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An Investigation of the Relationship between Premorbid Personality and Depression

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AN INVESTIGATION OF THE RELATIONSHIP
BETWEEN PREMORBID PERSONALITY
AND DEPRESSION

by

William Essenburg

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
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Western Michigan University
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Depression is a significant mental health problem and has been studied extensively for decades. However, there is still disagreement among clinicians and researchers regarding the causes and psychodynamic processes of depression.

The purpose of this study was to investigate the relationship between premorbid personality and depression. Using the Millon Clinical Multiaxial Inventory (MCMI) and the Beck Depression Inventory, personality and depression measures were obtained from a sample of adult psychiatric inpatients during acute and remission phases of their hospitalization.

Results obtained indicated that the MCMI scales intended to measure premorbid personality during periods of acute psychiatric illness were sensitive to levels of symptom severity. The MCMI measures obtained during acute illness could not be used reliably to make inferences regarding premorbid functioning.

Using personality measures obtained during remission phases, it was found that depressed patients, when recovered, did not display personality patterns which were significantly different from those of patients who had been hospitalized for reasons other than depression. Significant differences were found, however, between the personality patterns displayed by depressed and...
non-depressed inpatients during the acute phase of illness.

Based on the results obtained, it was concluded that there was no premorbid personality pattern which distinguished depressed from non-depressed clinical subjects. Differences in measured personality patterns between depressed and non-depressed subjects were evident only during the course of depression.

It was recommended that further research be conducted to investigate the reliability of the eight basic personality scales of the MCMI. It was further recommended that until more support exists for the reliability of personality trait measures of clinical subjects, a longitudinal design may be most appropriate for an investigation of the relationship of personality and depression.
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William Essenburg
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Depression is both an ancient phenomenon and one of the major mental health problems of today. Even though it has been recognized for centuries and studied for decades, depression remains a disorder that is inadequately understood. A review of the literature reveals a long history of controversy and disagreement regarding the etiology and psychodynamic processes of depressive disorders.

Depression was described more than two thousand years ago. Fabry (1980) cited several historical recordings of the disorder. One of the earliest in the Bible, in the book of Job, describes "the grief and agonized feelings of men and women who seem to have lost faith in themselves and God as well as any hope for the future" (p. 589).

Beck (1967b) noted references to depression in the second century A.D. by Plutarch and the Greek physician, Aretaeus. Aretaeus (cited in Beck, 1967b) described the melancholic patient as:

sad, dismayed, sleepless. They become thin by their agitation and loss of refreshing sleep. At a more advanced stage they complain of a thousand futilities and desire death. (p. 4)

Beck (1967b) stated that these ancient descriptions of depression are strikingly similar to modern textbook descriptions.
and also identify the cardinal signs and symptoms used today in diagnosing depression.

Today, depression remains a significant problem for large numbers of people. According to Kline (1964), depression has been responsible for more human suffering than any other single disease affecting mankind. Dunlop (1965) estimated that although depression is second to schizophrenia in hospital admissions, the prevalence of depression outside hospitals is five times greater than that of schizophrenia.

Beck (1967b) stated that depression currently ranks as one of the major mental health problems:

Millions of patients suffering from some form of the disorder crowd the psychiatric and general hospitals, the outpatient clinics, and the offices of private practitioners. (p. xiii)

Becker (1977) cited a 1973 Institute of Mental Health study which states that depression rivals schizophrenia as the nation's number one mental health problem. That study reports that about 15 percent of American adults have significant depressive features. Depressive symptoms are responsible for the hospitalization of 125,000 persons in the United States each year. An additional 200,000 are treated for depression on an outpatient basis.

In spite of its long history and current prevalence, much disagreement yet exists regarding the nature of depressive disorders. Beck (1967b) said:
Although depression (or melancholia) has been recognized as a clinical syndrome for over two thousand years, as yet no completely satisfactory explanation of its puzzling and paradoxical features has been found. There are still major unresolved issues regarding its nature, its classification, and its etiology. (p. 3)

Historically, a variety of views regarding the etiology of depression have been proposed. Meyer (1908) maintained that depression was a reaction to events in an individual's life. Kraepelin (1913) proposed a biological abnormality as the basis of depression. Freud (1917) differentiated mourning and melancholia. Mourning, he said, was the person's reaction to the loss of a love object. Melancholia, however, was the result of the individual directing hostile feelings formerly associated with the lost object inward toward the self.

Among contemporary theorists, Beck (1967a, 1967b, 1976) proposed that depression results from an individual's negative cognitions. Beck (1967b) described a primary cognitive triad. The individual's negative view of the world, the self, and the future "leads to the phenomena that are associated with the depressive state" (p. 255).

Seligman (1975) developed the concept of learned helplessness. He believed that it is central in the development of depression. He proposed that depression develops when the individual gives up and no longer responds to overcome frustration in his environment. Seligman stated that this helplessness is learned through prior exposure to uncontrollable events. The individual learns to expect that his efforts are generally futile.
According to Akiskal and McKinney (1975), there are currently at least ten different models of depression reflecting five dominant schools of thought evident in the literature. Akiskal and McKinney point out the need for more research based on objective, measurable variables to bring integration to this diversity.

Klerman (1973) stated that in the last decade, there has been increased interest and research in the area of affective disorders. Significant progress has occurred in the treatment of depression, especially with drugs. Progress has also occurred in classification based on clinical symptoms and in genetic and epidemiologic studies. However, research into the relationship of personality to depression has lagged behind other fields.

Research into the relationship of personality traits to depression has the potential to increase knowledge regarding the etiology and psychodynamic processes involved in depression. Several theorists (Chodoff, 1973; Klerman, 1973; Metcalfe, 1968) argue that premorbid personality traits predispose the individual to depressive disorders and probably influence the nature of the symptoms displayed. Chodoff (1973) stated that although the literature indicates a widely held opinion that persons prone to depression display certain distinctive personality traits, it appears that there is no consensus about the characteristics of the personality traits which predispose one to depression.
Statement of the Problem

The purpose of this study is to investigate the relationship between premorbid personality traits and primary depression.

In conducting the investigation, the problem of measuring premorbid personality traits must be addressed. The optimum time to measure premorbid personality traits is obviously prior to the appearance of psychiatric symptoms. The opportunity to conduct personality assessments of subjects who exhibit psychiatric disorders prior to the appearance of symptoms is rarely available. Such opportunity would only be available by testing large numbers of subjects, then following those subjects for a long period of time to determine which individuals later developed psychiatric problems. Such longitudinal research is beyond the means and scope of most investigators. An alternative is to use a standardized personality measure which is able to assess stable and enduring personality traits independent of the presence or absence of psychiatric symptoms.

The study will investigate two problems. The first problem is what relationship, if any, exists between the premorbid personality traits of psychiatric inpatients and the presence or absence of primary depression.

Because the purpose of the study is to investigate stable personality traits rather than temporary states in relation to depression, the second problem focuses on the issue of the stability of the personality traits measured.
Research Objectives

The research objectives of this study are to investigate the extent to which premorbid personality patterns may be related to the presence of primary depression in hospitalized psychiatric patients, and to investigate the feasibility of using a personality measure made during acute symptom phases to make inferences regarding premorbid personality patterns. The study will proceed from a psychodynamic perspective and assumes that the existence of a relationship between personality traits and depression will have important implications for understanding the etiology and psychodynamic process of depression.

Significance of the Study

Von Zerssen (1977) stated that premorbid personality traits of patients with any type of psychiatric disorder are usually considered to be predisposing factors. There is broad agreement among investigators that personality traits play an important role in the onset and process of depression. However, the nature of the relationship between personality and depression remains controversial.

The establishment of a better understanding of this relationship will be valuable from a theoretical as well as from a practical point of view. The identification of a relationship between particular premorbid personality traits and depression will aid in the refinement of theory and stimulate further inquiry about the
etiology and psychodynamics of depression. If a relationship exists between personality and depression, then theories of both personality and depression must be able to accommodate and account for that relationship. Von Zerssen (1977) stated that if there is an association between these variables, any theory of depressive illness will not be complete if it does not explain that association.

Chodoff (1973) commented on the heuristic value of such study. He said:

Since an observable personality pattern represents the crystallization of underlying psychodynamic processes, agreement on the characteristics of such a pattern or patterns would offer significant aid to efforts to study psychological factors in the genesis of depression. (p. 196)

The investigation of the relationship of personality and depression also has practical clinical value. Additional knowledge about such a relationship will aid in the diagnosis, prognosis and treatment of depression.

Presently, the diagnosis of depression is made based on the patient's manifest symptoms. Information about premorbid personality patterns could contribute to the body of information available for diagnosis if there was agreement about the relationship of particular personality traits to depression. The presence or absence of specific traits would favor or not support specific diagnoses.

Prognosis would also be aided because as Von Zerssen (1977) stated, "the prognosis of future development of the disease—including response to treatment—will partly depend on the
Identification of appropriate approaches for the treatment of depression would be enhanced by a clearer understanding of the psychological factors which are related to and operative in the disorder. It would seem logical to focus treatment on the attenuation of those traits found to be positively related to depression.

A knowledge of premorbid patterns may also provide a means of measuring the severity of depression and aid in identifying remission of the disorder. The reestablishment of the premorbid pattern may provide additional information to confirm recovery from depression.

The study will also have significance if it can be established that the personality measure used is able to identify premorbid personality traits independent of patients' symptom states. If inferences about premorbid personality traits are to be made, then some confidence must exist that measures made during the illness represent patterns that are not merely manifestations of the acute symptom phase of a depression. Kendell and Discipio (1968) emphasized the importance of this issue in personality and depression research and indicated that it is doubtful that this requirement is usually met. Metcalfe (1968) stated that "too often authors have assessed the 'constitutional depressive personality' on the basis of a patient's symptoms" (p. 98).
Investigators have tried to identify premorbid personality by testing recovered patients assuming premorbid patterns reemerge, by asking patients to respond to personality measures based on how they felt before they became symptomatic, by interviewing patients' families to gather information about premorbid functioning, and by interviewing patients about their past life and previous functioning.

All of these methods are subject to significant sources of error and most are not compatible with standardized measures. The investigation of the usefulness of a personality test in measuring stable features of personality, independent of symptom states, will provide valuable information about the role this instrument may have in personality research.

Limitations

This study will be conducted in an acute care adult inpatient psychiatric hospital. Personality and depression measures will be made immediately following patients' admissions and immediately prior to discharge. The pattern and intensity of symptoms displayed by newly admitted patients will be affected by a number of factors. The presence of psychiatric medication or street drugs and recent exposure to extreme psychosocial stressors may exaggerate or diminish the expression of pathology.

In measuring personality and depression under non-acute conditions, immediately prior to discharge, additional variables
which will not be able to be controlled will be present. Patient length of stay will vary considerably. Length of stay and the decision to discharge are influenced by several factors. A patient's "readiness for discharge" will depend on the clinical judgment of the attending psychiatrist, the resources available in the patient's home environment, the patient's willingness to remain hospitalized if the hospitalization is "voluntary", and the availability of empty beds to accommodate anticipated admissions. Consequently, patients "ready" for discharge will not represent a homogenous "recovered" group.

Subjects' participation in the study will be on a voluntary basis. This will be a potential source of bias because data will be collected from "cooperative" patients but will not be available from the "uncooperative" group.

Summary

There is wide agreement in psychiatry and psychology that enduring personality traits play a predisposing role in the development of depression. There is much disagreement, however, about the nature of the relationship of personality to depression.

Researchers who have attempted to investigate the relationship of personality traits to various psychiatric disorders have consistently struggled with the problem of measuring premorbid traits in the presence of acute psychiatric symptoms. This study will investigate the relationship of premorbid personality to depression.
by comparing personality measures of depressed and non-depressed clinical subjects. Personality measures obtained during acute and recovered phases of illness will be compared to assess the stability of trait measures under different levels of symptom severity.
CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this chapter is to review the research and literature regarding the relationship of personality and depression. The chapter will include a review of selected literature to establish a historical overview of the thinking of major authorities regarding that relationship, a review of systematic research into that relationship, and a review of research related to questions regarding the definition and diagnosis of depression. The information presented in this chapter represents a sample of the literature existent in the area and has been selected on the basis of its significance and relevance to the questions addressed in this study.

Personality and Depression

Historical Overview

The history of our acquaintance with depression is long. The condition we now call depression was described by ancient writers as "melancholia".

In the fourth century B.C., Hippocrates provided the first clinical description of melancholia. The melancholic, one of four temperaments described by Hippocrates, was believed to be an individual influenced by black bile and phlegm on the brain (Fabry, 1980).
In the middle ages, melancholia was thought to be the result of an evil spell cast on the individual by spirits (Fabry, 1980).

As time passed, ideas regarding the origins of melancholia progressed. During the eighteenth century, the medical aspects of such disturbances began to be studied in hospitals and institutions for mental disorders.

At the beginning of the nineteenth century, Pinel (cited in Beck, 1967b) recorded his observations of melancholia:

The symptoms generally comprehended by the term melancholia are taciturnity, a thoughtful pensive air, gloomy suspicions, and a love of solitude. Those traits, indeed, appear to distinguish the characters of some men otherwise in good health, and frequently in prosperous circumstances. (p. 5)

According to Fabry (1980), also in the early nineteenth century, Jean-Pierre Falret described an episodic depression with remissions and attacks that increased in duration and which seemed more prevalent among women than men. He proposed that this pattern might be associated with a precipitating event. In their attempts to understand the causes and nature of melancholia and other mental disorders, investigators in the late nineteenth and early twentieth centuries began to propose the existence of a relationship between the personality patterns and mental disorders.

Fabry (1980) noted that this concept is present in the ideas of Kraepelin who, around 1896, divided functional psychosis into two groups: dementia praecox and manic-depressive psychosis. Kraepelin's term, dementia praecox, is basically equivalent with the modern term schizophrenia. Manic-depressive psychosis, according to
Kraepelin, included all diseases involving a disturbance of mood. Kraepelin identified subtypes of manic-depressive disease: a depressive subtype, a manic subtype, and a circular or mixed form which combined manic and depressive subtypes.

Kraepelin classified the depressive disorders using an etiological approach, dividing them into those with endogenous and exogenous origins. The endogenous class originated from genetic and constitutional factors. The exogenous class were caused by external factors such as bacterial infections or chemical toxins.

Kraepelin proposed that habitual mental traits were important in the causation of endogenous depressive disease. He believed there was a relationship between particular types of mental traits and particular subtypes of depressive disease. He described depressive personalities, manic and irritable personalities, and cyclothymic personalities as predominate among patients with the respective subtypes of manic-depressive disease. Kraepelin (cited in Millon, 1981) described the depressive personality as follows:

There exists in these patients from youth a special sensitiveness to the cares, troubles, and disappointments of life. They take all things hard and feel the little unpleasantness in every occurrence. They lack self-confidence, decision, and seek the advice of others on the slightest occasions. Owing to the timidity these patients never come to a quick decision. (p. 32)

Kraepelin proposed that the relationship between personality and affective illness was best explained by viewing personality traits as a subtle habitual expression of the underlying disease. In other words, the premorbid traits resulted from the disease.
(Von Zerssen, 1977).

The reverse of the assumption about the direction of the relationship between personality and depression was proposed by Kretschmer in 1921. Kretschmer assumed that personality patterns were etiological and were precursors of the disease. The disease was understood as an exaggeration of the normal patterns of personality. Kretschmer also introduced the concept of constitutional typologies. He proposed that a relationship existed between physique, temperament, and mental disease. While Kraepelin had reduced the various forms of mental disease into two broad categories, manic-depressive disease and dementia praecox, Kretschmer reduced the personality features which he had related to those disorders into two types of temperament, the cyclothymic and schizothymic temperaments. The cyclothymic type was thought to be associated with manic-depressive disease and the schizothymic type with dementia praecox (schizophrenia in the terminology introduced by Bleuler in 1911).

Kretschmer also included in the concept of constitutional typologies the assumption that there was a relationship between temperament and bodily configuration. He theorized the schizothymic temperament and schizophrenia were most frequent in individuals with slender, muscular, athletic physiques. Cyclothymic temperament and manic-depressive disease were associated with a stout, "pyknic" physique.
Kretschmer's concept of constitutional typology was accepted by most investigators in the field of constitutional psychiatric research over the next few decades. Von Zerssen (1977) in his discussion of the contributions of Kraepelin and Kretschmer stated that both tended to neglect differences between the subtypes of mental diseases due to their simplification of the diseases into so few all-inclusive categories.

The ideas of Kraepelin and Kretschmer can be characterized as belonging to the somatogenic school. They considered depression to be a well defined disease, quite distinct from normal mood. There is also a strong emphasis on biology and innate constitutional characteristics as etiological factors.

Meyer (1908) proposed a theory of depression that represented a clear deviation from the models of the somatogenic school. Meyer proposed that the etiology of mental disorders was primarily psychogenic rather than due to inherent biological or constitutional factors. This position identifies Meyer with the psychobiological school.

Rather than speaking of disease entities, Meyer introduced the term "reaction types", reflecting Meyer's contention that mental disorders, including depression, resulted from the complex interaction between individual constitutional factors and the combination of psychological and social-environmental forces influencing the individual.
The psychobiological view also favored a continuity hypothesis. Whereas the somatogenic view held that mental disorders represented a disease and drew a sharp dichotomy between normal, healthy states and abnormal, disease states, Meyer favored the view that depression existed on a continuum. Regarding depression, for example, there was a continuous series of mood reactions, ranging from normal to extreme. Those various mood reactions were seen as a product of the same processes, namely the reaction of the individual due to the interaction of individual constitutional, psychological, and social factors.

Meyer was the first to propose the relationship of such a broad array of variables to depression and the first to place such emphasis on psychogenic and environmental factors. Beck (1967b) noted that Meyer's influence is reflected in the prevalence of such concepts as reactive depression in later literature. The use of the term "reaction" throughout the classification system of the Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association (1952), is also reflective of Meyer's impact.

Freud (1917) in "Mourning and Melancholia", provided a formulation that is the basis for the classic psychoanalytic interpretation of depression. Freud proposed that the predisposition to melancholia resulted from a complex intrapsychic process which occurred following the loss of a love object in early infancy. According to Freud, the predisposition to melancholia developed when the individual, following a significant loss in infancy,
formed a pathological ego introject. A pathological ego introject was basically a misdirection of psychic energy. Following the trauma of loss, libidinal energy was freed. That energy, rather than being directed outward toward a new object, was directed inward to the ego. The ego then took on some of the characteristics of the lost object and became a substitute for the lost object.

This introject became the intrapsychic representation of the previously loved and now lost object. Consequently, in later adult life, the individual would react to subsequent losses with the infantile rage associated with the original loss. That rage or aggression would be directed inward toward the internalized object, rather than outward toward appropriate objects in the environment.

With the concept of anger directed inward, Freud explained the self-recriminations and self-depreciating behavior of the melancholic.

The concept of inner-directed anger was important in the psychoanalytic formulations of depression. The presence of self-accusatory behavior was identified as one of the characteristics that distinguished depression from normal grief.

Grief was defined as a conscious direct response to an external loss. Depression was the result of a complex unconscious experience of an internal loss. The visible signs of depression were responses to the experience of loss mishandled in infancy and retained in the unconscious. Thus, the depression was not a direct reaction to conditions in the environment, but was the result of the
predisposition to depression, resulting from the formation of a pathological ego introject.

The influence of Freud's contribution is evident in the long-standing prominence of such concepts as guilt and retroflected hostility in subsequent theoretical formulations aimed at understanding the processes of depression (Bemporad, 1971).

The classic psychoanalytic model of depression focuses on aggressive instincts turned inward rather than being directed at the appropriate object. Even though this concept of dammed-up aggression was for some time the most widely accepted psychological model of depression, there has not been substantial systematic evidence to support it (Akiskal and McKinney, 1975). Freud's concepts emphasized the role of the id and identified the processes involved in depression as occurring in the unconscious. Later theorists began to place more emphasis on the role of the ego rather than the id, and on conscious rather than unconscious processes. Bibring's (1953) ego-psychological model represents the first major break with previous psychoanalytic formulations.

The ego and its interaction with conscious reality are central in Bibring's model. He characterized depression as the result of a state of helplessness or powerlessness of the ego. This state of helplessness resulted from an inability to attain a significant goal or live up to highly valued aspirations. Depression occurred, according to Bibring, when an individual was unable to live up to ego ideals, ideals that could vary with the individual. Such ideals could involve the need to be loved, to be secure, strong, or
superior. The frustration of goal attainment resulted in injury to
the ego and a drastic lowering of self-esteem.

An important aspect of Bibring's contribution was his idea that
injury to the ego and loss of self-esteem could result not only by
loss of love and affection, but also by frustration of other impor-
tant aspirations. This broadened the etiological framework of
depression and took into account the influence of a wide array of
cultural and environmental variables.

Anger or aggression in Bibring's model was regarded as secondary
rather than central in the process of depression. Anger was viewed
as occurring in response to the failure of the ego to achieve its
ideals and as a reaction to subsequent helplessness and lowering of
self-esteem.

Akiskal and McKinney (1975) pointed out that Bibring, by defining
depression as an ego phenomenon, also significantly defined it as a
social phenomenon:

The ego, unlike the id, is rooted in social reality,
and the ego ideal is composed of solidly learned symbols
and motives. A breakdown of self-esteem may involve,
in addition to object losses, man's symbolic posses-
sions, such as power, status, roles, identity, values,
and purpose for existence. Depression may easily be-
fall the overintegrated, the conventional, the individual
with upward social mobility, and women who strongly
identify with the role prescribed to them by their
culture. Thus, one can see the broad existential,
sociological, and political implications of Bibring's
concept of depression.

Bibring's shift in emphasis from the role of the id and unconscious
processes to the operations of the ego in relation to the environment
mark a significant change in the historical development of models for
understanding depression. Bibring's theory extends the trend begun with Meyer and serves as a bridge between earlier disease-oriented theories and subsequent models which emphasize the role of the environment, social learning, and cognitive processes in the phenomenon of depression.

Before proceeding with a review of contemporary studies of the relationship of personality and depression, an overview of some of the prominent contemporary models of depression seems in order.

This review will serve three purposes: the first purpose is to complete an overview of the historical development of theories regarding depression. The second purpose is to establish and describe the elements of continuity among prominent contemporary models of depression and their relationship to the formulations of earlier writers. Finally, a third purpose will be to illustrate that although some of the most prominent contemporary models of depression do not specifically address the issue of a relationship of premorbid personality to depression, the central concepts stressed within these models are compatible with such a relationship.

Beck's (1967a, 1967b, 1976) cognitive model represents an extension of the ego-psychological approach initiated by Bibring. According to Beck, an altered style of cognition, dominated by negative expectations is responsible for depression. Beck describes a cognitive triad which permeates the thinking of depressives. The cognitive triad is represented in a negative conception of the self, negative interpretations of past experiences, and a negative view of the future. Feelings of helplessness and hopelessness dominate
the affective world of the depressive.

Beck believes that these cognitive patterns are the result of a continuous learning process begun in early life. They are clusters of attitudes which consist of generalizations the individual has made based on interactions with the environment.

Beck (1967a) also maintains that self-blame is a component of the depressive's cognitive style:

According to his primitive notion of causality, the individual holds himself responsible for his defects and presumed deficiencies. This attitude is expressed as follows: "It's my own fault I always make mistakes. I'm to blame for being so weak". (p. 277)

Beck's model includes concepts of helplessness and lowered self-esteem discussed by Bibring. He also stresses the importance of self-blame in a manner similar to earlier psychoanalytic models.

Beck believes that an individual's cognitive schema is a relatively enduring component of the personality. That cognitive schema, if composed of the negative components described by Beck, predisposes the individual to depression. The depression is precipitated by an interaction of the predepressive cognitive schema with specific or non-specific stresses in one's life situation.

Seligman (1974, 1975) and his colleagues have developed a model of depression based on laboratory experiments with animals. Even though their ideas developed from work with animals, the "learned helplessness" phenomenon they have identified appears to provide many parallels to human depression.

Seligman's (1974, 1975) experiments involved two phases. Animals (specifically dogs) were first exposed to repeated aversive
stimulation, usually electric shock, and at the same time, prevented from engaging in any behavior that would allow escape from the shock. The shock was administered through a grid in the floor of the enclosure containing the dogs. A harness prevented the dogs from jumping a barrier and escaping to an area of the grid that was not electrified. After repeated exposures to this inescapable shock condition, the dogs were unharnessed and again exposed to the electric shock. Seligman had established that unharnessed dogs which had not experienced inescapable shock would, when exposed to shock, immediately leap the barrier, escaping to the nonelectrified portion of the grid. In contrast, unharnessed dogs which had experienced repeated inescapable shock conditions tended to give up and made no attempt to leap the barrier to escape the shock, tending instead to passively accept the aversive stimulus.

Seligman coined the term "learned helplessness" to describe this impairment of the animals' adaptive responding to aversive conditions. Applying this model to human behavior and to depression, Seligman theorized that adaptive responding to aversive situations depended on the expectation that one's responses would provide relief from those conditions. Learned helplessness was described as a behavioral state characterized by an absence of adaptive behaviors resulting from the assumption that there was no relationship between one's responses and relief from aversive events.

Seligman has also demonstrated that learned helplessness generalizes beyond the specific situations involved in the original learning. Learned helplessness may then represent not only a
behavioral state, but a personality trait, namely the internalized expectation that one's efforts are generally futile.

Seligman (1974) proposed that the individual who was depression-prone had a history of experiences marked by relative failure in exercising control over environmental reinforcers. Depression developed when the individual perceived that all control over positive and aversive events was lost and was then immobilized by helplessness.

Akiskal and McKinney (1975) noted that Seligman's treatment of the concept of helplessness and its relationship to depression is strikingly similar to the ideas of Beck. For both Beck and Seligman, helplessness plays a central role in depression. Helplessness is learned through interaction and experience with the environment. Once internalized, it may become a relatively stable trait coloring the individual's perceptions of self and the environment and placing the individual at risk for depression.

Although behavioral approaches to depression focus predominantly on observable behavior and its antecedents and consequences, behavioral models have some conceptual similarities to those discussed above. Wolpe (1971) proposed that chronic frustration in achieving important objectives in one's personal or professional life resulted in chronic anxiety. The individual was then unable to reduce that anxiety through responses available in his or her behavioral repertoire. A maladaptive response of passivity and helplessness developed, resulting in the manifestation of the cluster of symptoms recognized as depression. This syndrome of
passivity and helplessness is similar to the negative cognitive triad of Beck, the learned helplessness of Seligman, and even the lowered self-esteem of Bibring.

Lewinsohn (1974) in his behavioral approach to depression, described depression as follows:

We assume depression to be a continuous variable which can be conceptualized as a "state" which fluctuates over time as well as a "trait" (some people are more prone to becoming depressed than others). (pp. 157-158)

Lewinsohn (1974) proposed that a low rate of "response contingent positive reinforcement" acted as "an eliciting (unconditioned) stimulus for some depressive behaviors, such as feelings of dysphoria, fatigue, and other somatic symptoms" (p. 158). In other words, an individual is at risk for depression when there is little relationship between what the individual does (behavioral responses) and the events that follow (contingent reinforcement), a set of circumstances similar to those preceding "learned helplessness" in Seligman's model.

Three major contemporary models of depression have been reviewed: the cognitive model of Beck, the learned helplessness model of Seligman, and the behavioral model as represented by Wolpe and Lewinsohn. This review has attempted to establish the underlying continuity that is apparent in the development of theoretical concepts of the relationship of personality to depression.

Contemporary psychological models of depression emphasize cognitive and behavioral components of depression rather than personality traits or psychodynamic processes. However, the concept of states and more importantly, traits which may predispose the
individual to depression is commonly recognized by models old and new.

**Contemporary Research**

A basic problem which must be faced in a study which attempts to investigate the relationship of premorbid personality traits and depression is that of distinguishing between the stable, enduring aspects of personality and symptom states which are temporary manifestations of illness. This problem is typically present in such investigations because subjects are usually identified and available for participation because they display psychiatric symptoms for which they are receiving treatment.

Several writers have commented on the methodological fallacies of making inferences about premorbid personality on the basis of measures taken during the acute symptom phase of a psychiatric disorder. Metcalfe (1968), Kendell and Discipio (1968), Von Zerssen (1977), and many other authors have reported marked differences in subjects' scores on various personality dimensions when measures taken during illness are compared with measures made following recovery.

Metcalfe (1968) in a discussion of the importance of distinguishing between symptoms and the more stable elements of a patient's character stated:

This is because too often, and even in modern textbooks, authors have assessed the "constitutional depressive personality" on the basis of a patient's symptoms. From this approach, some of the classical descriptions of the depressive personality, including for example, a strong sense of guilt, have derived.
It is worth repeating that to assess stable pre-existing personality traits from transient symptoms in unjustifiable. (p. 98)

Chodoff (1973) emphasized that attempts to assess stable personality traits from transient symptom states would lead to false inferences about premorbid personality traits. Hirschfield and Klerman (1979) pointed out that investigations of the relationship of personality attributes and affective disorders must attempt to control for the fact that personality qualities may be altered by the experience of the affective disorder.

Investigators have tried to deal with the methodological problem of assessing premorbid personality traits in a variety of ways. They have proceeded by asking patients who were symptomatic to respond to personality instruments based on how they felt before they became symptomatic, by gathering information from patients' families about the patients' premorbid functioning and by interviewing patients about past life and previous functioning. The most common procedure has been to take personality measures after patients' symptoms have abated, assuming that following recovery, premorbid patterns reemerge.

Because of the serious limitations of any research that has not recognized this methodological problem, the section which follows will focus on that research which has acknowledged and attempted to control for the effect of acute symptom states on any measures of personality traits.

Assessing pre-existing personality from a patient's history and clinical experience has been the traditional method of clinical
psychiatry. Metcalfe (1968) reported that this method has over the years given us abundant descriptions of patients' personalities prior to depressive illness. A review of these descriptions reveals two basic types of personality. Metcalfe (1968) described these two types as follows:

The asthenic person, with little enjoyment in life, subdued in manner and usually pessimistic in outlook; and the forceful, well-integrated, duty-bound individual. (p. 99)

Metcalfe added that some clinicians suggest that often both of these types also have the characteristic of a "shut-in" temperament; an inability to establish deep emotional relationships with others.

Bemporad (1971) in a review of the psychiatric literature, identified four psychodynamic characteristics of the depressive personality: dependency on a dominant other, fear of autonomous gratification, a bargain relationship, and an inability to alter the environment.

"Dependency on a dominant other" was the most universally described characteristic in the literature. Bemporad (1971) pointed out that writers such as Rado in 1927, Fromm-Reichman in 1949, Jacobson in 1953, and Bonime in 1962, "echoed the theme of dependency as central in depression" (p. 222). In describing the dependent nature of the depressive, Bemporad (1971) stated:

The depressive appears to be the product of excessive reactive learning and seems to have developed a reactive identity in that he functions best in a role that reflects the dictates of a dominant other rather than any independent standards. These individuals seem to require the presence of an external agency in order to derive satisfaction, being unable to gain pleasure from independent achievement. (pp. 224-225)

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Bemporad proposed that "fear of autonomous gratification" was a consistent feature of depressives. This characteristic was described as an inability to derive intrinsic, personal pleasure from one's social or professional accomplishments. Instead, the depressive pursues such activities in an attempt to win acceptance and to receive assurance of self-worth from an external source. Affirmation is not available from within.

A third characteristic identified by Bemporad was the "bargain relationship". This refers to a pattern of interpersonal relating. "The depressive will deny himself autonomous satisfaction in return for nurturance from the dominant other" (p. 227). The depressive submits to self-sacrifice in order to gain acceptance. One's own desires and needs are suppressed and go unasserted in order to please and gain acceptance from the dominant other, thereby meeting the superceding need of gaining affirmation from an external source. This bargain relationship usually results in the development of ambivalent hostile feelings toward the "dominant other" because the dominant other is unable to adequately supply the depressive's need for acceptance and affirmation. Anger is felt toward the dominant other for the lack of adequate supplies but cannot be openly expressed for fear of losing all source of nurturance and acceptance.

Lastly, Bemporad identified what he termed an "inability to alter the environment". This referred to a "sense of helplessness to alter oneself or one's environment, together with the awareness of a future devoid of meaning and gratification" (p. 229). This results in hopelessness and despair for the individual, which
Bemporad described as the "cardinal features" of depression. This concept has striking similarities to Beck's "negative cognitive triad" and Seligman's "learned helplessness".

Rosenthal and Gudeman (1967) conducted a study which represents one of the early attempts to investigate the relationship of personality and depression with a design which was more systematic than mere subjective clinical observation. One hundred acutely depressed women were assessed on eight personality dimensions, based on the patients' self-descriptions. The personality dimensions assessed were hysterical, obsessional, depressive, cyclothymic, oral, schizoid traits, emotional reactivity, and an overall estimation of premorbid personality pathology. Patients' ratings on these personality dimensions were compared to factor scores of endogenous depression.

High scores on endogenous depression were found to be most strongly related to obsessive and depressive traits. Other relationships were not significant.

This apparent relationship between obsessive traits and depression is consistent with an observation made by Chodoff (1973). Chodoff described "considerable consensus" in the literature regarding the predisposing role of obsessional traits to depression. However, Chodoff cautions the reader that the wide acceptance of this relationship rests on relatively few studies, most of which occurred in the 1930's and may be subject to serious methodological questions. He suggested that obsessional traits needed better definition and their relationship to depression needed further study.
Hegnell in 1966 (cited in Metcalfe, 1968, p. 101) attempted what must be granted as the ideal procedure for assessing premorbid personality, a prospective study. In his study, the entire population of a region in southern Sweden was interviewed in 1947, and again in 1957, to determine whether a relationship could be shown between personality traits identified at the first interview and the occurrence of mental illness a decade later.

However, even with this prospective design, little was found. Metcalfe reported that an association was found between physical complaints of headaches and dizziness with subsequent mental illness. However, nothing was found in relation to depression alone.

Subsequent investigations have generally studied the patient's personality after recovery from depressive illness. In making inferences regarding premorbid personality, these studies assume that when symptoms have abated, the patterns of the premorbid personality reemerge.

Metcalfe (1968) conducted an investigation of the personality of recovered depressed patients. The Maudsley Personality Inventory (MPI) was used to assess personality. The MPI consists of 24 questions which form a Neuroticism scale and 24 questions which form an Extraversion scale. Metcalfe used only the Neuroticism scale in this research.

The subjects, a group of depressed female inpatients, were tested on admission to the hospital and also at the time of their recovery immediately before discharge. The responses of the depressed women were compared to a sample of "normal" subjects.
Metcalfe found that total Neuroticism scores of depressives and normals did not differ significantly. Two groups of individual questions from the Neuroticism scale did, however, distinguish the two populations. Depressive women showed significantly higher scores on questions indicative of worry, repetitive thinking, and tension. The depressed group scored lower on questions related to daydreaming and variable moods. The pattern of responding for the depressed group and the differences from normals were present for both "ill" and "recovered" patients.

Based on these findings, Metcalfe proposed that depressives may be distinguished by a "worrying, tense attitude to life, a denial of fantasy and imagination, and a rigid, limited, habit-bound personality" (p. 103).

Metcalfe characterized these traits as indicative of a "lack of resilience" and suggested that the significant difference in the depressive individual was not the tendency to become depressed more easily but that "he has not within him the means of recovering his mental balance after a depression" (p. 103).

A similar study was conducted by Julian, Metcalfe, and Coppen (1969). The MPI was given to female patients after they had recovered from depressive illness. The results were compared with inventories completed by a group of "normal" women. Again, although the overall scores on Neuroticism were not significantly different between the two groups, individual items showed significant differences between groups.
Recovered depressives displayed a more "rigid neuroticism" and a tendency to "competitive worrying" in comparison to normals. In a follow-up one year later, these patterns and the differences between the groups endured. The investigators interpreted these results as support for their thesis that a tendency toward rigidity versus versatility, or a lack of resilience may be associated with an individual's vulnerability to depressive illness.

The "rigid neuroticism" and "lack of resilience" described by Metcalfe appear to be very similar to the "obsessional personality" of psychoanalytic and psychodynamic writers. Consequently, these findings also appear to offer some support for the hypothesis of a relationship between obsessional traits and depressive illness suggested by Rosenthal and Gudeman (1967).

Chodoff (1973) reports a description of the obsessional personality given by A. P. Noyes in a 1939 text, *Modern Clinical Psychiatry*. Noyes (cited in Metcalfe, 1973) described the obsessive personality as:

An inhibited type of individual with a tendency to be quiet, unobtrusive, serious, chronically worrisome, intolerant, reticent, sensitive, scrupulously honest, frugal, even penurious, stubborn, of stern unbending moral code, lacking humor, overconscientious, and given to self-punishment. Often his interests have been narrow, his habits stereotyped, he has cared little for diversion, has avoided pleasure and has but few close friends. (pp. 197-198)

The theme of repetitive worry and rigid patterns of behavior are prominent in the picture drawn by Noyes.

Kendell and Discipio (1970) investigated the relationship of obsessional personality with depressive illness. They administered
the Leyton Obsessional Inventory, an inventory designed to measure both obsessional symptoms and obsessional personality traits, to 92 inpatients suffering with either "endogenous" or "reactive" depression. Patients were tested following admission and immediately prior to discharge to obtain measures during acute and recovered stages of their illness.

Results showed that depressives obtained significantly higher scores than normals both when depressed and recovered. The depth of depression was more important in relation to obsessional symptoms than was the type of depression. Obsessional symptoms were equally common in "endogenous" and "reactive" depressions. Obsessional symptoms were much more extensive and more severe in deep depression than in mild depression. Obsessional symptoms in patients who were experiencing manic episodes, however, were rare.

Kendell and Discipio concluded that their findings supported the thesis that obsessive-compulsive personality types are particularly prone to depression. Their findings suggest that this is true for both "endogenous" and "reactive" depression. The positive relationship between the depth of depression and the prevalence and severity of obsessional symptoms offers support for the concept that obsessional patterns of thinking and interacting are operative in the process of many depressions. The pre-existing obsessional traits appear to be exaggerated during depression and in proportion to the severity of the depression.

Altman and Wittenborn (1980) conducted a study of depression-prone personality in women. Their hypothesis was that women who had
been depressed had personalities different from those who had not. They assessed personality with a 134-item self-descriptive questionnaire which reflected characteristics of the depressive personality offered by writers ranging from Freud, Fromm-Reichmann, to Bibring and Beck.

The questionnaire was administered to 88 women who had been hospitalized with a diagnosis of depression. All the women had been discharged from the hospital for at least one month. Most, 96 percent, had been out for more than three months. The control group, which was also assessed, consisted of an identical number of paid volunteers with no psychiatric history or current symptoms of depression.

An analysis of the items that discriminated between the two groups revealed five factors which distinguished the personalities of the formerly depressed group. Those five factors were labelled: low self-esteem, helplessness, unhappy pessimistic outlook, narcissistic vulnerability, and low competence.

Factor I, "low self-esteem" involves feeling unworthy of praise, comparing oneself unfavorably with others, keeping anger to oneself, and being persistently anxious.

Factor II, "helplessness" refers to a preoccupation with failure and a lack of confidence in one's ability to perform in competitive and job-related situations.

Factor III, "pessimistic outlook" involves feelings that one's family is unsympathetic, that things don't work out for the best, and that the future will not be better.
Factor IV, "narcissistic vulnerability" refers to having one's feelings easily hurt, crying easily, being sensitive to criticism, wanting sympathy and being worried about what others think of oneself.

Factor V, "low competence" implies difficulty with decision-making, feeling less smart than others, and not trying hard enough to achieve.

The authors concluded that some of the personality factors which distinguished the formerly depressed group were consistent with some of the conceptualizations of early writers. They suggested that the "helplessness" and "crippling loss of self-esteem" described by Bibring (1952) was essentially the same as the cluster of traits in Factor I.

Beck (1967a, 1967b) emphasized helplessness and negative cognitions in his cognitive approach. Seligman (1975) built his model of depression around the concept of "learned helplessness". The "preoccupation with failure" of Factor II and "pessimistic outlook" of Factor III involve traits very similar to the concepts of both Beck and Seligman.

Because their study identified several factors in the personalities of formerly depressed subjects, Altmann and Wittenborn (1980) granted that "the depressive predisposition does not appear to be a monolithic quality" (p. 307). More than one personality pattern may place one at risk for depression. The authors maintained that their findings did "attest to the pertinence of personality in depression" (p. 307).
Cognitive theorists have attempted to operationalize what other theorists have called the "personality factors" associated with depression. Questionnaires and rating scales developed to measure constructs associated with cognitive theories of depression have included Rotter's (1966) Locus of Control Scale, Jones' (1968) Irrational Beliefs Test, Beck's (1974) Hopelessness Scale, and Krantz and Hammens' (1979) Questionaire for Depressive Distortion.

Cognitively-oriented investigators have identified and attempted to measure a number of thought patterns believed to be associated with depression.

Beck (1967a, 1967b, 1976) has identified negative expectancies about the self, the world, and the future; a negative cognitive triad. He has proposed that this cognitive pattern leads to depression.

Seligman made some reformulations of his original learned helplessness model (Abramson, Seligman, and Teasdale, 1978), introducing the concept of attributional style. This model proposed that some individuals are prone to depression because they tend to attribute undesirable or negative events to internal, stable and global causes, a cognitive style which results in lowered self-esteem and helplessness. The attribution reformulation also suggests that in addition to believing that bad events are somehow always their fault, depression-prone individuals attribute desirable or positive events to external, unstable and specific causes. In other words, they don't know why positive events have occurred but believe they had nothing to do with it.
The "perceived locus of control" construct as measured by Rotter's (1966) Locus of Control Scale has similarities to the attribution model proposed by Seligman and his colleagues. The locus of control model suggests that the individual's perception of the location of control of reinforcements is a powerful factor in the development of depression.

"Externals" who perceive reinforcements as being externally controlled are more prone to depression than "Internals" who believe they have control over reinforcements.

The thrust of the cognitively-oriented research has been to propose that not only do these depressive cognitive styles characterize the thinking of depressive, but also that they may be stable styles which exist premorbidly and are causally related to the development of depression. Results from specific studies have offered considerable support for the premise that certain cognitive styles are more prominent in depressed than non-depressed individuals. The premise that these styles are stable and create a predisposition to depression has not generally been well supported.

Beck's premise that depressives distort perceptions of self, the past, and the future has been examined in several studies. Hammen and Krantz (1976) used self-esteem ratings to assess the self-evaluative cognitions of depressed women. They found that depressed women were significantly more self-critical than non-depressed women, supporting the premise that negative self-perceptions are associated with depression.
Nelson (1977) investigated the premise that depressed persons distort environmental input in a negative way. Using the Irrational Beliefs Test to assess core irrational beliefs, Nelson found that depression was associated with obsessive worry about misfortunes in the future and a belief that the influences of the past could not be overcome. These patterns appear associated both to the obsessional traits discussed by Rosenthal et al. (1967) and the helplessness constructs of Beck and Seligman.

Krantz and Hammen (1979) developed a procedure for assessing "depressive distortion". They found a consistent relationship between the severity of depression and the degree of depressive distortion, supporting Beck's hypothesis of a characteristic cognitive bias in depression.

In similar fashion, a number of studies have lent support to the concept that there is a characteristic attributional style of perceived locus of control bias present in depression. Abramowitz (1969) and O'Leary, Donovan and Hague (1974) found a relationship between external locus of control of reinforcement and self-report measures of depression. Kuiper (1978) and Rizley (1978) found a relationship between internal attribution of failure and depression. Harvey (1981) found a relationship between internal attribution of negative events and external attribution of positive events with depression.

Lewinsohn, Steinmetz, Larson and Franklin (1981) have conducted one of the most authoritative investigations of depression-related cognitions. Lewinsohn and his colleagues used a longitudinal design to investigate specifically whether "cognitions known to be correlated
with depression precede, accompany or follow an episode of depression" (p. 213). A sample of 998 residents from the communities of Eugene and Springfield, Oregon, were assessed with an extensive 938-item questionnaire and with instruments designed to measure locus of control, expectancies of positive and negative outcomes, irrational beliefs, and perception of control and self-esteem. One year later, subjects were seen for a diagnostic interview to assess episodes of psychopathology at or since the time of the first assessment and to identify any history of prior psychiatric illness.

Results supported the findings of other investigators that depressives, when they are depressed, have higher expectancies for negative events and lower expectancies for positive events, display certain irrational beliefs, and have low self-esteem.

The most important aspect of the results, however, was the finding that persons who became depressed during the course of the study, were not characterized by many of these patterns of negative thinking when they were tested at the beginning of the study. Lewinsohn et al. (1981) stated:

Prior to becoming depressed, these future depressives did not subscribe to irrational beliefs, they did not have lower expectancies for positive outcomes or higher expectancies for negative outcomes, they did not attribute success experiences to external causes and failure experiences to internal causes, nor did they perceive themselves as having less control over the events in their lives. (p. 218)

Also, significantly, individuals who had a previous history of depression did not differ from controls who had never been depressed in any of the cognitive measures.
Lewinsohn's findings failed to support the premise subscribed to by several other writers, that negative cognitive patterns and biases in attributional style are relatively stable and predispose the individual to depression. Lewinsohn concluded there is more support for the concept that "people change their expectancies and subscribe to irrational beliefs as a result of being depressed, and these cognitive changes reverse themselves as the individual recovers" (p. 218).

Lewinsohn et al. also noted, however, that these results do not rule out the possibility that there may be characteristics which distinguish persons who are at risk for depression, but suggested that further research is necessary to identify such characteristics.

The preceding section has provided a review of contemporary research into the relationship of personality to depression. The methodological problems of distinguishing stable traits from transient symptom states in this research continue to plague investigators. Most often, studies of formerly ill patients are used to make inferences regarding premorbid personality traits.

Investigators who have relied on clinical observation as a method have emphasized pathological dependency and obsessive-compulsive patterns as prominent features of the depression-prone personality.

Studies using more objective methods of measurement have suggested that such characteristics as rigid neuroticism, lack of resilience, lowered self-esteem, helplessness, negative expectations, and biases in attributional style predispose an individual to
depression. Although there is strong support in the literature for the relationship of these "states" to depression, the support for their status as "traits" which are antecedent to and predispose one to depression is weak.

Definition of Depression

Before proceeding with an investigation of the relationship of personality and depression, it is necessary to clearly define depression. Metcalfe (1968) pointed out that investigators for some time have tended to view various forms of depressive illness as belonging to the same category, a tendency reflective of the early influence of Kraepelin's assertion that all the mood disorders belonged to the large category of manic-depressive disease. This assumption is no longer accepted by most authorities.

Klerman (1973) also argues that depression cannot be understood properly by viewing it as a unitary phenomenon. The study of depression requires recognition of its pluralistic nature. He points out that historically, discussions of depressive personality have presumed a unitary approach and have tried to fit all psychodynamic data into a single formulation. He maintains that this tendency to discuss depressives as a homogeneous group is openly contrary to findings of clinical and psychobiological research which has built a strong basis for the pluralistic nature of clinical conditions of affective disorders. He goes on to say that if progress is to be made in identifying the relationships between personality styles and depression, "investigators and theorists must specify which form of clinical
depression they are attempting to relate to which specific personality patterns" (p. 229).

Two important distinctions regarding types of depression frequently referred to in the literature are secondary and primary depression, and bipolar and unipolar depression. Robins and Guze (1970), and Feighner, Robins, Guze, Woodruff, Winokur, and Munoz (1972) distinguish between secondary and primary depression. Secondary depression refers to the generally recognized signs and symptoms of clinical depression such as dysphoric mood, anorexia and hyperphagia, and sleep disturbance, associated with or superimposed upon a preexisting nonaffective psychiatric illness or occurring in conjunction with medical or surgical illness. The duration of symptoms must be at least one month. Primary depression, on the other hand, refers to the same combination of signs and symptoms and the same requirement for duration of symptoms; however, the symptoms are unrelated to a nonaffective psychiatric disorder.

Akiskal and McKinney (1975) report that recent biochemical research has provided support for the distinction between primary and secondary depression. They also note that this system of classification uses operationally defined clinical criteria and avoids the controversy surrounding the etiological issues involved in the endogenous/exogenous system of classification. The distinction between primary and secondary depression is commonly recognized by researchers such as Donnelly (1973, 1975, 1976), and Akiskal and McKinney (1975). Secondary depression, because it occurs secondarily to a preexisting nonaffective disorder, can be expected to differ
from a primary depression in terms of predisposing variables; hence the need for such a distinction in an investigation of predisposing personality traits.

The distinction between secondary and primary depression is also recognized in the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM III), American Psychiatric Association (1980). One of the essential features of the affective disorders "is a disturbance of mood, accompanied by a full or partial manic or depressive syndrome, that is not due to any other physical or mental disorder" (p. 205).

Many investigators have stressed the need to distinguish between unipolar depression and bipolar disorder in any study of the relationship of personality and depression. The criteria distinguishing the two categories is widely agreed to be a mood disturbance which includes or has included the presence of a manic episode in bipolar disorder, and the absence of any history of manic episodes in unipolar depression.

Metcalfe (1968) argued that these two categories must be distinguished in any research into personality traits of depressives. Chodoff (1973) indicated that the studies compiled at that time agree in "finding rather minor degrees of neuroticism in the unipolars while the bipolars have been found to be syntonic or normal" (p. 200).

Several studies have suggested significant differences in the basic personality patterns associated with unipolar and bipolar depressive illness. Donnelly and Murphy (1973) compared Minnesota Multiphasic Personality Inventory (MMPI) results of unipolar and
bipolar primary depressives. The measures were taken during an acute symptom phase. Although objectively rated depression did not differ significantly between the two groups, there were significant differences between their MMPI profiles. The unipolar group tended to score highest on scales D and Pt of the MMPI while the bipolar subjects had significantly lower scores on these two scales. Bipolars, in fact, did not exhibit any particular code profile pattern. Bipolar subjects tended to be a more heterogeneous group and generally appeared less neurotic.

Hirschfield and Klerman (1979) compared unipolar and bipolar patients with normal subjects using selected scales from four personality and temperament inventories. Subjects were tested after manifest symptoms had abated and were instructed to respond according to their premorbid personality. The investigators found that unipolar patients demonstrated more neuroticism, introversion and obsessionality than bipolar patients and normal subjects. Bipolar patients differed from normal subjects only on the dimension of obsessionality.

Donnelly, Murphy, and Scott (1975) administered the Rorschach to bipolar and unipolar patients during an acute symptom phase. The two groups displayed different perceptual patterns of responding to the Rorschach. Bipolar subjects tended to respond to the more objective aspects of the ink blots, while unipolar subjects pursued a more subjective approach. The perceptual approach of bipolars was characterized by a lack of neurotic involvement, anxiety, and depressive content. Unipolar responses in contrast, disclosed considerable
neurotic concerns.

Donnelly, Murphy, and Goodwin (1976) conducted a study which was longitudinal in nature, and found results that differed with the conclusions of the studies cited above. In this investigation, the MMPI was used to assess differences between unipolar and bipolar groups; however, measures were taken both during acute and remission phases of the patients' illnesses. Relatively normal profiles for bipolars and abnormal profiles for unipolars were again evident during acute symptom phases. However, when measured again at a remission phase, these differences between the two groups essentially disappeared.

Donnelly et al. (1976) suggested that the differences between bipolar and unipolar subjects are exclusive to the acute depressive phase of the disorders, bringing into question the argument that distinct premorbid personality styles differentiate between these groups. The investigators suggested that the "attenuation of psychopathology in bipolars may represent the successful denial of conflict in pathology by activity or by other-directed behavior often attributed to manic-depressive patients" (p. 236). They noted that their earlier finding, of a more global perceptual approach to the Rorschach by bipolars during acute symptom phases, was consistent with this inference.

A recent study by Donnelly, Murphy, and Waldman (1980) compared bipolar and unipolar groups once more on the MMPI using 55 additional special scales focused on affective disorders. The results suggested that bipolar patients may attenuate the display of pathology during
acute phases of their illness by use of the defenses of denial and somatization. The investigators suggest that the greater appearance of normalcy displayed on the MMPI by bipolars may really be a product of their effective use of particular defenses.

Recent research and current systems of classification of mental disorders support the premise that depression is not a unitary phenomenon. In an investigation of the relationship of personality to depression, one must identify the type of depression being addressed. Primary depression and secondary depression must be distinguished, especially in any investigation of predisposing personality traits. Because secondary depression is assumed to be related to the presence of a preexisting, nonaffective illness, the premorbid personality traits of individuals so affected could be expected to be different than those of individuals with primary depression.

Findings regarding the differences in personality in relation to unipolar and bipolar affective disorders are mixed. Recent studies have provided evidence that such differences disappear when these two groups are compared after their acute symptoms have abated. Although the findings are mixed at this time, recent studies suggest that clear distinctions in basic personality traits may not exist between unipolar and bipolar patients when the effect of the patients' acute symptom states are sufficiently controlled. Until the nature of the differences between unipolar and bipolar categories is clarified by further research, it would appear important to distinguish between these two categories in a study of the relationship of personality and depression.

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The Assessment of Depression and Personality

Assessment of Depression

A number of instruments designed to objectively assess depression have been developed in recent years. These instruments are of two basic types: observer-rating scales, and self-report measures. Observer-rating scales require assessment of depressive symptoms by someone who observes the patient. Self-report measures ask the patient to report his or her symptoms.

Observer-rating measures have the possible advantage of identifying observations of symptoms of which the patient may be unaware. Self-report measures have the advantage of being more easily and economically administered. One might also argue that patients can more accurately report their symptoms than can observers. Studies by Seitz (1970) and Schnurr, Hoaken, and Jarrett (1976) indicate that depression can be assessed with comparable accuracy using either observer-ratings or patient self-reports.

Schnurr et al. (1976) compared five depression measures: the Hamilton Rating Scale for Depression, the Wechsler Depression Rating Scale, the MMPI-D Scale, the Beck Depression Inventory, and the Zung Self-Rating Scale. The first two scales are observer-rated, while the latter three are self-report measures. The conclusion reached was that, "All the measures correlated well with one another" (p. 475).

Seitz (1970) compared four self-report measures: the Zung Self-Rating Depression Scale, Miskimin's Self-Goal-Other Discrepancy Scale (MSGO), the D scale of the Minnesota Multiphasic Personality
Inventory (MMPI), and the Beck Depression Inventory. He found that all these inventories generally correlated quite highly with each other.

To facilitate testing of large numbers of subjects, a self-report measure is the preferred type of instrument for assessment of depression in this investigation. The two most widely used self-report measures are probably the Self-Rating Depression Scale (SDS) developed by Zung (1965), and the Beck Depression Inventory (BDI) developed by Beck, Ward, and Mendelson (1961).

The SDS and the BDI are similar in terms of method and time required for administration. Studies have also shown high correlations between the results of the two instruments. Seitz (1970), in a comparison of five depression measures, reported the highest correlation (.83) between the SDS and BDI. Meites, Lovallo, and Pishkin (1980) reported that the BDI and SDS appeared to yield similar factors when subjected to factor analysis.

The primary difference between the BDI and the SDS appears to lie in the dimension used to assess depression. Although both measure the individual's subjective experience of depression, the SDS requires a judgment of the frequency of depressive symptoms, whereas the BDI requires a judgment of the intensity or severity of depressive symptoms. Meites et al. (1980) also noted that the SDS, in comparison with the BDI, tended to fail to identify depressed patients who presented primarily with somatic complaints.

Based on the studies reviewed, it appears that either the SDS or the BDI would provide an adequate method for the assessment of
depression in this investigation. In view of its extensive use in previous studies with clinical populations and its possible superiority in identifying depression masked by somatic complaints, the BDI appears to be the preferred instrument for assessing depression.

Assessment of Personality

Several studies have investigated the relationship between specific, isolated personality traits and depression. The specific personality features studied have included hysterical traits, obsessional traits, hostility and neuroticism. Many standardized instruments exist which are designed to measure such singular, specific features of personality.

The purpose of this investigation is not to focus on a singular personality trait, but rather to study the relationship of a broad range of personality styles or traits to depression. The number of objective personality instruments available to assess a broad range of personality features with a clinical population is rather limited. This researcher's review of the studies in personality and depression suggests that primarily three instruments have been used to measure personality in a broader and more comprehensive manner. Those instruments are the Minnesota Multiphasic Personality Inventory (MMPI), the Maudsley Personality Inventory (MPI), and the Eysenck Personality Inventory (EPI). The following section will review the suitability of these instruments for the assessment of personality in this investigation. An additional instrument which has recently been developed by Millon (1983), the Millon Clinical Multiaxial
Inventory (MCMI), will also be reviewed.

The MMPI (Dahlstrom, Welsh, and Dahlstrom, 1972) is likely one of the most widely used and extensively researched objective personality measures.

Many studies have investigated the relationship between MMPI measures and depression. Rhodes and Rice (1977) noted that several studies have found a relationship between depression and the MMPI scales associated with anxiety (Psychasthenia), somatic concerns (Hypochondriasis), repression and denial (Hysteria), and most notably, the Depression scale. Silver, Isaacs, and Mansky (1981) found a strong relationship between depression and the Depression, Psychasthenia, and Schizophrenia scales of the MMPI.

Although it is one of the most established objective personality measures available, there are disadvantages in considering the MMPI for the purpose of personality assessment in this investigation. The MMPI has a large number of items and requires considerable time to administer. In view of its length, it may well be more difficult to obtain complete and valid test protocols from voluntary subjects. An even more important consideration is the fact that the MMPI was not intended to specifically measure stable, premorbid personality traits independent of acute symptoms. Rather, its original purpose was to classify psychiatric patients according to diagnostic categories. Several of the MMPI scales are recognized to be clearly related to levels of symptom severity. The sensitivity of the MMPI to symptom severity has been demonstrated in studies by Donnelly and Murphy (1973), Donnelly, Murphy, and Goodwin (1976), and Donnelly,
Because a primary goal of this investigation is to assess stable premorbid personality traits in a clinical population, this characteristic of the MMPI detracts from its value in addressing the research questions in this investigation.

The MPI (Metcalfe and Goldman, 1965) and the EPI (Eysenck and Eysenck, 1964) have been used frequently in personality research with psychiatric patients. Kendell and Discipio (1968) noted that the MPI and EPI are basically similar and highly correlated instruments, but describe the EPI as the successor to the MPI. The EPI has the advantages of parallel forms and higher retest reliability. Both instruments provide scores on two basic personality dimensions, a Neuroticism, (N) and an Extraversion (E) scale. The EPI also provides a measure on a Psychoticism (P) scale.

Although the dimensions measured by these instruments were initially described as trait factors (Kendell and Discipio, 1968), subsequent studies have found that the N and E scales tend to have significant relationships to levels of depression. Studies by Metcalfe (1968), Kendell and Discipio (1968), and Julian et al. (1969) have indicated significant differences between patients' scores on the N and E scales when measures made under depressed and recovered conditions were compared. Generally, the studies reviewed have found a direct relationship between depression and Neuroticism and an inverse relationship between depression and Extraversion (Vaz Serra and Pollitt, 1975). Consequently, it does not appear that the MPI or EPI have demonstrated the capacity to measure personality
traits independent of symptom levels. In addition to this limitation, both the MPI and the EPI measure relatively global personality dimensions, whereas the thrust of this investigation is to investigate the relationship of more clinically specific personality traits and their relationship to depression.

The Millon Clinical Multiaxial Inventory (MCMI) (Millon, 1983) is a relatively new objective personality measure. Because of its recent development, the MCMI has not been researched extensively; however, it offers several distinct advantages for personality assessment.

The MCMI is a 175-item, true-false personality inventory designed specifically for use with a clinical population. Test content is geared to an eighth grade reading level. The relatively small number of total items allows the test to be completed by most subjects in 15 to 25 minutes. Because of the relatively brief time required for administration, the problem of eliciting subject participation in the completion of a lengthy instrument may be avoided.

The development of the MCMI by Millon (1983) has been based in a specific theory of personality and psychopathology (Millon, 1969, 1981). Consequently, the scales and profiles measure theory-derived variables. The measures obtained are able to "suggest specific patient diagnoses and clinical dynamics, as well as testable hypotheses about social history and current behavior" (Millon, 1983, p. 1).

In addition to being theory-based, the MCMI scales are coordinated directly with the diagnostic system and categories of the
DSM III. Millon was a member of the task force that developed the DSM III; consequently, the MCMI and the DSM III have a similar conceptual basis and share diagnostic criteria.

This chapter has reviewed the literature regarding the relationship of personality and depression. A historical review of theoretical trends, an overview of contemporary theories, and a review of recent research into personality and depression has been made. Persistent methodological problems have made it difficult to verify a relationship between premorbid personality traits and depression. Although several patterns of behaving and thinking are apparently related to depression, whether they are a cause or effect of depression is open to question. It is hoped that this investigation will provide information which is relevant to that question.
CHAPTER III

METHOD

Population and Sample

Population

The population for this study was defined as all patients admitted to Ward Two South of the Mid Missouri Mental Health Center, between February 17, 1982, and August 31, 1982. The population was comprised of adult men and women who were 18 years of age or older, were generally of average intelligence, and represented a cross-section of the immediate urban community and the surrounding rural areas. The Mid Missouri Mental Health Center (MMMHC) is a regional center and as such, serves a large geographical area in central Missouri. That region includes the city of Columbia, with a population of approximately 60,000. The region includes a large population of professionals and a major university, as well as many small towns and villages and an extensive rural area. As a result, the population for this study was drawn from a wide range of educational and socioeconomic backgrounds.

MMMHC is one of three regional mental health centers serving the state of Missouri. The center provides outpatient and inpatient mental health services for children, adolescents, and adults. Nine community clinics are located throughout the region to provide readily accessible outpatient services. The community clinics refer patients
to the regional center when services needed exceeded their resources. Other referral sources include schools, law enforcement agencies, clergy, private physicians or mental health professionals, other hospitals, patients' families or the patients themselves.

Adult inpatient services are provided in two inpatient care units, each containing 20 beds: Wards Two North and Two South. Both units serve the same population and are designed to provide primarily acute, short term care for both men and women. Patients in need of long term hospitalization are admitted to other psychiatric hospitals in the state system. On some occasions, patients are admitted to one of the acute care units and subsequently transferred to a long term care facility when it is determined that long term care is needed.

Sample

All patients admitted to Ward Two South were potential subjects for this study. After admission and completion of a diagnostic and treatment planning staffing, patients were contacted by the researcher. The nature and purpose of the study were described and patients were asked to participate by agreeing to complete the criteria instruments. Patients were informed that their participation was voluntary, that feedback regarding the test results would be available and that their participation would not affect their treatment or length of inpatient stay. Subjects were also informed that they would be asked to complete the tests again immediately before their discharge.
Based on criteria described by Millon (1983), patients with a diagnosis of organic brain syndrome were excluded from the study. Based on studies cited earlier which question a unitary concept of depression and describe bipolar and unipolar depression as distinct disorders, patients with a diagnosis of bipolar disorder were excluded from the study. Consistent with Millon's (1983) criteria, patients who were extremely fatigued, apprehensive, actively confused, intoxicated, or extremely sedated were not contacted until those symptoms had abated. In some cases, those patients later agreed to participate in the study.

A number of patients were, of course, excluded because they refused to participate in the study. Additionally, a large number of patients (33) completed the criteria instruments at the admission phase but were not tested prior to discharge. This occurred for several reasons. In a few cases, patients refused to complete the instruments a second time. Additionally, some patients who had been admitted voluntarily were discharged unexpectedly against medical advice and could not be tested before discharge. In several instances, because of problems with communication among the numerous staff members involved in discharge planning, patients were discharged before the investigator was informed and discharge testing could be completed. Patients who did not complete the criteria instruments prior to discharge were excluded from the study. Finally, protocols of four patients were excluded because results generated on one of the administrations of the MCMI were interpreted by the automated report as unreliable.
The resulting sample consisted of 34 subjects: 14 male and 20 females. Twenty-three subjects were classified as unipolar depressed. Eleven were classified as non-depressed. The mean age of the males was 34.0 years; the mean age of the females was 33.7 years. Overall mean age was 33.8 years. The mean educational level was 11.4 years for males and 10.9 years for females. Overall mean educational level was 11.1 years. Mean length of hospitalization was 19.4 days for males and 20.3 days for females. Overall mean length of hospitalization was 19.9 days.

Diagnostic Conditions

For the purposes of this study, the term "depression" refers to primary as opposed to secondary depression and to unipolar as opposed to bipolar disturbance of mood.

A primary depression was defined as a disturbance of mood which is not due to any other physical or mental disorder. Unipolar depression was defined as a mood disturbance in which there is no current manifestation or history of manic or hypomanic episodes. Symptoms exist exclusively on the depressive end of the continuum. As such, the term depression as used in this study encompassed the following DSM III diagnoses: Major Depression, Dysthymic Disorder, and Adjustment Disorder with Depressed Mood.

Criteria Instruments

The following instruments were used for the assessment of depression and personality.
Beck Depression Inventory

The Beck Depression Inventory (BDI) (Beck et al., 1961) is one of the most widely used self-report depression inventories. It has been shown to correlate well with other depression inventories and with clinical ratings of depression. It can be simply and quickly administered and lends itself well to investigations in which many administrations must be completed. The inventory may be administered by an interviewer with minimal training or may be self-administered with patients who have adequate reading skills. The BDI yields a numerical score, facilitating comparison with other quantitative data.

The BDI was designed to measure the depth or severity of depression. Its developers have attempted to include all the symptoms integral to the depressive syndrome and to grade the intensity of the symptoms.

The inventory consists of sets of statements related to 21 categories of symptoms and attitudes which reflect the criteria generally used in making clinical judgments regarding the intensity of depression. The intensity of the manifestation of each symptom is measured by asking the patient to endorse one of four statements ranked to represent increasing levels of symptom severity, from neutral to maximum severity. Numerical values ranging from zero to three are assigned each statement within a category to indicate the degree of severity. A total score is obtained by summing the numerical score of each symptom category.
Beck (1967a) reports that the items for the BDI were chosen on the basis of their relationship to the overt behavioral signs of depression. Observations were made of the characteristic attitudes and symptoms of depressed patients. Those which were specific for depression and which were consistent with the psychiatric literature were selected. The selection of items does not reflect any theoretical orientation regarding the etiology or processes of depression.

Initial reliability of the BDI ratings of intensity of depression was evaluated by comparing patients' BDI scores with ratings made by psychiatrists (Beck and Beamesderfer, 1974). A sample of 409 patients was drawn from the psychiatric admissions to the outpatient and inpatient departments of two Philadelphia hospitals. Each patient was given the BDI and was assessed in a psychiatric interview. One half of the patients were tested with the BDI before being interviewed, and one half were tested following the interview. The psychiatric rating interviews were structured using specific indices for making a judgment regarding the depth of depression. A four point scale ranging from none, to mild, moderate, and severe was used to grade the severity of the symptoms in order to increase uniformity among raters. A global rating of depth of depression was also made without reference to the numerical scales. Each patient was seen by two psychiatrists to provide independent ratings of the depth of depression. Comparison of results of ratings among psychiatrists indicated close agreement on ratings in 97 percent of the cases.

Reliability of the BDI was evaluated further by two methods (Beck et al., 1974). Using 200 patient protocols, the score for

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each of the 21 categories was compared to the patient's total score. All categories showed a significant positive relationship (p < .001) to total score, indicating a high level of internal consistency.

Next, 97 cases were selected to assess split-half reliability. With a Spearman Brown correction for attenuation, this analysis yielded a correlation coefficient of .93.

Concurrent validity was evaluated by examining how well results of the BDI correlated with clinical ratings and other measures of depression (Beck et al., 1974). Beck reports correlations ranging from .65 to .73 in studies which compared the BDI to clinicians' ratings. Several studies have compared the BDI with other standardized measures of depression. Hamilton (cited in Beck et al., 1974, p. 158) found a correlation coefficient of .75 between the BDI and his own Hamilton Rating Scale. Seitz (1970) reported a correlation of .83 between the BDI and the Zung Self-Rating Depression Scale. Seitz, in the same study, found a correlation of .58 between the BDI and the D scale of the MMPI. Although this is lower than the correlation with other scales, it is significant at the .01 level.

Beck et al. (1974) evaluated construct validity of the BDI by examining the ability of the test to make predictions based on the construct it was designed to measure, in this case, depression. Beck also reported several studies confirming a significant relationship between depression scores as measured by the BDI and variables which were predicted to co-exist with depression, based on prevalent theories of depression. BDI scores were found to be related to "masochistic" dreams, negative self-concept, identification with
"the loser" in picture stories, a prior history of childhood bereavement, and a tendency to be excessively pessimistic after experimentally induced "failure" at a task. Especially interesting in relation to classical psychoanalytic theory about the role of hostility in depression, is the report by Gottschalk (cited in Beck et al., 1974, p. 160). Gottschalk reported a significant positive relationship between scores on the BDI and scores on a "hostility-inward" scale. He found a negative relationship between BDI scores and scores on a "hostility-outward" scale. This is consistent with the "aggression turned inward" hypothesis of psychoanalytic theory.

Beck et al. (1974) also examined the relationship between BDI scores and extraneous variables. A significant relationship was found between BDI scores and sex. Females tended to score higher. Beck reported, however, that clinician's ratings of depth of depression also correlated positively with female sex. This relationship did not appear to be an artifact. Correlations between depression scores and race and age were negligible. A significant correlation between BDI scores and educational level was found. Patients with lower educational levels tended to produce higher BDI scores. This relationship was not found with clinicians' depth of depression ratings. Beck suggested that this relationship could be the result of a response set among less educated patients.

Several factor analytic studies of the BDI have been conducted. Pichot and Lamperiere (cited in Beck et al., 1974, p. 162) reported four factors: vital (physiological signs) depression, self-debasement
pessimism-suicide, and indecision-inhibition. Beck's own study (Beck et al., 1974) yielded three factors: negative view of self and future, physiological signs, and physical withdrawal (work inhibition, fatigability, and somatic preoccupation). Beck reported that no arbitrary cut-off scores on the BDI can be established for all purposes. The cut-off scores must be selected based on the characteristics of the patient sample and the purpose for which the measure is being used. The clinician or investigator must decide how many false-positives and/or false-negatives are acceptable. Beck suggested that for research purposes, a high cutting score of 21 should be used to minimize false-positives and obtain a relatively pure group of depressed patients. As a screening device to detect depression and to avoid false-negatives, a cut-off score of 13 was recommended. Very few depressed patients will "be missed" with this cutting point.

Although not necessarily appropriate for research purposes, Burns and Beck (1978) reported normative data establishing the following cut-off scores for the BDI: zero-nine, minimal or no depression; 10-14, borderline depression; 15-20, mild depression; 21-30, moderate depression; 31-40, severe depression; 41-63, very severe depression.

**Millon Clinical Multiaxial Inventory**

The Millon Clinical Multiaxial Inventory (MCMI) (Millon, 1983) is an objective personality measure which includes scales measuring a broad range of basic personality styles. These scales are intended to measure characterological traits independent of clinical symptoms.
Although the MCMI was developed only recently and has not been extensively researched, the fact that it provides scales intended to measure characterological traits in a clinical population makes it uniquely suited to the investigation of the research question involved in this study.

The MCMI is an objective personality inventory which yields 20 scales. The 20 scales of the MCMI were developed to reflect the distinction made by the DSM III between Axis I and Axis II categories. Eleven scales (1-8) and S, C, and P measure the more enduring personality characteristics of patients. These scales relate to DSM III Axis II categories. The remaining nine scales measure acute clinical disorders linked to Axis I categories. Thus, the MCMI uses separate scale types to distinguish more enduring personality traits from acute symptom disorders. According to Millon (1983), this enables the MCMI to assess the premorbid characterological pattern of a patient independent of the degree of pathology.

The 11 "Axis II" scales are divided into two categories. The first group consists of scales 1-8, which measure the pattern of traits comprising the basic personality structure. The second group, scales S, C, and P measure a greater level of severity, or decompensation of that basic structure. Likewise, the remaining nine "Axis I" scales are of two types. Moderately severe clinical syndromes are measured by scales A, H, N, D, B, and T. More severe syndromes of a "psychotic" nature are measured by scales SS, CC, and PP.
In the development of the MCMI, Millon followed a procedure in which items and scales were increasingly refined and screened by being examined in three sequential component phases: a substantive, structural, and external phase, as suggested by Jackson and Loevinger (cited in Millon, 1983, p. 31). In the first "theoretical-substantive" phase (Millon, 1983), the task was to examine the degree to which the content of the test items was related to and based on an explicit theoretical framework. In the second phase which Millon called "internal-structural", items were evaluated to determine how well they conformed to the instrument's model. In order to survive this phase, MCMI items had to maximize scale homogeneity, display overlap with other theoretically congruent scales, have acceptable levels of endorsement frequency, and be stable over time. The third phase which involves "external-criterion" validation, included only those items which had met the requirements of the two previous validation procedures. This phase involved an examination of the relationship between each test scale and several external measures of the trait or syndrome supposedly measured by that scale. This was accomplished by correlating results obtained on preliminary forms of the test with relevant clinical behaviors (Millon, 1983).

Administration of the MCMI follows the format typical for self-report inventories. Patients select a true or false response for each of the 175 items. Patients should be over 17 years of age with at least eighth grade reading skills. The test was developed solely for a clinical population, that is, persons who are involved
in a program of assessment, counseling or therapy related to mental health. Millon (1983) cautions that subjects should not be tested if they are extremely fatigued or apprehensive, in acute pain, in a confused or psychotic state, suffering from an acute organic brain disorder, intoxicated or markedly sedated.

The MCMI is computer scored. A computer-generated Profile Report and a more extensive automated Interpretive Report are available.

The normative population of the MCMI consisted of several groups of non-clinical subjects and clinical patients who were involved in psychological assessment or psychotherapy. Two hundred and ninety-seven non-clinical subjects were selected from various settings. More than 1,800 clinical subjects were drawn from 108 hospitals and outpatient centers. More than 200 clinicians from the United States and Great Britain provided patient test protocols.

Subsequent normative data was gathered in 1981 from more than 43,000 patients. This population consisted of 46 percent males and 54 percent females. Eighty-four percent were outpatients and 16 percent inpatients.

The MCMI uses base-rate scores rather than standard scores. Millon (1983) described this as a more appropriate method in view of the purpose of the MCMI. Standard scores assume a normal distribution of the dimensions being measured. However, the dimensions of personality type and clinical syndrome measured by the MCMI cannot be assumed to be normally distributed in a patient population. Also, base-rate scores are more appropriate because
the purpose of the MCMI is not to establish a patient's location on a frequency distribution, but rather, to establish whether a patient is a member of a particular diagnostic entity.

Base-rate scores are obtained by transforming raw scores. That transformation is accomplished based on known data regarding the prevalence of personality type and syndromes and by using cutting lines designed to optimize correct diagnostic classification.

Data regarding prevalence of each MCMI personality and syndrome scale were gathered in two external validation studies involving more than 970 patients. In these studies, clinicians were asked to judge the fit of clinical descriptions associated with the MCMI scales to their patients. The data from these studies were used to establish arbitrarily two cutting lines for each scale. A base-rate score of 74 was set as the cutting line above which scale percentages corresponded to the clinically judged prevalence rate for "presence" of the dimension measured by the scale. In similar fashion, a base-rate score of 84 was set as the cutting line above which scale percentages corresponded to the clinically judged prevalence rate for the "highest" personality or symptom feature (Millon, 1983). Percentages at, above, or below the cutting line vary depending on the personality type or symptom disorder. Base-rate scores were established so that the frequency of MCMI single-scale diagnoses and profile patterns corresponded as much as possible to the prevalence base-rates established by clinical judgment in the external validation studies.

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Millon (1983) reported test-retest reliability on two separate clinical populations. Both groups were involved in active psychotherapy, possibly contaminating reliability measures due to treatment effects. The first group consisted of 59 patients who were tested twice with an average interval of one week between testing. The second group of 86 patients were tested with an interval between testings of approximately five weeks. Reported reliability coefficients for the first group were generally in the mid-eighties, which Millon describes as an acceptable level for a population of this kind. The coefficients for the second group tested at five week intervals were somewhat lower, probably reflecting the influence of treatment effects occurring during the increased time interval between testing. Reliability coefficients were highest for the scales measuring personality patterns, most measuring in the .80 range. Pathological personality scale reliabilities were lower, averaging in the high .70 range. Clinical syndrome scales had the lowest reliabilities, generally in the mid .60 range.

Millon (1983) noted that these reliability trends among scale types were consistent with the construction of the scales. The basic personality patterns would be expected to be most stable. The pathological personality scales and especially the clinical syndrome scales could be expected to be less stable, representing more transient constructs and being more susceptible to changes due to time and in response to therapeutic intervention.

Although the MCMI scales were not intended to be factorially pure, it was expected that scale homogeneity would be relatively
high since the scales were designed to measure diverse symptoms which together represent clear clinical syndromes. Using the Kuder-Richardson Formula 20, Millon (1983) reported a median KR coefficient for all scales of .88 with individual scales ranging from .58 to .95. Millon (1983) stated that "relationship among the scales of a test should follow a pattern that corresponds to the structural features of an instrument's theory" (p. 48).

Structural validity was tested by studying item overlap, scale intercorrelations, and by factor analyses. Millon (1983) reported that the pattern of item-scale overlap conformed closely to the test's underlying theoretical model. Intercorrelations among scales also followed the patterns predicted from the theoretical model. Use of factor analytic procedures yielded four factors. Three of the four factors accounted for 85 percent of the variance. The three major factors were characterized by: depressive and labile emotionality versus emotional restraint and denial; paranoid thinking with grandiosity and hostility; schizoid behavioral detachment versus sociability and self-confidence. Factor four carried a minor portion of the variance. This factor related to social restraint and conformity versus social aggression and rebellious behavior.

In discussing external validity, Millon (1983) stated that correlations between the MCMI and other similar tests are less important than the relationships between the MCMI and relevant non-test, clinical behaviors. Nevertheless, intercorrelational studies were conducted comparing the MCMI with the MMPI (including...
both basic and Wiggins content scales), the Psychological Screening Inventory, and the Symptom Distress Checklist. The major findings of these studies suggest the MCMI had adequate convergent validity with "comparable" instruments.

External validity was examined further by asking 23 clinicians to compare and rate several different automated test interpretations generated by patients who were well known to the clinicians. Interpretations from the Roche Laboratory MMPI system, the Pearson, Swenson MMPI program and the NCS MCMI Interpretive Report were compared. Clinicians rated the test reports based on information provided, descriptive accuracy and report format and utility. Raters judged the Roche MMPI and the MCMI superior to the Pearson, Swenson MMPI. The narrative report format of the MCMI was judged superior to the Roche MMPI. Generally, the MCMI was rated most accurate in terms of personality and interpersonal assessment.

Millon (1981) described his model as a biosocial-learning theory. The model is based on concepts derived from the combination of a few constructs. Eight basic styles of personality are formed logically from a 4 x 2 matrix consisting of two basic dimensions. The two dimensions relate to where and how the individual seeks to satisfy the need to achieve gratification and avoid distress. Source of gratification and instrumental behaviors employed are the central features distinguishing the various personality patterns. A list of the personality scales and their corresponding DSM III classification follows:
<table>
<thead>
<tr>
<th>MCMI Scales</th>
<th>Personality Pattern</th>
<th>MCMI Classification</th>
<th>DSM III Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Passive-Detached</td>
<td>Schizoid-Asocial</td>
<td>Schizoid</td>
</tr>
<tr>
<td>2</td>
<td>Active-Detached</td>
<td>Avoidant</td>
<td>Avoidant</td>
</tr>
<tr>
<td>3</td>
<td>Passive-Dependent</td>
<td>Dependent-Submissive</td>
<td>Dependent</td>
</tr>
<tr>
<td>4</td>
<td>Active-Dependent</td>
<td>Histrionic</td>
<td>Histrionic</td>
</tr>
<tr>
<td>5</td>
<td>Passive-Independent</td>
<td>Narcissistic</td>
<td>Narcissistic</td>
</tr>
<tr>
<td>6</td>
<td>Active-Independent</td>
<td>Antisocial-Aggressive</td>
<td>Antisocial</td>
</tr>
<tr>
<td>7</td>
<td>Passive-Ambivalent</td>
<td>Compulsive-Conforming</td>
<td>Compulsive</td>
</tr>
<tr>
<td>8</td>
<td>Active-Ambivalent</td>
<td>Passive Aggressive-Negativistic</td>
<td>Passive Aggressive</td>
</tr>
<tr>
<td>S</td>
<td>Detached</td>
<td>Schizotypal-Schizoid</td>
<td>Schizotypal</td>
</tr>
<tr>
<td>C</td>
<td>Dependent-Ambivalent</td>
<td>Borderline-Cycloid</td>
<td>Borderline</td>
</tr>
<tr>
<td>P</td>
<td>Independent-Ambivalent</td>
<td>Paranoid</td>
<td>Paranoid</td>
</tr>
</tbody>
</table>

The remaining scales of the MCMI relate to clinical symptom syndromes and correspond with DSM III Axis I diagnoses. The symptom disorders measured by these scales are in most cases, reactive in nature, i.e. a response to a stressor, and are more transient than the dimensions measured by the personality scales. The first six scales represent disorders of more moderate severity. The latter three represent disorders of marked severity. The clinical symptom scales are as follows:
<table>
<thead>
<tr>
<th>MCFI Scale</th>
<th>MCFI Classifications</th>
<th>DSM III Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Anxiety</td>
<td>Anxiety Disorders</td>
</tr>
<tr>
<td>H</td>
<td>Somatoform</td>
<td>Somatoform Disorders</td>
</tr>
<tr>
<td>N</td>
<td>Hypomanic</td>
<td>Manic Disorder, Moderate</td>
</tr>
<tr>
<td>D</td>
<td>Dysthymic</td>
<td>Dysthymia</td>
</tr>
<tr>
<td>B</td>
<td>Alcoholic Abuse</td>
<td>Alcohol Abuse</td>
</tr>
<tr>
<td>T</td>
<td>Drug Abuse</td>
<td>Drug Abuse</td>
</tr>
<tr>
<td>SS</td>
<td>Psychotic Thinking</td>
<td>Schizophrenic Disorder</td>
</tr>
<tr>
<td>CC</td>
<td>Psychotic Depression</td>
<td>Major Depression</td>
</tr>
<tr>
<td>PP</td>
<td>Psychotic Delusion</td>
<td>Paranoid Disorders</td>
</tr>
</tbody>
</table>

Procedures

Two diagnostic procedures were used to classify subjects as depressed and non-depressed: a clinical interview and the administration of the BDI.

The clinical interview was completed as a part of the routine assessment conducted for all inpatients following admission. The clinical interview was conducted with each patient on the first working day following admission. Present in the interview, in addition to the patient, were a psychiatrist who supervised the inpatient unit, a psychologist, a social worker, activity therapists, and psychiatric nurses. Previous psychiatric history (if any) was reviewed and the patient was interviewed by a psychiatrist and other staff members. At the conclusion of the interview, the multidisciplinary team, under the direction of a
psychiatrist, established a diagnosis and developed a treatment plan.

The second diagnostic condition for depression relied on the results of the Beck Depression Inventory. The BDI was administered to all patients who participated in the study following their admission and immediately prior to their discharge, providing measures during both an acute and recovered phase of their illness. Based on the recommendations by Beck et al. (1974), cut-off scores for the BDI were selected with the intention of assuring relatively "pure" groups of non-depressed and depressed subjects. A relatively high cut-off score of 20 was selected to identify depressed subjects. A low score of 13 was chosen to identify a non-depressed group.

Subjects were defined as belonging to the initially depressed group based on their meeting two criteria: a clinical diagnosis consistent with the guidelines described earlier for primary, unipolar mood disturbance and a BDI score of 20 or greater following admission. Subjects were defined as initially non-depressed if they achieved a score of 13 or less on the BDI following admission.

A group of recovered depressed subjects was identified by examining discharge BDI scores of all patients defined as depressed when admitted. Fourteen initially depressed subjects whose discharge BDI scores fell at or below the BDI cut-off score of 13 were defined as recovered depressed. Initially depressed subjects with discharge BDI scores greater than 13 were classified as non-recovered depressed. Nine subjects were included in this group.
A classification regarding personality pattern was made based on the results of the MCMI. As was the case with the BDI, the MCMI was administered to all subjects following admission and immediately prior to discharge. The MCMI protocols were computer scored and an automated Profile Report was generated for each subject. The Profile Report provided a profile of each subject's raw and base rate scores for each of the 20 scales of the MCMI. Subjects' scores on the eight basic personality scales were used to establish the personality patterns which were then used for comparisons of experimental groups.

Statistical Hypotheses

The original research question asked whether a relationship exists between premorbid personality trait patterns and primary unipolar depression. A second research question asked whether a relationship exists between personality trait measures made during acute and recovered phases of a patient's depressive illness. The following hypotheses were formulated to test these questions. The hypotheses are presented in null form.

Hypothesis One

There will be no significant differences between the mean scores of the initially depressed group of subjects and the initially non-depressed group of subjects on the eight basic personality scales of the MCMI.
Hypothesis Two

There will be no relationship between mean scores of the eight basic personality scales obtained pre- and post-recovery for the recovered depressed subjects.

Statistical Analyses

To test for differences between the personality measures of initially depressed and initially non-depressed subjects, the SPSS-ANOVA computer program was used to calculate a one-way analysis of variance for each of the eight MCMI basic personality scales between these two groups.

To assess the relationship of personality measures of depressed subjects taken during depressed and recovered phases of illness, a Spearman Rank Order Coefficient of Correlation ($r_s$) was computed for each of the eight MCMI basic personality scale scores between measures made during depressed and recovered phases of illness.

To further examine the relationship between personality patterns of depressed subjects during depressed and recovered phases of illness, a t-test was conducted to test for differences between the means of each of the eight MCMI basic personality scale scores obtained from subjects during depressed and recovered phases of illness.

A level of significance for all statistical analyses was established at the $P < .05$ level.
CHAPTER IV

RESULTS

This chapter will present the results of the statistical analyses conducted to test the hypotheses described in Chapter III. Additional analyses indirectly related to the statistical hypotheses were also conducted and will be described. The results of the tests of the statistical hypotheses and the additional analysis of data will be discussed in terms of implications regarding the original research questions. Implications of the results which go beyond the parameters of the original research questions will also be discussed.

Data and Their Analyses

To test the research questions involved in this investigation, two statistical hypotheses were developed. The statistical hypotheses are presented here in the null form.

Hypothesis One

There will be no significant differences between the mean scores of the initially depressed group of subjects and the initially non-depressed group of subjects on the eight basic personality scales of the MCMI.

A one-way analysis of variance was conducted between the eight
admission (pre-test) MCMI personality scales of depressed and non-depressed subjects. Table 1 shows the results of this analysis. A comparison of the personality scale profiles of depressed and non-depressed subjects is presented in Figure 1.

Table 1
Analysis of Variance of MCMI Personality Scales Between Initially Depressed and Initially Non-Depressed Subjects

<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Mean Square</th>
<th>F-Ratio</th>
<th>F Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4520.77</td>
<td>11.21</td>
<td>.0021 *</td>
</tr>
<tr>
<td>2</td>
<td>11037.61</td>
<td>33.38</td>
<td>.0000 *</td>
</tr>
<tr>
<td>3</td>
<td>1685.75</td>
<td>2.49</td>
<td>.1246</td>
</tr>
<tr>
<td>4</td>
<td>3011.87</td>
<td>5.15</td>
<td>.0302 *</td>
</tr>
<tr>
<td>5</td>
<td>7759.70</td>
<td>18.43</td>
<td>.0002 *</td>
</tr>
<tr>
<td>6</td>
<td>3508.96</td>
<td>7.57</td>
<td>.0097 *</td>
</tr>
<tr>
<td>7</td>
<td>7507.24</td>
<td>22.55</td>
<td>.0000 *</td>
</tr>
<tr>
<td>8</td>
<td>18541.23</td>
<td>61.96</td>
<td>.0000 *</td>
</tr>
</tbody>
</table>

Note. N = 34
df = 32
*P < .05

The results show significant differences between groups on all scales with the exception of scale 3. The lowest level of significance among the scales showing significant differences appears on scale 4, with a difference significant at the P < .302 level. Based on these results, the null hypothesis is rejected.
Note. Depressed N = 23 Mean Depression Score = 31.50
Non-Depressed N = 11 Mean Depression Score = 7.09

Figure 1
Mean MCMI Personality Profiles of Depressed and Non-Depressed Subjects at Time of Admission
Hypothesis Two

There will be no relationship between mean scores of the eight MCMI basic personality scales obtained pre- and post-recovery for the recovered depressed subjects.

To test for a relationship between subjects' personality scale scores under depressed and recovered conditions, a Spearman Rank Order Coefficient of Correlation was completed between admission and discharge personality scale scores of recovered depressed subjects. The results of this analysis are present in Table 2.

Table 2

<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Correlation Coefficient ($r_s$)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.28</td>
<td>.170</td>
</tr>
<tr>
<td>2</td>
<td>.76</td>
<td>.001 *</td>
</tr>
<tr>
<td>3</td>
<td>.73</td>
<td>.001 *</td>
</tr>
<tr>
<td>4</td>
<td>.73</td>
<td>.001 *</td>
</tr>
<tr>
<td>5</td>
<td>.31</td>
<td>.139</td>
</tr>
<tr>
<td>6</td>
<td>.58</td>
<td>.015 *</td>
</tr>
<tr>
<td>7</td>
<td>.78</td>
<td>.001 *</td>
</tr>
<tr>
<td>8</td>
<td>.11</td>
<td>.354</td>
</tr>
</tbody>
</table>

Note. N = 14

*P < .05
The correlations obtained range from a low of .11 on scale 8, to a high of .78 on scale 7. Correlations in the .70 range were obtained on scales 2, 3, 4, and 7.

The correlations obtained were significant for scales 2, 3, 4, 6, and 7. These correlations ranged from .58 to .78. Correlations for scales 1, 5, and 8 were not significant.

The null hypothesis in this case stated that no relationship would exist between personality measures made during depressed and recovered phases. The results obtained show a relationship for five of the basic personality scales (scales 2, 3, 4, 6, and 7). However, no significant relationship was found between pre- and post-recovery measures for scales 1, 5, and 8. Based on these findings, the null hypothesis is rejected.

Additional Analysis

The results of the analyses thus far have supported the rejection of the first statistical hypothesis. However, support for the rejection of the second statistical hypothesis is partial. Results regarding the second hypothesis show a significant relationship between depressed and recovered conditions for some of the MCMI scales, but no significant relationship for others. Although the null hypothesis is rejected, these results raise questions about the stability of the basic MCMI scales under different levels of symptom severity. Because no significant relationship was found between pre- and post-recovery measures on three of the eight basic personality scales, it does not appear that these scales provided

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measures of stable premorbid traits. Instead, they seem to be responsive to situational manifestations of symptoms.

The research question related to the second statistical hypothesis is central to this study. Are the measures obtained on the MCMI personality scales stable regardless of the level of symptom severity? The direction of results regarding that question has important implications for the analysis of data related to the first question. The first research question asks whether there is a relationship between premorbid personality traits and primary unipolar depression. To assess that relationship, there must be some confidence that measures on the MCMI basic personality scales obtained during a psychiatric illness represent traits, that they are stable and enduring aspects of personality, and that they are antecedent to, rather than a manifestation of, the illness.

If measures on the personality scales differ significantly under different levels of symptom severity, then measures made during acute phases of psychiatric illness cannot be assumed to represent premorbid characterological patterns. Instead, it would be more reasonable to assume that those measures may be reflective of symptom patterns related to the illness. If so, then those measures would not provide valid data for the investigation of the relationship of characterological patterns and depression.

Regarding the eight basic MCMI scales, Millon (1983) said:

They reflect relatively enduring and pervasive traits that typify patient styles of behaving, perceiving, thinking, feeling and relating to others. Although patients may currently exhibit more distinctive pathological symptoms, the features noted refer to their premorbid characterological pattern. (pp. 3-4)
Millon (1983) offered support for the stability of the personality scales by presenting acceptable levels of test-retest reliability at two- and five-week measurement intervals, with patients who were in active psychotherapy. With a large sample, at a five-week interval, using a Pearson Product Moment Correlation, Millon obtained coefficients for the eight scales ranging from .77 to .85.

Because in this study, the results of the test of hypothesis two offered only partial support for the stability of the MCMI personality scales under varying levels of symptomatology, additional analysis of the data was conducted.

To further assess differences between MCMI measures of depressed subjects made during depressed and recovered phases, t-tests were conducted between mean scores of the MCMI scales under each measurement condition. The results of that analysis are presented in Table 3.
### Table 3

**t-Test of Recovered Depressed Subjects' MCMI Basic Personality Scale Scores Between Depressed and Recovered Conditions**

<table>
<thead>
<tr>
<th>MCMI Scales</th>
<th>Depressed Condition</th>
<th>Recovered Condition</th>
<th>t-Value</th>
<th>2-Tail Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>1</td>
<td>71.86</td>
<td>19.13</td>
<td>45.21</td>
<td>22.09</td>
</tr>
<tr>
<td>2</td>
<td>83.93</td>
<td>14.96</td>
<td>49.07</td>
<td>22.92</td>
</tr>
<tr>
<td>3</td>
<td>76.79</td>
<td>31.10</td>
<td>63.93</td>
<td>27.82</td>
</tr>
<tr>
<td>4</td>
<td>34.43</td>
<td>25.48</td>
<td>51.93</td>
<td>28.49</td>
</tr>
<tr>
<td>5</td>
<td>30.36</td>
<td>18.37</td>
<td>61.07</td>
<td>18.66</td>
</tr>
<tr>
<td>6</td>
<td>34.64</td>
<td>22.03</td>
<td>51.21</td>
<td>19.10</td>
</tr>
<tr>
<td>7</td>
<td>55.79</td>
<td>15.97</td>
<td>82.86</td>
<td>15.27</td>
</tr>
<tr>
<td>8</td>
<td>80.93</td>
<td>14.78</td>
<td>32.21</td>
<td>20.92</td>
</tr>
</tbody>
</table>

**Note.** N = 14  
BDI score, Depressed 31.79; BDI score, Recovered 6.14  
*P < .05

The results of the t-tests show statistically significant differences between the means of seven of the eight basic personality scales when comparisons are made between measures conducted under depressed and recovered conditions. The difference on scale 3, although not significant, approaches significance with a probability level at the P < .052 level.

To further illustrate the differences in the mean personality profiles for recovered depressed subjects between depressed and
recovered conditions, the respective profiles of the eight basic scales of the MCMI are presented in Figure 2.

<table>
<thead>
<tr>
<th>MCMI Base Rate Score</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
</tr>
</tbody>
</table>

- ■ = Depressed Condition
- □ = Recovered Condition

Note. N = 14

Figure 2
MCMI Profiles of Recovered Depressed Subjects Under Depressed and Recovered Conditions

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Results of the Spearman Rank Order Correlation analysis and t-tests raise important questions about the stability of the MCMI basic personality scales. Although Spearman Correlation Coefficients between depressed and recovered conditions are significant for five scales, they are insignificant for the remaining three. Scales 2, 3, 4, 6, and 7, which yield significant correlations, when analyzed by t-tests, in all cases but one, show significant differences between depressed and recovered conditions.

The results of the two tests initially seem contradictory. It may be that significant correlations were found, even though means were significantly different because the changes which occurred within each individual scale between conditions tended to occur in the same direction among subjects.

Regardless of the analysis used, it would appear that there is, at best, weak support for the premise that the MCMI basic scales are measuring stable, premorbid personality traits when measures are made under conditions of acute symptomatology. Argument with this conclusion could be made on the basis that comparisons were made only for subjects who showed significant improvement in their Beck Depression scores, rather than with non-recovered depressed subjects as well.

In the original reliability studies conducted during the development of the MCMI, Millon (1983) compared test-retest scores of subjects who were in active psychotherapy. These studies did not include a criterion measure to assess level of symptomatology. Millon (1983) assumed that changes occurred because of ongoing
treatment between tests. It is probably safe to assume that changes in levels of symptom severity between testings were less marked under these conditions than was the case for recovered depressed subjects in this study. To assess the stability of the MCMI measures under conditions involving less change, comparisons were made between pre- and post-scores of non-recovered depressed subjects. MCMI scale scores of subjects who did not improve, that is, did not change from depressed to non-depressed status, were compared between admission and discharge phases. Spearman Rank Order Correlation Coefficients were computed for pre- and post-MCMI scores for non-recovered depressed subjects. Table 4 presents the results of that analysis.
### Table 4

MCMI Personality Scale Correlations of Non-Recovered Depressed Subjects Between Pre & Post Tests

<table>
<thead>
<tr>
<th>MCMI Personality Scale</th>
<th>Coefficient (r_g) Correlation</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.70</td>
<td>.018 *</td>
</tr>
<tr>
<td>2</td>
<td>.68</td>
<td>.021 *</td>
</tr>
<tr>
<td>3</td>
<td>.77</td>
<td>.008 *</td>
</tr>
<tr>
<td>4</td>
<td>.57</td>
<td>.055</td>
</tr>
<tr>
<td>5</td>
<td>.76</td>
<td>.008 *</td>
</tr>
<tr>
<td>6</td>
<td>.76</td>
<td>.009 *</td>
</tr>
<tr>
<td>7</td>
<td>.60</td>
<td>.043 *</td>
</tr>
<tr>
<td>8</td>
<td>.44</td>
<td>.121</td>
</tr>
</tbody>
</table>

Note. N = 9
Mean Depression Score, Pre-test = 31.33
Mean Depression Score, Post-test = 30.11
* P < .05

Correlation coefficients range from .44 to .76. Relatively low correlations were found for scales 4 and 8. Significant correlations were found for scales 1, 2, 3, 5, 6, and 7. Correlations for scales 4 and 8 were not significant.

The correlations between pre- and post-MCMI scores of non-recovered subjects appear somewhat higher than those of recovered subjects. Among non-recovered subjects, no correlations were below .44. Among recovered subjects, scales 1, 5, and 8 had correlations of .28, .31, and .11 respectively.

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t-Tests were also conducted between pre- and post-test MCMI personality scores of non-recovered depressed subjects. Table 5 presents the results of that analysis.

Table 5

<table>
<thead>
<tr>
<th>MCMI Scales</th>
<th>Pre Test Mean</th>
<th>Pre Test S.D.</th>
<th>Post Test Mean</th>
<th>Post Test S.D.</th>
<th>t-Value</th>
<th>2-Tail Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>81.78</td>
<td>15.74</td>
<td>74.22</td>
<td>33.07</td>
<td>.93</td>
<td>.380</td>
</tr>
<tr>
<td>2</td>
<td>96.11</td>
<td>12.14</td>
<td>86.44</td>
<td>25.04</td>
<td>1.26</td>
<td>.245</td>
</tr>
<tr>
<td>3</td>
<td>89.78</td>
<td>12.30</td>
<td>72.44</td>
<td>30.32</td>
<td>2.31</td>
<td>.050 *</td>
</tr>
<tr>
<td>4</td>
<td>27.22</td>
<td>17.98</td>
<td>28.33</td>
<td>19.33</td>
<td>-.19</td>
<td>.850</td>
</tr>
<tr>
<td>5</td>
<td>20.33</td>
<td>17.97</td>
<td>29.11</td>
<td>23.43</td>
<td>-1.94</td>
<td>.089</td>
</tr>
<tr>
<td>6</td>
<td>29.78</td>
<td>16.62</td>
<td>37.67</td>
<td>18.99</td>
<td>-1.87</td>
<td>.098</td>
</tr>
<tr>
<td>7</td>
<td>43.00</td>
<td>18.08</td>
<td>45.89</td>
<td>26.70</td>
<td>-.36</td>
<td>.725</td>
</tr>
<tr>
<td>8</td>
<td>90.89</td>
<td>12.23</td>
<td>80.89</td>
<td>30.03</td>
<td>1.13</td>
<td>.292</td>
</tr>
</tbody>
</table>

Note. N = 9

* P < .05

The results of t-tests also indicate less difference between pre- and post-MCMI scores for non-recovered than for recovered depressed subjects. With non-recovered subjects, a significant difference between pre- and post-test means was found only for scale 3. Differences between pre- and post-mean scores for the remaining scales are not significant. In pre- and post-comparison of MCMI scores of recovered depressed subjects, significant...
differences between means were found for seven scales. The difference on the remaining scale closely approached significance (Table 3).

The presentation of mean personality scores for pre- and post-test measures in Figure 3 illustrates the similarity of the profile patterns at admission and discharge for non-recovered depressed subjects.

<table>
<thead>
<tr>
<th>MCMI Base Rate Score</th>
<th>MCMI Basic Personality Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2  3 4 5 6 7 8</td>
</tr>
<tr>
<td></td>
<td>100 90 80 70 60 50 40 30 20 10 0</td>
</tr>
</tbody>
</table>

Note. N = 9

Figure 3
Pre-Test and Post-Test MCMI Personality Profiles of Non-Recovered Depressed Subjects

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Additional analysis of differences between personality measures of recovered versus non-recovered depressed subjects was done by conducting one way analysis of variance between personality scores of the two groups at admission and discharge. Results of these analyses are shown in Table 6 and 7.

Table 6

Analysis of Variance of MCMI Personality Scales Between Recovered and Non-Recovered Depressed Subjects at Time of Admission

<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Mean Square</th>
<th>F-Ratio</th>
<th>F-Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>539.16</td>
<td>1.68</td>
<td>.2089</td>
</tr>
<tr>
<td>2</td>
<td>813.05</td>
<td>4.17</td>
<td>.0538</td>
</tr>
<tr>
<td>3</td>
<td>924.70</td>
<td>1.41</td>
<td>.2486</td>
</tr>
<tr>
<td>4</td>
<td>284.49</td>
<td>.54</td>
<td>.4698</td>
</tr>
<tr>
<td>5</td>
<td>550.44</td>
<td>1.66</td>
<td>.2119</td>
</tr>
<tr>
<td>6</td>
<td>129.66</td>
<td>.32</td>
<td>.5779</td>
</tr>
<tr>
<td>7</td>
<td>895.56</td>
<td>3.17</td>
<td>.0894</td>
</tr>
<tr>
<td>8</td>
<td>543.49</td>
<td>2.83</td>
<td>.1075</td>
</tr>
</tbody>
</table>

Note. Recovered Depressed N = 14
Non-recovered Depressed N = 9
df = 22
* P < .05

Results of this analysis show no differences which reach significance between groups on any of the personality measures at time of admission.
Results of the analysis of variance of MCMI scores between recovered and non-recovered subjects indicates that, at time of discharge when levels of depression differed significantly, there were significant differences as well as between groups on several MCMI scales. Scales 1, 2, 4, 5, 7, and 8 show significant differences. Differences for scales 3 and 6 do not attain significance.

The results of the various analyses of data related to the stability of the MCMI scales indicate a relatively strong relationship between admission and discharge personality scores of subjects who displayed no substantial change in their level of depressive

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symptoms between testings. In contrast, however, the relationship between admission and discharge scores was considerably weaker for subjects who showed substantial change in levels of depression. Based on these results, it appears that the basic personality scales of the MCMI were sensitive to changes in levels of depression. Personality scores appeared to vary and profile patterns were substantially different for the same subjects when levels of depression changed.

The concept of examining the stability of the basic personality scales of the MCMI by examining test-retest scores for subjects who have recovered from their depressive symptoms may be faulted because it does not follow the procedures generally used to examine the reliability of a test instrument. However, using these more demanding conditions to evaluate the stability of the measures seems appropriate if the purpose is to measure characterological or premorbid personality traits in the presence of psychiatric symptoms. As was discussed previously, the problem of measuring personality in the presence of acute symptoms has consistently been present in investigations that have sought to make inferences regarding the relationship of premorbid personality traits to any psychiatric illness.

Because one of the basic questions involved in this study is an investigation of the relationship of premorbid personality traits to primary unipolar depression, it seems important to evaluate the extent to which personality measures obtained were sensitive to changes in levels of depression in a given group of subjects.
Based on the analyses conducted on pre- and post-test personality scores of recovered and non-recovered depressed subjects, it appears that the MCMI scales did not remain stable when depression levels changed. These results do not support the premise that the MCMI basic personality scales have provided accurate measures of stable enduring traits when administered under acute symptom conditions. Consequently, it does not appear appropriate to conclude that the differences apparent in personality patterns between initially depressed and non-depressed subjects (Table 1) necessarily represent differences in their long-term patterns of functioning.

Because of the lack of confidence in making inferences regarding premorbid personality from MCMI measures made following admission, additional analysis of data was conducted to examine the question involved in hypothesis one, namely, whether a relationship exists between premorbid personality and depression.

In the absence of a personality measure that is immune to the influences of acute symptoms, investigators studying the relationship of personality and depression have typically dealt with the problem of making inferences regarding premorbid personality patterns by examining patterns measured after subjects have recovered from their illness. This procedure is based on the assumption that following recovery, premorbid personality patterns re-emerge.

Studies by Metcalfe (1968), Julian et al. (1969), Kendell and Discipio (1970), and Altman and Wittenborn (1980), are among those which have used this procedure. In these studies, recovered depressed patients have usually been compared with normals.
Data to make comparisons between recovered depressed subjects and normals were not available for this study because the study focused exclusively on a clinical sample of subjects. Additionally, this was not possible because the MCMI is not intended for use with a normal population.

The most appropriate comparison given the sample available, was between personality measures of recovered depressed and non-depressed subjects at time of discharge. However, some potential methodological problems were present in this comparison. Since the MCMI scales appeared to yield different scores under different levels of depression, it was possible that the symptom patterns which were present for non-depressed subjects would also affect their personality scores. Data were available to measure symptom level and define recovery for depressed subjects; however, the symptoms associated with the hospitalization of non-depressed subjects were not identified. Therefore, a non-depressed recovered group could not be identified.

Before comparisons could be made between discharge scores of recovered depressed and non-depressed subjects, it was necessary to examine the relationship between admission and discharge personality measures of non-depressed subjects. This was done in order to determine whether the personality measures had remained relatively stable in spite of the unknown changes in symptom levels which may have occurred among non-depressed subjects during their hospitalization.
To examine the relationship between the admission and discharge MCMI personality scores of non-depressed subjects, Spearman Rank Order Correlation Coefficients and t-test for significance of differences between means were calculated. The results of these analyses are presented in Tables 8 and 9.

Table 8

<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Correlation Coefficient ($r_s$)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.40</td>
<td>.111</td>
</tr>
<tr>
<td>2</td>
<td>.46</td>
<td>.075</td>
</tr>
<tr>
<td>3</td>
<td>.78</td>
<td>.002 *</td>
</tr>
<tr>
<td>4</td>
<td>.62</td>
<td>.021 *</td>
</tr>
<tr>
<td>5</td>
<td>.81</td>
<td>.001 *</td>
</tr>
<tr>
<td>6</td>
<td>.85</td>
<td>.000 *</td>
</tr>
<tr>
<td>7</td>
<td>.60</td>
<td>.025 *</td>
</tr>
<tr>
<td>8</td>
<td>.24</td>
<td>.242</td>
</tr>
</tbody>
</table>

Note. N = 11
Mean Depression Score, Admission = 7.09
Mean Depression Score, Discharge = 5.09
* P < .05

Results of the correlation analysis indicate correlations for the MCMI personality scales ranging from .24 to .85. Significant correlations were found for scales 3, 4, 5, 6, and 7. Correlations...
for scales 1, 2, and 8 were not significant.

Table 9

<table>
<thead>
<tr>
<th>MCMI Scales</th>
<th>Admission Mean</th>
<th>S.D.</th>
<th>Discharge Mean</th>
<th>S.D.</th>
<th>t-Value</th>
<th>2-Tail Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>51.09</td>
<td>23.73</td>
<td>54.09</td>
<td>21.44</td>
<td>-.43</td>
<td>.675</td>
</tr>
<tr>
<td>2</td>
<td>50.18</td>
<td>23.83</td>
<td>52.73</td>
<td>17.36</td>
<td>-.42</td>
<td>.684</td>
</tr>
<tr>
<td>3</td>
<td>66.82</td>
<td>26.41</td>
<td>66.36</td>
<td>33.79</td>
<td>.07</td>
<td>.944</td>
</tr>
<tr>
<td>4</td>
<td>51.72</td>
<td>27.23</td>
<td>49.09</td>
<td>24.07</td>
<td>.51</td>
<td>.620</td>
</tr>
<tr>
<td>5</td>
<td>58.73</td>
<td>24.39</td>
<td>55.36</td>
<td>23.51</td>
<td>.70</td>
<td>.501</td>
</tr>
<tr>
<td>6</td>
<td>54.45</td>
<td>24.84</td>
<td>53.64</td>
<td>27.80</td>
<td>.16</td>
<td>.876</td>
</tr>
<tr>
<td>7</td>
<td>82.55</td>
<td>19.57</td>
<td>73.82</td>
<td>21.17</td>
<td>1.17</td>
<td>.118</td>
</tr>
<tr>
<td>8</td>
<td>34.91</td>
<td>22.35</td>
<td>35.00</td>
<td>23.12</td>
<td>-.01</td>
<td>.992</td>
</tr>
</tbody>
</table>

Note. N = 11
* P < .05

Results of the t-tests indicate no differences which approach significance between the means of any of the eight MCMI scales.

The insignificant Spearman correlations of some MCMI scales in the presence of highly similar means appears initially contradicting. These somewhat "contradictory" indications of separate statistical analyses may be due to the movement of MCMI scale scores in different directions among subjects between admission and discharge measures. The group means remained highly similar despite this movement.
A comparison of mean MCMI personality profiles for non-depressed subjects at admission and discharge is presented in Figure 4.

<table>
<thead>
<tr>
<th>MCMI Base Rate Score</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
</tr>
</tbody>
</table>

Note. N = 11
Admission BDI score 7.09
Discharge BDI score 5.09

Figure 4
Mean MCMI Personality Profiles of Non-Depressed Subjects at Admission and Discharge

The similarity of mean admission and discharge MCMI profiles of non-depressed subjects is apparent in the comparison illustrated.
in Figure 4. It appears that the MCMI profiles of non-depressed subjects were not significantly affected by any changes in level of symptom severity which may have occurred between admission and discharge testing. Therefore, the fact that a recovered non-depressed group cannot be identified should not affect the validity of comparisons of discharge personality measures between recovered depressed and non-depressed subjects.

Having established relatively good stability between pre- and post-personality measures of non-depressed subjects, additional analysis of data was conducted between discharge personality scores of recovered depressed and non-depressed subjects. Inferences regarding differences in premorbid personality patterns between depressed and non-depressed subjects were made based on the assumption that the discharge personality profiles of both groups were not affected by acute symptoms, but rather reflected long term patterns of functioning.

To examine the relationship between personality patterns of recovered depressed and non-depressed subjects, a one way analysis of variance was conducted between discharge MCMI scores of recovered depressed and non-depressed subjects. The results of that analysis are presented in Tables 10 and 11.
Table 10

Analysis of Variance of MCMI Personality Scale Scores at Discharge Between Recovered Depressed and Non-Depressed Subjects

<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Mean Square</th>
<th>F-Ratio</th>
<th>F-Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>485.37</td>
<td>1.02</td>
<td>.3229</td>
</tr>
<tr>
<td>2</td>
<td>82.32</td>
<td>.19</td>
<td>.6650</td>
</tr>
<tr>
<td>3</td>
<td>36.53</td>
<td>.04</td>
<td>.8450</td>
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<tr>
<td>4</td>
<td>49.60</td>
<td>.07</td>
<td>.7940</td>
</tr>
<tr>
<td>5</td>
<td>200.69</td>
<td>.46</td>
<td>.5049</td>
</tr>
<tr>
<td>6</td>
<td>36.14</td>
<td>.07</td>
<td>.7985</td>
</tr>
<tr>
<td>7</td>
<td>503.29</td>
<td>1.54</td>
<td>.2270</td>
</tr>
<tr>
<td>8</td>
<td>47.80</td>
<td>.10</td>
<td>.7552</td>
</tr>
</tbody>
</table>

Note. df = 24
Recovered Depressed: N = 14, Mean BDI = 6.14
Non-Depressed: N = 11, Mean BDI = 5.09
* P < .05

Results of an analysis of variance show no differences approaching significance.
<table>
<thead>
<tr>
<th>MCMI Personality Scales</th>
<th>Recovered Depressed Mean</th>
<th>S.D.</th>
<th>Non-Depressed Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45.21</td>
<td>22.09</td>
<td>54.09</td>
<td>21.44</td>
</tr>
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<td>2</td>
<td>49.07</td>
<td>22.92</td>
<td>52.73</td>
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<td>3</td>
<td>63.93</td>
<td>27.82</td>
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<td>4</td>
<td>51.93</td>
<td>28.49</td>
<td>49.09</td>
<td>24.07</td>
</tr>
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<td>5</td>
<td>61.07</td>
<td>18.66</td>
<td>55.36</td>
<td>23.52</td>
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<td>6</td>
<td>51.21</td>
<td>19.10</td>
<td>53.64</td>
<td>27.80</td>
</tr>
<tr>
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<td>82.86</td>
<td>15.27</td>
<td>73.82</td>
<td>21.17</td>
</tr>
<tr>
<td>8</td>
<td>32.21</td>
<td>20.92</td>
<td>35.00</td>
<td>23.12</td>
</tr>
</tbody>
</table>

Note. Recovered Depressed N = 14  
Non-Depressed N = 11

A visual comparison of mean personality profiles is provided in Figure 5.
A visual comparison of mean scores reveals the similarity between the groups' personality profiles as well as the similarity in elevations of individual scales.

The results of the preceding analyses comparing personality measures of recovered depressed and non-depressed subjects appear
to indicate that depressed patients, when they are no longer reporting symptoms of marked depression, display personality patterns which are not significantly different from those displayed by patients hospitalized for reasons other than depression.

Because of the apparent sensitivity of the MCMI basic personality scales to levels of depression as measured by the Beck Depression Inventory, the analysis of data from recovered depressed and non-depressed groups appears to be a more appropriate test of the first research question of this study. These analyses appear to indicate that personality measures made of recovered subjects are more likely to be free of the influence of acute symptoms and may therefore, more accurately reflect long term patterns of functioning.

Although significant differences were apparent between depressed and non-depressed subjects on all eight personality scales immediately following admission, allowing rejection of null hypothesis one, it does not appear appropriate to view these differences as representing differences in the premorbid personality patterns of the two groups.

It seems more appropriate to make inferences regarding premorbid personality patterns based on the results of the analyses of differences between discharge personality scores of recovered depressed and non-depressed subjects. The results of analyses between these groups does not support the premise that depressed and non-depressed patients differ in their premorbid personality patterns.
Discussion

The results which have been described will be discussed in terms of their implications regarding the relationship of personality to depression and in terms of problems associated with personality measurement encountered in investigations of that relationship. In view of some of the difficulties encountered in making inferences regarding premorbid personality traits from MCMI measures, other interpretations and implications of the results will be discussed.

The nature of the results of this investigation have presented some difficulties in terms of developing a valid resolution of the basic research question regarding the relationship of premorbid personality and depression. Initial results of the tests of the first null hypothesis utilizing data from the MCMI measures of initially depressed and non-depressed subjects found significant differences between groups and provided strong support for the rejection of the null hypothesis. However, the validity of inferences regarding premorbid personality traits from measures made at admission depended on the stability of the MCMI measures between varying levels of symptom severity, which was the question addressed in null hypothesis two. Due to the apparent changes in MCMI scores associated with changes in levels of depression, null hypothesis two could not be rejected. Consequently, the basic research question regarding the relationship of premorbid personality and depression could not be answered from those data because there was not support for the premise that the admission
measures of the MCMI represented measures of premorbid personality traits. Therefore, additional analysis was conducted in order to examine the basic research question using data from discharge depression and personality measures.

The discharge MCMI personality scores of recovered depressed and non-depressed subjects were compared to evaluate differences in personality patterns between the two groups. Investigation of the research question in this manner was pursued based on the assumption that premorbid personality patterns re-emerge when patients recover from depression. Consequently, personality measures of recovered depressed subjects were assumed to represent long term patterns of personality functioning.

Proceding with an analysis of data based on the assumption that premorbid personality patterns re-emerge when symptoms have abated is consistent with research procedures frequently followed in investigations of the relationship of personality traits and depression. Other studies which have been conducted utilizing data from recovered depressed subjects have included investigations by Metcalfe (1968), Julian et al. (1969), Kendell and Discipio (1970), and Altman and Wittenborn (1980).

The rationale for the use of discharge MCMI scores of non-depressed subjects for comparisons with a recovered depressed group depended on the results of several analyses which indicated a reasonable degree of reliability of non-depressed MCMI measures between admission and discharge phases. It was assumed, therefore, that because the measures did not appear sensitive to any changes
in symptom level which might have occurred, they too represented stable, long-term patterns of functioning.

Analysis of the data in this manner did not reveal significant differences between the manifest personality traits of depressed and non-depressed subjects. Subjects who had recovered from depression and subjects who had not been depressed during their inpatient hospitalization displayed essentially similar personality profiles at time of discharge.

This researcher found no other studies which used the MCMI to compare personality traits of depressed and non-depressed clinical subjects. However, studies using the Maudsley Personality Inventory, the Leyton Obsessional Inventory and a non-standardized self-descriptive questionnaire have indicated differences between the personality traits of formerly depressed subjects compared with normals. The relationship of obsessive-compulsive patterns to depression has received considerable consensus in the literature, according to Chodoff (1973). Metcalfe (1968), using the Maudsley Personality Inventory, found that depressives, when compared to normals, tended to be distinguished by a set of traits associated with what has traditionally been regarded as an obsessive-compulsive personality style. Those traits included a tendency toward worry, a tense attitude toward life, a denial of fantasy and imagination and a rigid habit-bound personality. Julian et al. (1969), using the Maudsley Personality Inventory, studied recovered depressed patients in comparison with normals and came to similar conclusions. Kendall and Discipio (1970), using the Leyton Obsessional Inventory...
to compare recovered depressed patients with normals also found a relationship between obsessional symptoms and unipolar depression.

If it can be assumed that scale 7 of the MCMI is measuring obsessive-compulsive factors, then it appears that these results do not offer support for the premise that a positive relationship exists between premorbid obsessive-compulsive traits and depression.

Further examination of the relationship of scale 7 to levels of depression suggests conclusions directly contradictory to those of Kendell and Discipio. Kendell and Discipio (1970) found a positive relationship between levels of depression and intensity of obsessional features. Depressed patients were more obsessional when they were more depressed. Elevations of scale 7 in relation to levels of depression as measured by the EDI show an inverse relationship between these two factors. Scale 7 showed one of the lower elevations when depressed subjects were admitted. When depressed subjects recovered and were no longer reporting depressive symptoms, scale 7 was one of the most elevated scales. Consistent with these observations, depressed subjects who did not improve, who remained depressed, continued to show low elevations on scale 7 when measured at discharge.

These results suggest that an inverse relationship may exist between obsessive-compulsive features and levels of depression. The tension, rigidity, and tight controls of the compulsive conforming style were not prominent features during depression, but were a marked feature of the profile when depression had lessened. Marked elevations on scale 7 were also present for non-depressed subjects.
both at admission and discharge. Scale 7 was, in fact, the high point scale for the non-depressed group at both admission and discharge.

These results suggest that obsessive-compulsive features may be a prominent aspect of the functioning of depressive and non-depressive clinical subjects at both premorbid and postmorbid stages. During the acute phases of depression, however, depressed subjects showed significantly lower scores on this measure, while the same measure for non-depressed subjects remained stable between admission and discharge.

These results are open to various interpretations. It may be that during an acute depression, the individual's typical compulsive-conforming adaptive style breaks down only to re-emerge when the acute crisis has passed. It is at least clear that the results obtained in this study suggest a relationship between obsessive-compulsive features and depression that is inconsistent with the findings of previous studies and with widely held clinical opinions.

Reference was made earlier in this discussion to observations by Metcalfe (1968) regarding a predominance in the clinical literature of two basic personality types commonly thought to be associated with depression, the tense and duty bound individual (obsessive-compulsive), and the detached pessimistic type. Metcalfe (1968) described the detached individual as an "asthenic person, with little enjoyment in life, subdued in manner and usually pessimistic in outlook" (p. 99). Although any comparison of this detached type with current DSM III classifications and with
personality types of the MCMI is tenuous, the MCMI clinical scales which appear to best fit with these characteristics are scales 1 and 2, which Millon (1983) labels Schizoid-Asocial and Avoidant respectively, and which correspond with the DSM III classifications of Schizoid and Avoidant Personality. MCMI scales 1 and 2 represent passive-detached (scale 1) and active-detached (scale 2) styles of adaptation according to Millon. The characteristics associated with these scales include bland or dysphoric affect, interpersonal detachment or alienation and an indifference to or suspicion of others.

An examination of differences on scales 1 and 2 between recovered depressed and non-depressed subjects at discharge showed no significant differences between groups on either scale. Consequently, these results do not support the hypothesis that these are distinguishing premorbid traits of depressive individuals.

However, an examination of the MCMI measures obtained during levels of acute depression did show large and statistically significant differences between depressed and non-depressed subjects on MCMI scales 1 and 2. Depressed subjects scored significantly higher on both scales when they were depressed.

These results suggest that these features accompany depression. During the acute phase of depression, it appears the depressed subjects displayed more interpersonal detachment, greater interpersonal indifference and alienation, and were more impervious to or suspicious of others. Depressed subjects who did not improve displayed an insignificant lowering of these scales. Depressives who
recovered showed significantly lower scores on scales 1 and 2 when recovered, scores that were not significantly different than those of non-depressed subjects at both admission and discharge.

These results suggest that depressives may not be characterized by excessive detachment premorbidly. It appears that the detached, alienated characteristics described may not be a distinctive feature of depressives generally, but rather characterize their functioning during acute phases of depression and remit after recovery.

Bemporad (1971) in a review of the psychiatric literature regarding depression, identified "dependency on a dominant other" as the most universally described characteristic of depressives (p. 222). Individuals with dependent characteristics are believed to be susceptible to depression because their sources for need fulfillment are primarily external, from others. Dependent individuals are consequently vulnerable to interruptions of the supply of essential needs.

Scale 3 of the MCMI, which represents the passive-dependent style of adaptation, is labelled Dependent-Submissive by Millon (1983) and corresponds to the DSM III classification of Dependent Personality. Millon describes high scorers on the scale as docile and noncompetitive, conciliatory and submissive, possessing self-images of inadequacy, placating toward others, and avoiding assertive behaviors and autonomous roles. These characteristics appear compatible with what has been described as pathological dependency.

The scores of recovered depressed subjects on scale 3 were not significantly different from those of non-depressed subjects.
at discharge. These results do not support the hypothesis that depressives are characterized by a long-term pattern of functioning which is more dependent than that of non-depressives. When recovered, the scores of formerly depressed subjects are similar to those of other clinical subjects.

An examination of differences between depressed and non-depressed subjects on scale 3 following admission showed a greater difference, with depressed subjects scoring higher; however, the difference was not significant. In fact, the difference between groups on scale 3 was the only difference among the eight scales which was not significant in the measurements made between groups following admission. These results suggest that greater levels of dependent characteristics may be present during depression. The trend of differences is consistent with that hypothesis. However, the strength for the support of that premise is weak, based on these results, because of the lack of statistical significance in the difference found.

An examination of differences of scores on scale 3 between groups appears to indicate that depressives were not characterized by significantly greater levels of dependency, either during or following their depression.

Another characteristic which has frequently been associated with the depressive personality and the process of depression is that of repressed or self-directed anger. Psychoanalytically-oriented models of depression have emphasized the role of inner-directed anger in depression. Freud (1917) described the inner-
directed rage resulting from earlier object loss as central in the depressive process. Bibring (1953) viewed anger resulting from the failure of the ego to achieve its ideals as a significant factor in the development of depression. Psychodynamic theorists have generally regarded the lowered self-esteem present in depression as an expression of self-hate.

To examine this characteristic within the context of this study, the scores achieved by various groups on MCMI scale 8 were examined and compared. Scale 8 is labelled Passive-Aggressive and represents an active-ambivalent pattern of adaptation. The passive-aggressive pattern, according to Millon (1983) includes such characteristics as irritability, low frustration tolerance, explosiveness, behavioral contrariness, discontent with self-image, feeling misunderstood and demeaned by others, having poor regulatory controls of behavior, interpersonal ambivalence, vacillation between dependence and submission, and assertive independence.

The DSM III correlate of scale 8 is Passive-Aggressive Personality. However, the clinical description of characteristics associated with the scales provided by Millon presents a somewhat different pattern of functioning than that provided by the description of Passive-Aggressive Personality in DSM III. The DSM III description emphasizes passive expression of covert anger. Millon's description of scale 8 styles emphasizes labile affectivity, negativity, and instability of emotions and behavior. Generally, the themes of the characteristics associated with this scale appear to involve ambivalence regarding dependency needs and ambivalent...
management of anger. Although there is discontent regarding self-image, the anger present in this style of adaptation is not directed solely or primarily at the self. Such individuals appear to be characterized more by a pattern of vacillation between inner-directed and outward-directed anger, resulting in tension and emotional and behavioral instability. The characteristics described suggest that others rather than the self are frequently viewed as the enemy.

An examination of the relationships between scale 8 scores and depression yielded the following results. A significant difference was found between scores on MCMI scale 8 between depressed and non-depressed subjects during the acute symptom phase following admission. The difference found, however, was in a direction opposite of that which might be predicted on the basis of the traditional hypothesis regarding the relationship of inner-directed anger and depression.

Based on the ambivalent management of anger associated with scale 8, one might expect that depressives, if they were primarily directing anger inward at the self, would score significantly lower on scale 8 than non-depressed clinical subjects. Depressed subjects, however, scored significantly higher on this scale. Scale 8 was, in fact, one of the highest scale elevations of the mean personality profile of depressed subjects.

In contrast, scale 7, the passive-ambivalent scale of the MCMI, which connotes considerably less active management of anger and ambivalence, was significantly lower for depressed than
non-depressed subjects.

Additionally, it is interesting to note that depressed subjects displayed significant changes in their scores on both scales 7 and 8 when their depressive symptoms had abated. The relative elevations between scales 7 and 8 reversed. When recovered depressed subjects were measured at discharge, scores on scale 7 increased significantly and scores on scale 8 decreased significantly. The mean profile of recovered depressed subjects showed scale 7 to be one of the highest elevations and scale 8 to be nearly the lowest elevation in the profile. Depressed subjects who remained depressed at discharge did not show significant changes on either scale.

In view of the positive relationship between scale 8 with depression and the corresponding inverse relationship of scale 7 with depression, these results appear to suggest a different pattern regarding the management of anger among the depressed subjects in this study than would be expected on the basis of theories which emphasize the role of self-hate in depression. The relationship which appears to emerge here suggests the depressives were characterized by more unstable anger which was directed actively outward, more frequently than was the case for non-depressed subjects. It also appears that when depressives recovered, this pattern changed. Following recovery, it appears that depressed subjects became more conforming, less active and more passive in their management of tension and anger, suggesting perhaps more, rather than less repression of these impulses.
Obviously it is necessary to be very cautious regarding the interpretation of these results. Scales 7 and 8 of the MCMI cannot be assumed to necessarily represent direct and valid measures of patterns of directing hostility and anger. However, in view of the dimensions and characteristics which these scales purport to measure, it does appear that the trends observed in these results suggest the possibility of a somewhat different relationship between anger and depression than expected. It appears that the depressive patterns observed in this study may have been characterized more by a pattern of agitated and ambivalent hostility, rather than an exclusive direction of hostility at the self.

Recent research by Lewinsohn et al. (1981) using a large sample of subjects, several criterion measures and a longitudinal research design, yielded findings which provided little support for a distinctive premorbid personality associated with depression. Although Lewinsohn and his colleagues did not use a traditional personality measure, a variety of measures related to patterns of cognition, patterns of attribution and belief systems were used to measure constructs believed by many contemporary authorities to be stable traits which predispose an individual to depression.

Findings of Lewinsohn's study showed that depressed and non-depressed individuals differed on these measures when depressive symptoms were present. However, no essential differences on the criterion measures were found between individuals who were "future depressives" and those who were not. Also, after depressive symptoms had abated, no differences remained between individuals who
had been depressed and those who had not.

The findings of Lewinsohn et al. (1981) that differences existed between groups when depressive symptoms were present but essentially disappeared when the depressives had recovered coincide with the findings of the present investigation.

In the present study, depressed and non-depressed subjects (Table 1) showed significant differences on seven of the eight basic personality scales of the MCMI immediately following admission. At the time of discharge, depressed subjects who remained depressed (Table 5), displayed significant changes on only one personality scale. Depressed subjects who recovered (Table 3) showed significant changes between depressed and recovered conditions on seven of the eight MCMI scales. Changes on the eighth scale were substantial but fell slightly below the criterion for significance.

Additionally, those depressed subjects who recovered displayed a personality profile following recovery that was essentially the same as that displayed by subjects being discharged who had not been depressed (Tables 10, 11, and Figure 5). No significant differences were found between discharge scores of recovered depressed and non-depressed groups on any of the eight MCMI scales.

Lewinsohn and his colleagues addressed the question of whether a set of distinctive traits were antecedent to, coincident with, or consequent from depression. Lewinsohn concluded from his results that neither the antecedent nor the consequent hypothesis was supported. The hypothesis that distinctive patterns of cognitions
were manifest during depression was supported and appeared to account for the differences found between groups in the measures used during the course of a depressive episode.

The results of the present investigation support the same conclusions, namely, that from the data available, no support was shown for the relationship of distinctive premorbid or postmorbid personality patterns to depression as defined in this study. Strong support was shown, however, for the presence of significantly different state patterns or temporary adaptive styles between depressed and non-depressed individuals during the course of depression.
CHAPTER V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the relationship between premorbid personality and primary depression. Depression has been recognized as a major mental health problem for decades and has been researched extensively. Since Hippocrates in the Fourth Century B.C., theories regarding the nature and causes of depression have been offered. Contemporary theories regarding the process and etiology of depression are numerous. In spite of the attention it has received, depression remains a disorder which is inadequately understood.

There is agreement among many theorists that there are distinctive premorbid personality traits which predispose an individual to depression. Clear identification of such traits and their relationship to depression would obviously be valuable in terms of understanding the causes and processes of depression, as well as assisting in the refinement of methods of treatment.

This study has attempted to investigate the question of whether a relationship exists between premorbid personality traits and depression by examining personality and primary unipolar depression in a population of psychiatric inpatients.

To investigate this relationship, a sample was drawn from an adult inpatient acute care unit of the Mid Missouri Mental Health

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Center, a large state-operated facility serving the central region of the state of Missouri. Subjects were selected from the inpatient population of Ward Two South between February, 1982, and August, 1982. The final sample included in the study consisted of 34 subjects, 14 males and 20 females.

Patients were excluded from the study if they did not agree to participate, if they received a diagnosis of organic brain syndrome, if they were too confused or disorganized to complete the tests administered, or if they did not demonstrate a reading level adequate to comprehend the content of the tests used. A large number of subjects were also excluded because they were discharged from the hospital without completing the necessary post-tests.

The BDI and the MCMI were selected as criterion instruments to measure depression and personality respectively. The MCMI was specifically selected as the instrument to measure personality dimensions because it contained scales which were intended to measure stable trait dimensions of personality. The measurement of these trait dimensions was claimed to be valid and reliable during symptomatic phases of psychiatric illness. The problem of measuring personality traits in a symptomatic population had typically frustrated investigators seeking to identify the relationship of personality traits to depression. The MCMI appeared to offer a method of measurement that would circumvent that problem.

Depressed and non-depressed subjects were identified both by measurement obtained with the BDI and by the facility's routine clinical diagnostic procedure, using DSM III criteria. The BDI and
MCMI were administered to all subjects immediately after admission and immediately before discharge from the hospital.

Two statistical null hypotheses were developed to test the research questions.

The first null hypothesis stated that "There will be no significant differences between the mean scores of the initially depressed group of subjects and the initially non-depressed group of subjects on the eight basic personality scales of the MCMI".

Significant differences (P < .05) were found between depressed and non-depressed subjects on seven of the eight personality dimensions. Therefore, it appeared the null hypothesis could be rejected.

Initially, these results appeared to indicate substantial differences in several premorbid trait dimensions between depressed and non-depressed subjects. However, the validity of that inference depended on confirmation of the independence of the MCMI trait scales from the influence of clinical symptoms. If the trait measures of the MCMI varied significantly in relation to changes in levels of clinical symptoms, then the dimensions measured under symptomatic conditions could not reliably be assumed to represent stable premorbid traits.

To investigate that question, which was secondary but central to the primary research question, statistical hypothesis two was developed.

The second null hypothesis stated that, "There will be no relationship between mean scores of the eight basic personality scales obtained pre- and post-recovery for the recovered depressed..."
Statistical analysis of hypothesis two indicated that, although a significant relationship \((P < .05)\) was found between five of the MCMI scales, no significant relationship was found for the remaining three scales. Further analysis showed significant differences \((P < .05)\) between group mean scores for seven of eight scales when admission and discharge scores were compared. The difference on the remaining scale \((P < .052)\) was nearly significant statistically.

Based on these results, the null hypothesis of no relationship between MCMI pre- and post-measures of recovered depressed subjects could not be rejected. Consequently, the differences found during acute symptom conditions between depressed and non-depressed subjects could not be assumed to represent differences in stable premorbid traits. The results appeared to indicate that the basic MCMI scales were sensitive to the influence of depressive symptoms.

Investigation of the original research question was then pursued by examining differences between post-MCMI scores of recovered depressed and non-depressed subjects. The results of these comparisons showed no significant differences between recovered depressed and non-depressed subjects on any of the eight dimensions measured by the MCMI. Based on these results, it was concluded that null hypothesis one could not be rejected. The data analysis did not support the concept that a relationship existed between premorbid personality and primary unipolar depression. Because of the marked differences apparent in patients' scores on the personality dimensions of the MCMI between depressed and recovered...
stages of their illness, comparisons were made of recovered depressed subjects' MCMI scores between depressed and recovered conditions. These comparisons were made to provide information regarding the relationship of the personality dimensions measured by the MCMI to the presence and absence of acute depressive symptoms. Differences between group mean scores were statistically significant for seven of the eight MCMI scales. The group mean profile of subjects at admission suggested that the adaptive style of depressed subjects was characterized by social and interpersonal alienation and detachment, dependency, poor self-image, labile affect, and contrary, negativistic and passive-aggressive behavior.

The adaptive style apparent from the group mean profile of the same subjects when they had, based on their BDI scores, recovered from depression was considerably different. The post-test MCMI profile showed a significant decrease in the measures related to social and interpersonal alienation and detachment and also in the measure related to labile affect and contrary, negativistic and passive-aggressive behavior. Scores on the dependency, poor self-image dimension lowered somewhat but not significantly.

The style apparent in the profiles of subjects who had recovered from depression was characterized by moderate scores on the dimension related to dependency and poor self-image, moderate scores on a narcissistic dimension, and very high scores on the dimension related to compulsive-conforming styles of adaptation. The marked increase of scores on this dimension suggested that these subjects became more restrained in emotional expression, more conscientious
in self-image, more conforming to social and interpersonal norms and
more rigid and constricted in cognitive and behavioral style as they
became less depressed. Because these features were minimally evi­
dent on the MCMI during depression, but rose to a prominent level
on recovery, questions regarding the popular assumption of a posi­
tive relationship between obsessive-compulsive traits and depression
were raised. These findings appear inconsistent with those of
previous studies indicating that premorbid obsessive-compulsive
features distinguish depressives and that these features are more
prominent during an acute depression.

The apparent increase in compulsive-conforming features,
coupled with the simultaneous decrease in passive-aggressive,
negativistic features during recovery from depression appears
possibly contradictory to the concept that the depressive process
is characterized by repression and inward direction of anger.

Comparison of data between initially depressed and initially
non-depressed subjects also indicated a lack of significant dif­
terences between these groups on the MCMI dimension most closely
related to dependent personality features, a factor widely believed
to distinguish depressed individuals.

The patterns observed in the data in this study appeared to
indicate that no particular personality factors distinguish between
depressive and non-depressive clinical subjects, either prior to
or following depression. However, during the course of acute de­
pression, several distinguishing features were apparent. Some of
the personality features which were apparent during depression did

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not appear to be consistent with some widely accepted concepts regarding the personality features which accompany depression.

These results are inconsistent with those of several studies which have compared recovered depressed and normal subjects, but are consistent with those of a longitudinal study conducted by Lewinsohn et al. (1981) which compared depressed, non-depressed, and normal subjects.

Conclusions

Having summarized the results of this study, it is important to discuss the difficulty encountered in making inferences regarding premorbid personality traits from measures made with the MCMI under acute symptom conditions. Data from reliability studies conducted during the development of the MCMI indicated adequate test-retest reliability of the eight basic personality scales with clinical subjects in active psychotherapy. Millon (1983) did not indicate whether these subjects were inpatients or outpatients and did not measure levels of symptom severity.

The conditions under which the MCMI measures were made in this investigation may have presented a more challenging test of the reliability of these scales. The sample for this study was drawn from the population of an acute inpatient treatment unit. Subjects in such a unit might be expected to show high levels of symptomatology at admission and when improved, show marked changes in symptom levels at discharge. Certainly, greater contrasts in symptom levels would be expected between pre- and post-tests with this
population than with patients in outpatient psychotherapy or even perhaps, in long-term inpatient care. Such large differences in symptom levels may have negatively affected the reliability of the MCMI measures.

Additionally, the small number of subjects in the sample used in this investigation may have negatively influenced the stability of the personality measure used. Because of the small number of subjects, it was necessary to use a Spearman Rank Order Correlation, rather than the more powerful Pearson Product Moment Correlation test to obtain correlation coefficients. The lesser power of this statistical test may also have detracted from the reliability coefficients obtained.

Although data from recovered depressed subjects were available for analysis and provided a defensible basis for inferences regarding premorbid traits, the discrepancy between the promise and the performance of the MCMI basic personality measures in this study is a disappointment.

Recommendations

A major concern throughout this study has been the relatively small number of subjects available. Although more than seventy subjects originally agreed to participate in this study, many failed to complete the criterion instruments in a manner which produced reliable results. Additionally, many subjects failed to complete post-tests. The small size of the final sample tended to reduce the authority and inferential value of the results. To ensure a
larger sample by collecting data from a larger population for a longer period of time would add to the value of the results obtained.

Another factor which may have contributed to the lack of differences in personality measures between recovered and non-depressed subjects was the fact that comparisons were made only among clinical subjects. Previous studies have found differences between recovered depressed and normal subjects. Although a comparison of recovered depressed and normal subjects is open to criticism because clinical subjects with symptoms other than depression are not included, the lack of comparisons with normal subjects in this study may have been a factor which contributed to the lack of differences found within the clinical population when acute symptoms had abated. In following investigations, it would be advantageous to make three-way comparisons of personality among clinically depressed, clinically non-depressed, and normal subjects. This design would likely be more sensitive to any differences present.

Although several factors were present in this study which may have negatively affected the stability of the MCMI measures in relation to changes in symptom levels, the appearance of this problem in the present investigation suggests that an instrument which will provide stable, premorbid trait measures under symptomatic conditions may not yet be available. The ability of the MCMI to provide stable trait measures should be researched further using other clinical populations and larger samples.
Perhaps it is unrealistic to assume that an objective personality instrument can provide measures of stable, long-term traits when the most prominent features of an individual's way of thinking, perceiving and behaving are influenced by acute psychiatric symptoms. If this is true, until greater reliability of objective personality measures is demonstrated, studies of patients who have achieved stable recovery or longitudinal studies which span both premorbid and postmorbid stages of functioning may be most appropriate to investigate the relationship between personality and depression.

Although the results of the present study have not identified a relationship between premorbid personality and depression, the possibility of such a relationship has not been precluded. More refinement of measurement techniques and repeated investigations using well controlled research design will be necessary to provide further answers to the research question this study has addressed. Further investigation of that question may be able to add to the understanding of the etiology and processes of depression. A better understanding of the etiology and processes of depression will undoubtedly also provide better tools for treatment and control. In view of its prominence as a major mental health problem, an increased understanding of depression through research can only be beneficial to both the clinician who treats it and the patient who suffers from it.
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