA A N D SD

c) curious

SA A N D SD

d) hypersensitive

SA A N D SD

e) questioning

SA A N D SD

f) suspicious

SA A N D SD

VI. a) methodical

SA A N D SD

b) ritualistic

SA A N D SD

c) organized

SA A N D SD

d) systematic

SA A N D SD

e) rigid

SA A N D SD

f) compulsive

SA A N D SD

VII. a) creative

SA A N D SD

b) irrational

SA A N D SD

c) spontaneous

SA A N D SD

d) confused

SA A N D SD

e) imaginative

SA A N D SD

f) bizarre

SA A N D SD

VIII. a) enthusiastic

SA A N D SD

b) disorganized

SA A N D SD

c) exuberant

SA A N D SD

d) agitated

SA A N D SD

e) hyper

SA A N D SD

f) whole-hearted

SA A N D SD

IX. a) asocial

SA A N D SD

b) free-lance

SA A N D SD

c) independent

SA A N D SD

d) reclusive

SA A N D SD

e) self-reliant

SA A N D SD

f) alienated

SA A N D SD

APPENDIX B

CONSENT FORM FOR SUBJECTS

INTRODUCTION

The current research is being conducted in partial fulfillment of the requirements for a master's degree in Clinical Psychology. The specific focus of this research involves use of a psychometric testing instrument called the MMPI (Minnesota Multiphasic Personality Inventory). The test consists of four validity and ten clinical scales. Persons completing the test respond to a total of 556 statements either true, false or cannot say. The results from these responses form a psychogram, which in turn serves as the basis for making inferences about the respondents' overall personality. The MMPI has been noted as one of the most widely used and researched instruments today. To date it has been used in such diverse areas as personnel selection, career counselling, most if not all clinical settings and with numerous student groups.

However, the test was first constructed back in 1940 by Hathaway and McKinley. This study is formulated to explore a more current approach to interpreting the test results. Specifically it will involve comparing MMPI results with a second test devised by myself titled the MMPI Adjective Rating Scale Index.

In order to conduct this study I need volunteers to complete the MMPI. I also need a second person, called a 'rater' to complete the Adjective Rating Scale Index. I will be requesting your rater to rate you on some or all of the scales depending on your MMPI profile. To ensure your anonymity, neither your name or the name of your rater will appear on the completed test forms. Further, the individual results derived from both these tests will be considered completely confidential. All results will be reported in aggregate form only. All of the completed documents will be destroyed upon completion of the analyses of the data. Your participation in this study will be of a purely voluntary nature and you may withdraw at any time without penalty.

SUBJECT'S CONSENT FORM

I, ________________, consent to participate in a study conducted by Patricia Cameron, comparing MMPI test results with results from an MMPI Adjective Rating Scale Index.

This consent is given with the knowledge I will be requested to participate in the following manner:

1) To complete the MMPI
2) To agree to having a rater complete the MMPI Adjective Rating Scale Index as he/she views it as applying to myself.

I have reviewed each of the questionnaires prior to signing this consent form and am aware of their content. I have further agreed that the individual results of these tests will not be made known to myself, and will be used only for purposes of Ms. Cameron's research.

I understand that my participation is of a purely voluntary nature and that I may withdraw from the study at any time without penalty. Further, I understand that at no time will my name be attached to either of the completed test forms, or in any way be used in conjunction with the research beyond this consent form. Finally, all completed tests and forms will be destroyed at the conclusion of the study.

________________________ ________________________
Subject Date

________________________ ________________________
Researcher Date

CONSENT FOR RATERS

I, ____________________, consent to having ________________________ complete the MMPI Adjective Rating Scale Index as he/she views it as applying to me. I have signed this consent form only after having agreed to the conditions as outlined in the Subject's Consent Form and with the understanding I will not be receiving feedback as to the rating provided. I further understand Ms. Cameron will seek informed consent from __________________ prior to administering him/her the test.

____________________________ ____________________________
Subject Date

____________________________ ____________________________
Researcher Date